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LEHMAN CAVES

....ITS HUMAN STORY

From the Beginning Through 1965

by

Keith A. Trexler

Updated Through 1975
By NPS Staff

United States
Department of the Interior
National Park Service

LEHMAN CAVES NATIONAL MONUMENT
Baker, Nevada 89311
1966

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PREFACE

This "history of Lehman Caves" is a copy, rather than an edition, of Keith Trexler's Lehman Caves - Its Human Story; which he completed in 1965 after several years of research. It is copied just as he wrote it with the exception that three of his appendices have been omitted. They include 1) The Proposed Great Basin National Park, an account of proceedings which have developed from efforts to establish a National Park in the Wheeler Peak area; 2) a list of Lehman Caves National Monument Superintendents; 3) a list of Friends of Lehman Caves National Monument.

The first, although of historical interest, is an unfinished story insofar as a National Park has not yet been established. While efforts are still being made in its behalf, it is not yet really a part of what one might consider to be the history of the cave or of its administration. The information in the second appendix, List of Superintendents, is part of the Personnel Roster which has been included in this copy. The third omitted appendix was not considered to be of historical interest.

The purpose in preparing this copy of Trexler's history has been so that seasonal guides may be given copies of it to read and study independently and/or on their own time. Until the present only a few copies of the history have been available for the guides to read.

Guides who are interested in the omitted appendices may find them in the master copy of the history which is in the monument files.

June, 1977

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FORWARD

I think a serious and committed historian cannot write about anything without becoming involved in the issues and personalities. There is no such thing as a definitive history. The history written is always wrapped up in the preoccupations of the writers.*

Yes, this author, although not a professional historian, became wrapped up in the history he was writing. As a result, the work turned out to be much more voluminous than ever intended. In fact, the whole project never was intended or planned. Like Topsy, it just grew.

A medal of some sort probably should be awarded to anyone who will plow through this entire tome and an extra gold star to him who is brave enough to finish the appendices too. Seriously though, this history was written to satisfy the need for a single source of information on the history of the Caves and the Monument. It is aimed at the interpreter and we hope it will help him to answer the questions posed to him by the most interested of visitors.

Much more could have been covered. Many things an administrator might want to know — finances, water rights, local electrical proposals — were left out as much because of lack of time as lack of interest on the part of the author. Some future Monument historian may wish to do these things as well as to refine the subjects covered herein. Suggested sources for further research and many unanswered questions are in the Monument files. May the future chroniclers enjoy **their work** as much as I have enjoyed mine!

Many thanks for aid in preparing this history are due: To my wife and family who, during this project, seldom had a father at home; to Superintendents Paul M. Steele, for encouraging me to embark upon the project, R. R. Jacobsen, for making the research "official", and Peter L. Parry, who gave me time to finish; and to Administrative Assistant James F. Beck, who gave me sound advice I didn't always take.

*Arthur M. Schlesinger, Jr., quoted from the National Observer, December 6, 1965, p. 13.

Mrs. Irene Lehman Johnson, granddaughter of Absalom Lehman, George Baker, Ralph Kaufman, Daisy Rowley, Leon Rowley and Ray de Saussure; and personnel at the L.D.S. Church Historians Office, Bancroft Library, and Utah State Historical Society also gave me much material and encouragement.

Finally, much credit is due to the Lehman Caves National Monument staff whose restraint in the face of continual harassment is appreciated.

K. A. T.
March, 1966

INTRODUCTION

"It is never really possible for us to determine just what we know and what we wish that we knew."¹

Truer words were never spoken and we have an eerie feeling that the author who wrote those lines had our Lehman Caves story definitely in mind. In the pages that follow we will attempt to present the facts and legends associated with the Caves and draw from these diverse presentations a sensible story of the Caves' when and who.

Briefly, the history of Lehman Caves began more than 500 million years ago in the Cambrian period of geologic time. The story includes at least two discoveries of the Caves' entrance; one by indians who buried the bones of their dead therein, and one by Absalom Lehman. It tells of the establishment of Lehman Caves National Monument under U.S. Forest Service administration; of the assignment of the Monument to the National Park Service; of extensive developments at the Caves during MISSION 66; and, for our purposes, ends December 31, 1965.

The Geographical Setting

Located in east central Nevada (White Pine County) approximately ten miles from the Utah State line, Lehman Caves National Monument occupies one square mile of typical Great Basin foothill terrain. Elevation at Monument headquarters is 6,825 feet above sea level. Perennial streams pass close to the Monument on the north and south but there is no stream flow through the Monument. The climate is typically montane with cold snowy winters and brief, not extremely warm summers.

A paved highway leads five miles from the Monument to Baker, Nevada, and Nevada Highway 73. The latter joins U.S. Highway 6-50 six miles to the north and Utah 21 about eight miles to the south. Ely, Nevada, sixty-eight miles to the west of the Monument, is the closest large town.²

Geology

The sedimentary rocks of the Monument, laid down in Cambrian seas about 500 million years ago, include Pole Canyon Limestone

and Prospect Mountain Quartzite. Along the western edge of the Monument is a small granite mass which was intruded into the sedimentarys in Tertiary times. Lehman Caves, excavated in the limestone some one to five million years ago, contains over 8,000 feet of passageway and is considered to be one of the finest examples of its kind.³

To many the Caves' surroundings seem hostile and useless. Miners, however, have found precious minerals here and ranchers have found that the land will yield much. Thus settlers have been attracted to an area often called desert. Of course, the Indians were first.

Aboriginal History

The history of the original occupation of the Great Basin by man has many missing chapters. From what little is known it is evident that settlement occurred at least 10,000 years ago and perhaps even earlier. The first people hunted big game for food and may have left the rock carvings, known as petroglyphs, found in many of the canyons near the caves. Later a culture based on the gathering of seeds and the hunting of small game occupied the area. About 1,000 years ago, contemporaneous with the hunting and gathering people, a Pueblo-like culture existed briefly, leaving painted pictographs and small adobe villages. In the 1850's, when the written history of the area begins, Indians, variously called Snake, Coshute, Shoshone and Paiute, lived in the valley in front of the cave.⁴

Which of these people placed the bones of their dead in Lehman Caves is not known with any certainty, but one scientist identified the bones as belonging to Shoshonean and Pueblid type individuals. Other scientists would not agree with this conclusion.⁵

Whoever they were, it is fairly certain that they did not enter the portion of the Caves now shown on the visitor tour. Perhaps it was fear of the unknown that kept them from venturing into the complete darkness of the rooms beyond the natural entrance. It is known, however, that Indian miners near Las Vegas, Nevada worked in areas of Gypsum Cave 300 feet from the sunlight, so it is possible that local Indians were stopped from further exploration of Lehman Caves by rock choked passageways. It took the dynamite and sledge hammers of the white man to open passageways to what is now shown to park visitors.

FROM 1776 TO 1885

The Father Escalante Party which journeyed from old Mexico into Utah in hopes of finding an easy route to the Pacific were the first white men to come near Lehman Caves. During the fall of 1776 this small band reached the site of Milford, Utah, about 90 miles south of the caves. In their diaries they described the bearded Indians and the landscape and then returned to Mexico.⁶ Although the good friars most certainly did not come to Lehman Caves, their exploration opened the way for Spanish traders who exploited and enslaved local Indians. It is possible that some of these later sons of the Conquistadores were aware of the caves, perhaps told of it by their Indian captives. Unfortunately no records exist to tell us yes or no.

Some 50 years later, in 1826 and 1827, the mountain man Jedediah Smith skirted the region now called Snake Valley, Nevada. Although his exact route is not known it is fairly certain that Smith came no closer to the caves than the Deep Creek Mountains some 50 to 75 miles to the north.⁷

The next possible time for the rediscovery of the caves was in the 1840's when John C. Fremont traveled across Nevada several times. As best we can tell from the available records, "The Pathfinder" passed all around the caves but never came near enough to be credited with their discovery. Confusion has existed in the minds of many local folks as to how Pruess (sic) Lake, about 14 miles from the Caves, got its name. Charles Preuss was Fremont's topographer on the 1843-44 expedition. The name, properly spelled, appears on maps dated as early as 1855 but apparently is a renaming by cartographers of a nonexistent body of water called Lake Ashley by Fremont. The latter was moved in location on succeeding maps and by 1870 it is in the right spot to be Pruess and is so named.⁸

Members of the 1855 White Mountain* Mission of the Latter Day Saints Church were the first white persons to enter Snake Valley. They camped along Baker or Lehman Creek and several of

*White Mountain is presently called Crystal Peak and lies in T. 36 S., R. 16 W., Millard County, Utah.⁹

the party climbed Wheeler Peak, which the Indians called "Peup," meaning "big." Ezra Granger Williams, one of the men who climbed the mountain, named it Williams Peak "as I was the first white man that gained its exalted summit." Although they explored the area quite thoroughly, they did not report finding a cave.⁹

Three years later another White Mountain expedition was organized. Composed of two separate parties, it explored much of what is now eastern Nevada, visited the sites of the present Pioche and Ely, Nevada, and on April 14, 1858, discovered a cave! George Washington Bean, leader of one of the groups, reported to Brigham Young:

"In the course of our travels we. . .discovered a large cave having numerous small branches. The main cave is half a mile in length and varying in breadth from five to sixty feet. (Indians reported therein) a large and beautiful valley. . .and a band of Indians in an advanced state of civilization, being dressed like white men."¹⁰

This was not Lehman Caves; it is presently called Mormon or Cave Valley Cave and is about 40 airline miles southwest of Lehman. An interesting cavern in its own right, Cave Valley Cave often has been confused with Lehman Caves. Several stories of Indians venturing far into the interior and finding another race of beings, a large spring and river inside, and the storage of Mormon treasures therein originated at Cave Valley and have been applied at various times to Lehman.

Before visiting the cave, Bean left 45 men in "Long" (Snake) Valley to "carry on farming, herding, etc." These settlers apparently did not stay long.

During the 1850's several groups of Army explorers entered what is now eastern Nevada. Expeditions under Stansbury, Steptoe, Beckwith, Whipple and Simpson travelled all around the cave area, but none, with the possible exception of Simpson's group, came near enough to discover Lehman Caves.

Simpson's command passed through the Snake Range along about the same route as taken by the present U.S. Highway 6-50. They saw elk near Sacramento Pass and followed fairly fresh wagon tracks when leaving Snake Valley. These tracks, they were told, had been left by wagons belonging to the White Mountain Mission. The Mormons were said to have returned to Fillmore "because they didn't like the country."

Simpson also named what is now Wheeler Peak "Union Peak, on account of its presenting itself in a doubled and connected form," and recorded:

"It is reported by some of the mail company that there is a cave about three days' travel to the south of Steptoe Valley, into which persons have traveled a mile; some say as many as three miles, when they came to a precipice which prevented their going farther. They rolled rocks down and the lapse of time before striking the bottom showed the depth to have been very great. There is said to be a number of rooms, in one of which is a beautiful spring. It was found by some persons who came from Fillmore City and traveled west. The location of the cave is not given, however, with any precision, and it is not in my power, for want of time, to certify, myself, to the truth of the report. (I may as well say here, however, that on our return route, which was 25 or 30 miles to the south of this, although we saw some small caves, we saw none of the extent described.)¹¹

This, too, was not Lehman Caves; it was the earlier discovered Cave Valley Cave.

Also in the 1850's towns had been established in western Utah and prospectors had likely worked their way into eastern Nevada from both the east and west. By 1864, Pioche, Nevada, the first mining camp of the region to rise to fame, was established. Silver strikes were made in 1865 in the soon to become famous White Pine district. Hamilton, the center of the boom, was a flourishing city in 1869.¹²

In Snake Valley, however, there was little of the excitement associated with the boom and bust mining era. As best we can tell the first settlers here were not after gold or silver in its pure form, but hoped to make their fortunes by ranching or farming.* After all, the miners had to eat.

Perhaps the first to locate in the region was Absalom S. (Ab) Lehman. He settled on Weaver Creek about ten miles north of the caves, sometime between 1866 and 1869.¹³ Soon after arriving there, Lehman sold this property to Dave Weaver and moved to the stream that bears his family name.¹⁴ By 1878, at the time of the first government land survey, Ab was settled about $1\frac{1}{2}$ miles below the caves.¹⁵ During the seventies several other families including Ab's brother Ben had set up housekeeping nearby in what is now Baker, Nevada and at Burbank near the present Garrison, Utah.¹⁶

*A gold mining district was organized in 1869 on Snake Creek, just south of the caves, but little is known of its history. (E.F. Lawrence to Paul H. Steele, Nov. 25, 1958)

One other important expedition to the area should be noted. In 1869 Lt. G.M. Wheeler climbed Wheeler Peak from the west. He was accompanied by Rev. A.F. White, Nevada State Geologist. At that time the peak was named for Lt. Wheeler by Rev. White although settlers who were sympathetic to the southern cause in the Civil War had earlier dubbed the peak "Jeff Davis."¹⁷

ABSALOM S. LEHMAN

Absalom S. (Shirk?) Lehman, the second child of Abraham and Catherine Lehman of Chambersburg, Pennsylvania, was born January 6, 1827. When Ab was 14 his family moved west to Canal Winchester, Ohio, a few miles south of Columbus. According to the family geneology¹ from which much of this account was taken, the trip was made in a one-horse covered wagon on which the younger children rode. Ab, his parents and older sister walked the entire route, much of the time through heavy snow.

By 1849 Ab, then aged 22, was headed west again, this time in search of gold. After a seemingly unsuccessful venture in California he boarded ship for Australia hoping to make his poke in mining there. The down-under land proved prosperous; Lehman found a gold mine in his back yard and established a number of wool stores.

At some time during his south seas sojourn he was shipwrecked and had nothing to eat but oranges for two weeks. As his daughter put it: "and he never liked them afterward."

His Australian marriage to Mary Taylor of England produced two daughters, Lucy and Martha, both born in Victoria. After the death of Mary and Martha, Ab, with Lucy, returned to California in 1861. There he mined for a time with his brother Jacob, with whom he left Lucy when he moved on.

Ab's next adventure was to take him to Snake Valley, Nevada, where he turned from mining to ranching. He first settled on Weaver Creek, a few miles north of the caves which now bear his name. There "he lived the first summer under a pine tree with Indians for neighbors."²

Some doubt exists as to the exact date he arrived in Snake Valley. His daughter, who relates that he was the first to settle here, infers this might have been as early as 1866 or 1867.^{1,2} An 1869 Army map shows the Lehman Ranch on Weaver Creek.³ Some accounts however, tell that Samuel Hockman was the first to settle in Snake Valley and the date most often given is April, 1869.⁴ The aforementioned map does not show Hockman's ranch.

Little is known of Ab's operations on Weaver Creek nor do we know exactly when he relocated on the present Lehman Creek. We do know that he certified in 1887 that he had used Lehman Creek waters continuously since 1869.^{4a} In 1869 he returned to Ohio, married Olive Smith (he was 42, she 21) and was back in Nevada living on Lehman Creek by the fall of 1870.¹

After being in Nevada several months, Olive wrote home and said she hadn't seen another white woman since arriving in Nevada. As if in response, Ben, Ab's brother, arrived soon with his wife Mary and settled at the site of the present Baker.¹ Another relative, Sam D. Smith, Olive's brother, also moved to the valley about this time.²

Ab and Olive's first child, Laura Nevada, was born near the mining town of Hamilton, Nevada in 1871. Three years later came Frank, born at Pioche, Nevada, who became a Lutheran minister, but died at age 28 in Baltimore, Maryland. One other child was born to the Lehmans; Lawrence arrived "near Osceola" in 1878 and died in 1880.^{1,6} Lucy, Ab's daughter by his first marriage, and Laura were long lived, dying at ages 85 and 78, respectively.¹

Laura and her younger brother Frank often played with Indian children. One of these, Indian Charley, who was raised by Ben and Mary Lehman, often rode a dog from his house to Ab's ranch. Charley must have been proud of his knowledge of English, for he frequently corrected Laura and young Frank. As Laura wrote later: "He was very careful to make us speak our English correctly".

In 1875 several more families were established near Ab's and the ranch on Lehman Creek was a busy place. That year the Lehmans had 25 to 30 cows and on one trip Ab sold 350 pounds of butter. The butter was churned by a water wheel he himself had built. His orchard was productive and the fruit was said to be the best in the region. A large garden was set up and its produce was supplemented with wild fruits, especially strawberries.⁷ By 1880 two hired hands were needed to keep the place going.⁸ Ten years later there were "600 acres, spring pasture, orchard, cultivated fields, stables, blacksmith shop, carpenter shop, butcher shop, corrals, dairy ranch, rock milk house and churn run by water power."¹⁸ Surely enough to keep Ab and 20 hired hands busy!

But Ab had other interests too. He kept his hand in mining, staking a claim in Osceola,⁹ and his political adroitness netted him a position on the "Republican County Central Committee."¹⁰

He was also a member of the County Grand Jury.¹¹

Those who knew Lehman remember him as a kindly man, of medium height and build, with a quick wit, who never turned a needy person from his door.¹¹ The physical description seems accurate from the few photos we have, although one account tells of a "stout and juffling" Ab Lehman who couldn't even get into the cave he had discovered.¹² His generosity and friendliness, though, are remarked upon by so many that this must be the truth. George Robison, born in the 1880's, remembers people telling of Ab "gently" juffling the children's teeth with an old pair of pliers. George though, ran away when Ab tried to pull his teeth.¹³

The rugged frontier existence began to tell on Olive and late in 1881 she and the children returned to Ohio. Ab kept the ranch operating, but left for the east when his wife took a turn for the worse. She died September 19, 1883, aged 35 years.

A saddened Lehman returned to Nevada, leaving the children in Ohio with relatives.

It may have been at about this time that Ab found his cave. There is some indication that he discovered it just after his family went east.¹ One family recollection states he brought stalactites to his wife and children on his trip to see them in 1883.¹⁴ In any event, the first extensive tourist visitation to the caves was in 1885, with Ab doing the guiding. There is no doubt that he fell in love with the underground grottoes and did much in the way of making them more accessible to visitors.¹⁵ (For further data on the discovery and opening of the caves see page 11.)

Only recently (December 2, 1964) was Lehman's signature found among the hundreds inscribed on the caves' walls. The date 1888 and monogram "A L" are beside "Absalom Leh" in an off-trail chamber below the caves' natural entrance. Authenticity of the penciled autograph was evident when it was compared with Ab's hand writing on a document in the monument's collections. Three other "A L" inscriptions appear in the caves; one in such an inaccessible spot as to leave no doubt that Ab himself had completely explored the then known caves.

A society note in the Christmas Day 1886 edition of the White Pine News tells of another of Ab's loves. "Ab Lehman of the wonderful cave in Snake Valley, is reported to have gone to Fillmore, Utah, for a New Year's present in the shape of a new wife. The News hopes that she may prove a thing of beauty and a joy forever." We never learn, however, if the rumors are true, although he "still has the matrimonial bee" in 1886¹⁶ and is "on the hunt for a wife" in 1890.¹⁷

Ab built a ranch house near the caves' entrance, just above the orchard he had planted some years earlier* with the idea in mind to live there and develop the caves.^{1,18} He sold the lower ranch September 1, 1891, but his health failed and he passed on October 11, 1891, at the age of 64, in St. Marks Hospital, Salt Lake City.^{1,19}

His death was mourned by many. One obituary read; "It was he who discovered and opened up the wonderful cave which bears his name."²⁰ Another opined: "His liberality knew no bounds; to many a wanderer, he was a benefactor. His life was indeed an eventful one, full of romance and adventure."²¹ And, we might add, he will long be remembered by the grateful thousands who view his "wonderful cave" each year.

*According to Herb Miller, a long time resident of Snake Valley, the Rowlands planted some of the orchard trees, although Ab had planted most of them. (Interview, April 30, 1965.) A tree ring count showed an apple tree (alive in 1965) in the orchard to be more than 75 years old. This is good proof that the tree was planted in Iehsan's time. Most of the trees were removed in 1934 by CWA crews. (Kent Baird, Letter to P.F. Patraw, April 14, 1934.)

DISCOVERY

The full story of the discovery of Lehman Caves will never be told. All in all, more than 40 widely differing accounts of this event have been found! Our purpose in this history is to record the documented reports, analyze them and then construct the best discovery account possible from the available date.

The earliest alleged rediscovery date is found in a monument administrative report made in the late 1930's. It states simply: "first discovered in the 1860's by a prospector named Hall."¹⁹ No source is given nor is any comment made upon the validity of the statement.

At age 69, Lucy, Ab Lehman's first daughter, wrote that she had visited her father's cave in 1869.²⁰ Eleven years earlier, however, she gave 1879 as the date of her trip to Nevada.¹³ The latter appears to be the correct date since it jibes with other elements of the Lehman family history.¹²

In 1888 a newspaper reporter describes the caves and gives the discovery date as 1872. He also relates that Ab found the caves while looking for cattle.²¹

One of the first newspaper accounts of the caves appears in the December 26, 1885 White Pine News. "The entrance to the cave," the article says, "was discovered nine years ago." This would put the "discovery" in 1876.

Numerous other reports most of them written since 1920, give 1878 as the rediscovery date.²² The authors of these articles probably were influenced by the erroneous interpretation of 1878 for an 1898 inscription on the wall of the cave. (See p.15)

Other authors give dates ranging from 1880 to 1885 and credit Ab Lehman, Ben Lehman, Hays Cook, U.S. Government Land Office Surveyors, Ab Lehman's hired hand, Ed Lake, and unknown prospectors with the "discovery" of the caves.²³

Several records point to 1881 as the first year of underground exploration. Some who knew the caves prior to the early 1950's, when considerable cleanup was done, remember an 1881 date prominently written in charcoal on the cave walls. A letter written

in 1946 tells of a visit to the caves by E.W. Clay, then more than 95 years of age, and recounts that his name and "date mark of 1881 is still visible."²⁴ The Lehman family's recollections also lend some support to the 1881 date. In 1937, Ab's daughter, Laura, then age 56, told the monument superintendent of hearing about the discovery of the caves just after she and her mother moved east in 1881.²⁵ In the family genealogy, published in 1943, she reiterates this point,¹² but in 1945 writes that she is "not sure of the year my father discovered the cave."^{25a} Laura's daughter remembers her mother telling that Ab brought specimens of cave decorations to Ohio in 1883, but notes that Laura's "forgetter" was working quite well by the time she told of this.^{25b}

We might be swayed at this point to accept a pre-1885 discovery date as fact, but before going further let us mention some negative points. John Muir, the indefatigable mountaineer and conservationist, visited White Pine County in 1878 and wrote of the geology and flora of the Snake Range. He does not mention a cave.²⁶ Silver State histories written in the eighties mention other famous caverns but do not say one word about Lehman's Cave.²⁷ Crofutt's travel guide, a must for western bound "dudes" from 1870 through the 1890's devotes several columns in each of the many editions to caves, including Cave Valley Cave, but does not mention the Snake Range underground.²⁸

Finally, although such minutiae of Lehman and the area surrounding his ranch appear in the local newspapers from 1880 through 1884, there is no mention made of finding a cave.²⁹ Other caves nearby are described and are often compared with caves in the east and in California.³⁰ But after 1885 Lehman's Cave is remarked upon time and again in the area's news sheets.

Although it is possible that the discovery of Lehman Caves went unnoted, or that the discoverers wished to keep their find a secret, it seems that some report of the discovery would have been made in a local newspaper. Much less startling items were often printed and real news such as this would surely have been printed. If this reasoning is correct, the cave was not discovered until 1885, for the earliest known written mention of Lehman Caves occurred in 1885.

The White Pine Reflex for April 15 that year notes:

"Ab Lehman (sic) of Snake Valley, reports that he and others have struck a cave of wondrous beauty on his ranch near Jeff Davis Peak. Stalactites of extraordinary size hang from its roof and stalagmites equally large rear their heads from the floor. A stalactite

weighing about 500 pounds has been taken from the cave and planted beside the monument erected by Ivers to mark the spot where he observed the last transit of Venus on Leahman's ranch. The cave was explored for about 200 feet when the points of the stalactites and stalagmites came so close together as to offer a bar to further progress. They will again explore the cave armed with sledgehammers and break their way into what appears to be another chamber."

This description suggests that the first room below the natural entrance had been entered, but that none of the present cave tour route was known. Cave measurements by amateurs are notoriously exaggerated.³¹ If we halve Lehman's estimate of the size of the discovered area it is just right for this first section of the caves. If, though, we take his figures at face value we find that the caves would have been explored to just beyond the Wedding Chapel (see caves map) where a narrow, then drapery restricted tunnel would have been a logical stopping point. The latter view could be cited as evidence for an earlier discovery date, but we feel our choice of 1885 for Lehman's first entry into the cave is correct, especially in the light of other evidence as presented below. On August 12, 1885, a visitor to the caves reported: "Leahman's (sic) Cave in Snake Valley has been explored 1,500 feet and still there is no end to it."³² One, not so local account, appeared in the September 4, 1885, Genoa Weekly Courier noting that the caves had been discovered only four weeks ago.³³ Allowing time for the correspondent's travel, and writing and publishing of the article, early spring is a plausible "four weeks ago."

In late September 1885, Lehman offered the "News scribe" a trip to the "recently discovered wonderful cave" but editor Simpson declined and acknowledged "a very kind invitation."³⁴ The next month notes appeared to the effect that the "recently discovered cave" had been explored to a distance of one mile and that cave specimens were sent to the state fair in Reno.³⁶

In December a correspondent of the San Francisco Chronicle added a new dimension--the cave was discovered considerably before it was entered. "The entrance to the cave was first discovered nine years ago (1876), but little attention was paid to it then as it was thought to be a small cavern. Six months ago, however, A. Lehman. . .determined to explore it."³⁷

Although numerous other accounts of the caves and its beauties are found in the next few years, only two contain references to the rediscovery of the caves. One, an 1888 Sacramento item,²¹ gives 1872 as the date, and a diary account written in 1893 says 1885.³⁸

HANDWRITING ON THE WALL

Inside the caves there is other evidence which supports our thesis of an 1885 rediscovery. It was common practice in the early days to write or scribe one's name or initials and the date of the visit on some prominent stalactite or stalagmite or on a smooth cave wall or ceiling. In the off-trail portions of the caves, walls often are nearly completely covered with such inscriptions.

We should look, however, at the several problems that exist when dealing with such data before basing any conclusions on them. First, one must consider the possibility that the dates are fraudulent and were put there to hoax those who came later. Such is certainly the case of the 1805 date placed by a man still alive in 1963.³⁹

Secondly, we do not have a complete record of the names. Many of the inscriptions along the present tour route were probably cleaned off the walls by early cave operators or by the National Park Service.⁴⁰ In addition, many of the marks may have been covered by dust or flowstone or washed away by cave waters. In some sections of the caves, however, it is almost a certainty that all of the names are preserved in their original condition.

Lastly, interpretation of names and dates is often unsure because of scudding, poor penmanship and bad lighting.

The earliest date now visible in the caves is July 4, 1885. It is in the area north of the Gothic Palace and is associated with the names "Dock" Baker and Dan Simonsen and the initials B M and G H. "Dock" Baker was P. M. Baker, one of Snake Valley's first settlers. Dan Simonsen also settled in the area before 1885.⁴¹ We can only guess that B M and G H might possibly have been Bill Meecham and George Hickman. With this as a starting point, it is possible to trace (using the wall writings) the subsequent exploration of the caves.

Only two days after Baker and his friends made their trip, George Robison, Brick Hockman, E.W. Meecham and E.H. Lake explored nearby passages. By July 27 Willard Burbank and E.H. Lake viewed the caves' midpoint. On August 31 the northernmost

reaches of the caves were "discovered by P.B. McKeon and A.S. Behman."^{*}

McKeon we know well. He was a prosperous citizen of Frisco and Milford, Utah, and brother-in-law of a Snake Valley settler.⁴² But who is A.S. Behman? No such name appears in any of the early histories or in census, tax, voter or school records. Can one assume that McKeon, whose handwriting the scudges seem to be, didn't know Ab well enough to get his name right? If so, and it was truly A.S. Lehman who explored the caves with McKeon, why didn't Ab notice and correct the error? Was it his "good nature" to let the mistake go by? (We like to think that this was the case.) Or was there really an A.S. Behman? An interesting puzzle indeed.

At this point we should deal with a couple of well known (and some not so well known) Lehman Caves inscriptions. One can be found on a wall in the complex north of the natural entrance and appears at first glance to read "O Penrose 1878." And so it was quoted for many years.⁴³ Close examination reveals, however, that the date is really 1898. Penrose probably did not even arrive in eastern Nevada until 1890.⁴⁴

The Southern Utah Times' blatant advertisement on a large flat wall in the Talus Room appears to date from 1885. Charles S. King, editor of the Frisco, Utah, tabloid was fond of decorating the surroundings with his paper's name. A contemporary editor notes: "Mr. King spent four days in town during which time he industriously and artistically (?) painted the name of his paper on nearly all the board fences in Beaver." Such proclivities, plus anti-Mormon tendencies and a sharp and sarcastic wit sent Mr. King out of several locales on the proverbial rail with a coat of tar and feathers. He probably visited the caves during his shortlived employment in Taylor, Nevada.⁴⁵

On the same wall with the Times ad are several personal names. One of these, Charles Beers, was at first thought to be that of the Times' editor. Actually, Charles owned a way station at Beers' Spring, some 30 miles south of the caves, and operated a stage line between Osceola and Frisco. His brother, James T., whose initials also appear on the wall, was a Frisco pharmacist and "doctor." "Annie Beers," the remaining name at this spot, was James' wife.⁴⁶

Other names near the Beers' are William R. "Billy" Bassett, the one-time sheriff and prosperous saloon keeper in Ward and Taylor; Georgie Bassett, his wife; Edna Bryant, a dancehall girl; and James H. "Jimmy" Harris, Bassett's barkeep. This group must

^{*}Not all of the cave was entered in 1885. A small crawl off the Lodge Room was probably not entered until 1887 and other passages remained untraveled for 60 years.

have been among the first to enter the back portions of the caves as the date of their earliest inscription is September 12, 1885.⁴⁷

Ab Lehman's name has been found at only one spot in the caves. In a small grotto several levels below the natural entrance "Absalom Leh A L 1888" is pencilled on the cave wall. The "A L" monogram, with the "L" looking like a backward "J" is found elsewhere in the caves, however, giving us good reason to believe that Ab Lehman explored all of the caves himself.

And for humor. . . In a cozy nook just off the Grand Palace we find:

"Can you keep a secret?"

"Yes."

"Well, I am a married man."

"Kiss me. I won't tell your wife."

"All right if you won't tell my husband."

The pencilled script, although not exactly logical in sequence, is old fashioned and alternates from a masculine scrawl to a more petit feminine hand. Farther on in the caves, depending of course on the route one takes, there is a cryptic "Touch me not!" in the same feminine handwriting. We wonder if this refers to the delicate cave decoration nearby or to. . . May we assume we know the answer when we see: "Oh you darling. I love you. B.D."? Then: "Yes, but don't squeeze me so tight, B.S.!" The finale comes at the far end of the cave: "Isn't this a lovely place to spoon?"

But we digress. . .

HOW IT WAS FOUND

Little mention was made in the 19th Century accounts of the caves' wonders of how it was discovered. By 1920 a legend was established which relates that Ab's horse was truly the discoverer. Versions vary, but the weight of numbers is in favor of the tale that Ab's horse, while being ridden across the terrain in search of cattle, broke through a crust of rock covering the caves' natural entrance. Ab, being inquisitive, enlarged the hole and "discovered" the caves.⁴⁸

An equally plausible chronicle tells of a log, pulled by Ab's horse, sticking under and moving slightly a large rock which covered a sizable packrat nest. The nest was set afire and after burning "several weeks," revealed a large cavern.⁴⁹

Perhaps the best of the "horse stories" was written by Frank Beckwith, a Delta, Utah, newspaperman:

"Well, legend says a mountain rat was gallopin' off with a slab of sowbelly that Lehman was at times nibblin' off of and that Lehman was in hot pursuit on horseback, just a whoopin' it up, when both rat and horse fell down the shaft with Lehman astride (the horse of course, YOU darn fool) and he saved his life only by his quick wit and unerring eye, for as he felt his foot going out beneath him, he uncoiled his lariat, and with that precision that all plainsmen have, deftly lassoed a cedar tree just as he shot through the hole, and there he sat in mid-air clenching the horse for four days until a rescue party gave him a lift, yanking the rider and horse back up out and started the story going.

The clenching made Lehman bow-legged for life. Pretty hard on legs, such a stunt is!!"⁵⁰

Although the horse discovery story has been told for years and is accepted by some as gospel, there is reason to doubt its truthfulness. Two speleologists, both of whom are quite familiar with Lehman and other local caves, assert the geological structure of the entrance simply isn't the kind that would collapse under the weight of a horse.⁵¹ Then, too, there is evidence of Indian use. Granting that the natural opening only had to be large enough for one person at a time to enter, it

was probably much larger or the Indians would not have found it, and would not have gone into the caves. It is also doubtful that the original entrance was completely covered over after the aboriginal use.⁵²

We rest our case against the horse with the following: An old time resident of Baker, and one of the first Forest Service Rangers to work at the caves, states that the horse story was "pure fiction."⁵³ Fred Schumacher, probably then the oldest living one-time resident, said in 1963: "No horse fell in."⁵⁴ Mr. Mack Sly, of Delta, Utah, in August of 1939 in a conversation with a monument custodian, said he helped Ab pull a horse out of a cave, but it wasn't the Cave.⁵⁵

A newsman writing in 1924 mentioned the horse story but adds that old-timers then alive did not give credit to the horse! He implied, in fact, that Mrs. Beatrice Rhodes (who was then operating the caves) had invented the whole thing to make some poetry rhyme!⁵⁶

The Lehman family record says nothing about a horse playing a part in the discovery. According to Ab's daughter, Ab had known of the hole in the mountain for several years, but since it went straight down for a considerable distance he had not gone in. One day, date not specified, curiosity got the best of him and he let a rock weighted string down into the orifice to determine the size ladder needed to descend. Later, alone, he ventured underground with a lantern and realized the potential of the wonders he had found.¹²

Lehman's daughter also writes that possibly Ben, her father's brother, was the real discoverer. "He was passing a clump of brush when he felt a strong current of wind which he found came from a hole in the ground."¹² This is the way many caves have been discovered.

One final possibility, and a likely one, is espoused by "Judge" E.W. Clay. Clay, whose name appears in charcoal throughout the caves and who was a good friend of Ab's, tells that Ab's attention was first attracted to the caves in 1878 when he saw a pole protruding from a hole in the ground. "It was about 30 feet long with holes in it into which birch sticks had been driven---an improvised ladder which prospectors had made to get into the cavern." Mr. Clay's⁵⁷ first trip into the caves "in 1881" was via this crude ladder.

Who Was First?

We will probably never know for certain who was first to view the interior of Lehman's Cave. Several accounts, however, agree that the first party included most of Snake Valley's early citizens. Among those most often mentioned are Ab and Ben Lehman,

Willard Burbank*, Dan Simonsen*, E.W. Clay*, Ed Lake*, William Atkinson, Isaac Gandy, George Robison*, D.A. Gonder, P.M. Baker*, and Nettie Baker. The last mentioned was probably the first white woman to see the underground passages, although many other women were soon to make the trip.⁵⁸

A Theory

What is the real story? We believe it goes something like this:

Indians, perhaps as early as 1,000 A.D., knew of the caves' entrance. Whether or not they entered the caves is difficult to say---the evidence can be interpreted either way. Almost certainly the Indian bones found beneath the natural entrance were deposited there on purpose. It is possible but not probable that local Indians told the white settlers of the caves. More than likely, however, the Indian contemporaries of Ab Lehman knew nothing of the caves, it having been used by their remote ancestors.⁵⁹

If prospectors were the first to find the caves they apparently promptly forgot about it. It apparently contains no mineral worth.

In 1885, completely unaware of any cave, Ab Lehman and his hired hands, out looking for cattle, find a relatively large crack in the earth. One of them is let down on ropes into a fairly complex cave room beneath the natural entrance. It appears too vast to explore without preparation so the man is hauled up and further exploration planned.

This may have been as early as 1881, but we favor the 1885 date for several reasons. These include the fact that the first known newspaper report (related by Ab himself) is in 1885;⁶⁰ the fact that, at present, no dates earlier than 1885 are found in the caves, and the fact that all reports of earlier discovery dates are at best second hand. Most of the latter reports come from the 1920's and after, and even Ab Lehman's daughter admitted she is unsure of the date of discovery.⁶¹

A bit more difficult to discount are reports of an 1881 date being seen in 1948 beside E.W. Clay's signature on the caves' wall.⁶² I can only offer the possibility that this was a mistake or a misreading of a prominent 1891 date that is there. Certainly Clay's name is not associated with 1881 elsewhere in the caves. In several places his signature, along with Ed Lake's, is clearly dated 1885.⁶³

* These names are found inscribed on the caves' walls and have 1885 dates associated with them.

If, as we suppose, 1855 is correct, Ab Lehman's first act, after discovering the caves was to tell the local newspaperman of his find. (We cannot believe he would wait 5 to 20 years to make the announcement.) Exploration parties were soon organized with persons coming from as far away as Milford, Utah, nearly 100 miles from the caves. By August 31 all major portions of the caves had been entered and development of the easier routes begun. All of these events are recorded in contemporary newspapers or in charcoal on the caves' walls.

Whatever the truth may be, and we shall probably never know the actual story, Ab Lehman was the first to recognize the caves as something unusual and worth developing. To him, then, should be given the honorary, if not earned, title of discoverer.

Early Development

Even though the "tourists" of the eighties were accustomed to somewhat more rugged facilities than we find today, Ab's job of opening the caves was not an easy one. One narrative has it that he had "rolled away huge stones" before even entering the caves.⁶⁴ This is unlikely but it is certain that some contrivance was needed to descend the 30 feet from surface level to the floor of the caves' first chamber. Legends tell that ropes were used for a considerable period, but by September of '85 a ladder was in place.⁶⁵

After entering, the first project was to "explore the cave armed with sledge-hammers and break their way into what appears to be another chamber."⁵⁹

Some ladders had been placed inside the caves by August, 1885,⁶⁵ but ropes were still in use near the end of the caves' trail. Two months later, Lehman was looking for an easier access route.⁶⁶ Whether this meant an easier access route from the surface or an easier route into the remainder of the caves from its first room, we cannot tell from what is written. The present appearance of the caves suggests it was the latter problem that was solved.

In December ladders were in use throughout the caves, replacing the harder to use rope assists.⁶⁷ Development went ahead apace as Ab and "several men (were) at work all winter and have opened up all the narrow passages in that subterranean place. Stairways have been substituted for ladders, and ladies can walk right through without fatigue. Mr. Lehman is also prepared to entertain men and beast."⁶⁸

The foregoing comment causes us to ponder another problem. What sort of facilities existed on the surface in the early days? Our evidence is indirect, but it appears that Lehman built some

kind of shelter near the caves' entrance. (That this structure survived until the 1920's, as is claimed by some,⁶⁹ is doubtful.)

It is highly probable that Ab planted an orchard in the flats immediately below the caves' entrance.⁷⁰ Whether all the trees there today (1965) are "originals" or later additions it is difficult to say.⁷¹ (See footnote p.10 supra.) Lehman did develop an irrigation system using Lehman Creek waters and possibly a reservoir at his "Cave Rancho."^{*} Portions of the ditch that carried the water from Lehman Creek still existed in 1965.

What the "many improvements," noted as being available at the caves in the fall of '87 were, we do not know. A remark that the "entrances" had been enlarged leaves us to wonder, "Which entrances?"⁷² As an additional improvement, Old Glory "further ornamented" the columns dedicated to Lincoln, Grant, Garfield and Stanton. Charcoal labels were scratched on these and other formations and "appropriate" names given the various domes, pits, crawls and rooms.⁷³

Much of the work must have been done by Lehman himself. In January 1889 he advertised his lower ranch for sale and noted that "the proprietor wishes to move to his other ranch, situated at the mouth of Lehman's Cave. . . which requires his whole and undivided attention."⁷⁴ Ab had at least one assistant at the caves; George D. Coburn, who was buried at the Cave Rancho in August, 1891.⁷⁵

"Rustication" at the underground wonder was reported all during the period. Numerous articles in newspapers both far and near, the appearance of a "wagonload" of cave decorations at the State Fair in Reno, and word of mouth recommendations from the early spelunkers kept the public aware of what was to be seen in the eastern Nevada caves. About 800 persons were conducted through the caves before September of 1885⁶⁵ and "hundreds" each year thereafter. Many of the visitors wrote that they were personally guided by a congenial Absalom Lehman who had explored much more of the caves than he showed them.⁷⁶

Did the early visitors follow the same guided tour route taken today? Although contemporary descriptions are difficult to apply to the caves as we see it today, sightseers of the 1880's and 90's probably spent more time in the caves than the 1½ hour norm of 1964. On their trip they crawled and scooted, had to

*See statement by E.B. Robison, Jan. 22, 1952 in Water Rights Docket. Drawing Nm-Lc-6978 shows the pond with a penciled notation; "constructed 1899 or 1900."

squeeze through the Needle's Eye, Fat Man's Misery and Thin Man's Delight and had a rough, knee scarring journey over the Rocky Road to Dublin. Some viewed the Shoshone and Yosemite Falls, Jacob's Well (there are two areas so marked), the Oven, Cleopatra's Needle and Oyster's Cove. Lake Como, the Big Room, Bridal Chamber and Angel's Wing are shown on today's tours, but locations of many of the other named areas are a mystery now.

On September 1, 1891, in response to the ad mentioned earlier, C.W. Rowland purchased Lehman's lower ranch for \$3,000.⁷⁷ Ab was not to realize his dream of further developing "Lehman's Wonderful Cave." He died, of grippe, in Salt Lake City, on October 11, 1891. He was 64 years old.⁷⁸

1891-1920

In the years immediately after Lehman's death little is reported of events at the caves. Occasional visits are recorded but there is no word of further development, above or below ground, until the 1920's.⁷⁹

Lehman's Cave Rancho, although never filed upon by Ab, was sold in November, 1892 by estate executor W.N. McGill to C.W. Rowland for \$700.⁸⁰ Interestingly enough, this "homestead" of 7 acres⁸¹ did not include the caves. The cavern's entrance has always been in public ownership.

Rowland apparently was apathetic about the caves' property and consequently lost it to the county for taxes in 1895 and 1897, getting it back each time by paying what was due.⁸² After his death in 1905, Rowland's heirs held the property until 1911 when they sold it to P.M. "Dock" Baker.⁸⁰

Earlier, on February 10, 1909, a forest reserve embracing much of the Snake Range was created by presidential proclamation. In 1912 the caves and the lands surrounding Lehman's old homestead were added to the reserve which eventually became Humboldt National Forest. Thus, proprietorship of the caves officially passed to the Federal Government represented by the United States Forest Service.⁸³

It is probable that the first Forest Service administrators recognized the recreational potential of Lehman Caves and tried to provide for its protection. A sign was erected at the caves' entrance advising all visitors of federal laws prohibiting the destruction of natural beauties. However, Baker's land below the caves was situated so as to control entrance to the caverns and actual federal supervision of cave use was nil.⁸⁴

The following years at the caves were uneventful. Ernest C. Adams, who had guided parties through the caves and had acted as custodian for Baker, obtained title to the land in front of

the caves on December 13, 1919. Perhaps it was Adams who first astonished tourists who broke the cave formations. His motto was: "Take all that is loose but break nothing down."⁸⁶

Adams' ownership was shortlived. Nathan Kiger and Clarence Rhodes became owners in 1920. The partnership did not last long and Rhodes became sole proprietor in 1923.⁸⁵ But we are ahead of our story. . .

The Tourist Arrives

Following World War I, automobile travel began to be the way to get from one place to another. There was but one problem in the early days; few roads were fit for horse-drawn conveyances, let alone horseless carriages.

Someone with vision was needed to get the pavement on the ground.

A driving force behind much highway improvement in Nevada was C.C. Boak, a Tonopah mining broker and a national Grand Central Highway (Highway 50) Association director.⁸⁷ In July, 1920, at the formal opening of the road, Boak, with a large group of dedicators, spent three days at Baker and visited the caves. A press report of the occasion grandiloquently described the caves. It was said to have four miles of passageways and exceeded even the famed Mammoth in its beauty. A "wagon road" costing \$150, two thirds of which had been donated by local citizens, had been built that year to connect the caves with the new highway.⁸⁸

In June of 1921, Boak and photographer E.W. Blair returned to the caves to explore it further and to take photos for publicity purposes.⁸⁹ According to local papers business was flourishing at the caves, though accommodations, except for water and a place to picnic, were lacking.⁹⁰ The Mira Monte Hotel in Baker benefited from the increased tourist travel.⁹¹

That fall, Boak, in cooperation with Nevada Senator Tasker L. Odie, began corresponding with the Secretaries of Agriculture and Interior to find out what was required to have the caves proclaimed a National Monument. The Director of the National Park Service asked for and got from Boak detailed descriptions of the caves and its surroundings including maps and photos. These were also referred to the U.S. Forest Service for appraisal.⁹²

These studies, published in brief in newspapers, reportedly included data on cave temperatures, geology and elevations which only recently have been rediscovered through involved research. The report noted that national circulation motor magazines had given much play to the Nevada grottos and that their existence had been practically unknown until the Grand Central Highway was completed.⁹³

A Monument

"Lehman Cave Made National Monument" the Ely Record headlined on February 3, 1922. President Warren G. Harding had proclaimed the caves a National Monument on January 24. Quoting the Record: "the creation of this national monument is the result of a petition started by C.C. Boak, Tonopah, and backed by local citizens." Those helping Boak included Chris Roan, Andy Barr, George Doyle, Vail Pittman and Charles Russell.⁹⁴

In spite of this official recognition of the caves' values, the Forest Service evinced little interest in supervising operations there. Except for a few inspections in the late 1920's the Federal Government let the private operators do as they pleased.

In the spring of 1922, there were predictions of a great travel (thousands per year) to the caves coupled with optimism for the future development of Snake Valley and Baker. The latter was to be the largest truck garden in Nevada and apples from the old Lehman Creek Ranch were touted as the finest in the state. A "noted" geologist, no name given, was soon to explore the caves, whose theoretical size (greatly exaggerated) had increased to 20 miles.⁹⁵

A grand dedication was planned for July 4. Boak called for an all out "show" and enlisted the aid of the American Legion, community officials, including the Mayor of Baker, and local school children, whom he hoped would provide a fitting banner for the occasion. Graham Quate, Baker forest ranger, was to erect a tall and sturdy flag pole near the caves' entrance.⁹⁶

C.T. Rhodes, one-time restaurateur and Nevada's governor's chauffeur,⁹⁷ was made official custodian of the caves earlier in the year and was to keep guide fees as his pay. For the big day, however, no fees were to be collected except a service charge for candles.⁹⁸ Later this was amended because of the large numbers of people expected, and only the first party of the day was given free access to the caves.⁹⁹

As plans progressed and the program enlarged, August 6 was finally selected for the formal dedication program. The American Legion in uniform hoisted the colors and provided a "firing squad." Vocal music was furnished by two local songstresses. Addresses on the caves and its history were given by Forest Supervisor Alexander McQueen, Ranger Quate, and Boak. An estimated 500 persons attended the gala event and were well pleased with the program, the caves, and Mrs. Rhodes' food.¹⁰⁰

Just before the dedication a minor furor arose when someone suggested the caverns be named for Teddy Roosevelt. Local opposition, voicing sentimental ties to pioneer Lehman, squashed the idea quickly and Lehman's Cave it was.¹⁰¹

Fix Her Up

Improvements both inside and outside the caves began immediately. Sleeping tents were placed in the orchard near what was said to be Lehman's old home* and an "under the arbor" dining room set up. Stairways replaced ladders in many places in the caves and cave floor excavation provided headroom where previously one had to crawl. Tours were made to the farthest reaches of the caves and a 70 year old lady made the tour without trouble. The "Panama Canal" was constructed to bypass the muddy and fearsome "Fat Man's Misery."¹⁰²

Publicity continued apace. Eastern newspapers raved and even the conservative Christian Science Monitor carried an article on the caves. Travel maps were amended to include Lehman's Cave among the scenic attractions of the west. Often, exuberance overruled reason and such claims as "larger than Mammoth," "four miles explored," and "columns 100 feet high" had to be taken lightly.¹⁰³

The fall of 1922 brought further publicity to the area when the movie "Covered Wagon," an early Hollywood super spectacular, was filmed in the open country just south of the caves.¹⁰⁴

After such auspicious beginnings the following year started with a dull thud! An extremely heavy winter blocked the roads and travel between Ely and the caves was impossible for more than three months. Although horses carried the mail much road-work had to be done before cars could make the trip.¹⁰⁵

Legislators at Carson City, the State Capitol, had not forgotten the caves and in April, 1923, the caves and its surroundings were designated a state recreation ground and game refuge.¹⁰⁶ White Pine County followed suit and proclaimed the whole Wheeler Peak area a county wildlife preserve.¹⁰⁷

That summer, C.T. Rhodes was again given a permit to occupy the caves area and to charge guide fees in lieu of salary. (The U. S. Forest Service was unable to pay for a caretaker.) Approved tour fees were one person, one dollar; children under 12 free; five dollars for twelve or more persons in one party, — truly bargain rates as tours often lasted three hours or more and carbide lanterns had replaced the uncertain and dim candles of previous years.¹⁰⁸

*There is doubt that Lehman's house actually was there. The only photos taken in 1922 show a board and bat building where the present visitors' center is located. The Ely Record for Aug. 11, 1922, telling of the dedication says that near the caves' entrance is "The Ranch House, formerly the home of Abner (sic) Lehman."

The roads to the caves were continually being improved with much of the work being done by Baker citizens on a voluntary basis. Rhodes advertised the "Pine Bowery," out of doors "Lehman Tea Room" of 25-seat capacity and tents for overnight visitors. On the Fourth of July, 41 persons toured the caves.¹⁰⁹

A new service was added in July when pack trips or day rides to Wheeler Peak were offered. A large advertisement in the Ely Record shows Rhodes with a pack string preparing for the ascent. A feature of the trip was a visit to Wheeler's glacier and the small mountain lakes nearby.¹¹⁰

Headlines again! "First Wedding Ceremony at Lehman Caves." On Wednesday, October 17, 1923, at 2:30 p.m., Agnes Miller of Baker was married to Robert Wright of Colorado with Judge McDonald of Ely officiating. The "Fairy Bridal Alter" was decorated and the service performed inside the caves in the "Wedding Chapel."¹¹¹

Early in 1924 national attention was again focused on Lehman Caves and its surroundings. G.C. Boak proposed that the area of Lehman and Baker Creeks, Wheeler Peak, and the caves be made a national park. Nevada Senator Key Pittman introduced the bill in Congress but there was no action taken because of opposition by grazing interests.¹¹²

As can be imagined, the Rhodes were ever alert to increase business at the caves. One of the unique attractions set upon by the enterprising couple was the development of one of the underground chambers as a meeting place for large groups.** First to take advantage of this rather unusual service were the Knights of Pythias, Cyprus Lodge 33, McGill and Ely. Thirty initiates took the Knights' third degree underground midst varied oddities including violin music and a full dress "devil" who appeared in a flash of red fire and sulphurous smoke.

*At least four other weddings have been reported for the Wedding Chapel: In 1925 (Superintendent's Report for April, '37); in 1928 or 29 (according to Tyven Adams, 260 E. State, Lehi, Utah); in 1947 (F.E. Hesselgrosser and Nola M. Kelly--see Superintendent's Report, May, 1947 and county marriage records, Book 139, p. 470); and in 1965 (Superintendent's Report, May, 1965).

**This service was continued into the 1930's probably much to the discomfort of the National Park Service. According to George Gibson, 114 Division St., Carson City, Nevada, Boy Scouts held Courts of Honor in the caves in 1934 and 1935.

Outside entertainment for the 300 persons who accompanied the initiates was more mundane. A dance, pageant, picnic and cave tour rounded out the weekend.¹¹³

Rhodes, with financial aid from the state, continued diversifying cave tours by adding trails, making more headroom on the old routes, and allowing those who wished to, to crawl through the "Fat Man's Misery." Musical selections, played on stalactites, stalagmites and draperies, reminded guests of an organ, a "Chinese orchestra, Scottish bagpiper and an Indian drum." Such entertainments decreased as formations broke under the constant pounding and only the "organ" survived in "playable" condition to fairly recent times.¹¹⁴

In July 1924, Nevada Governor James G. Scrugham visited the caves to evolve further development plans. Improvement of the area was to be by the state. This seems a bit of a paradox when one considers that the caves was on Federal land and the Rhodes' owned the property which controlled access to the sub-surface wonders. Plans outlined included a bath house, a new cave entrance to be blasted through the mountainside and the building of trails to scenic spots in the Wheeler Peak area.¹¹⁵

Later the same month, Governor Scrugham suggested the cave be made a state park and added a concrete swimming tank, restroom, campgrounds, better roads and trails, and trout planting in the mountain streams to the original proposal.¹¹⁶ Swimming tank construction with the state funds began in August,¹¹⁷ and in December, as if to "make it legal" the state obtained the 200 by 150 foot strip of land near the caves entrance on which the tank was built.¹¹⁸

The Garden of Eden?

Meanwhile, an outstanding discovery had been made by "archaeologists." "Garden of Eden may have been located at Ely" were the boldface headlines. A "petrified" skull found here by an oil driller was said to be the true missing link. Somehow, by editorial exuberance we suspect, the "find" was related to Lehman Caves. True, caves near Lehman contained remains of early civilizations, but not the Aztec, Chinese and Egyptian pictographs and artifacts ascribed to them. Eventually, perhaps to increase tourist travel, Lehman Caves was said to contain "hieroglyphics and Egyptian pictographs which archaeologists declare prove conclusively that Nevada was the cradle of civilization." One writer admitted that of course the climate and other things had changed a wee bit since those times. Otherwise, he noted, man never would have made the grade!

Clarification is found in the fine print. The chief "archaeologist" was a San Francisco Examiner Sunday supplement editor! We had suspected some such all along.¹²⁹

Early in 1925 another cave was in the headlines. Floyd Collins' suffering and eventual death in Kentucky's Sand Cave caused local editors to comment on the safety of Lehman Caves. They adjudged it "safe" noting that it had been visited for nearly 40 years with no serious accidents to any of the visitors, a record unbroken to the present.¹²⁰

More plans were being made for diversifying attractions at the caves. Among them, a ballroom (completed by June, 1925), a heater for the swim tank outside, and electrical lighting and a larger lodge room for meetings inside.¹²¹ Although the lighting scheme was considerably delayed, the Ely Elks and Knights of Pythias took advantage of the "enlarged" Lodge Room that summer.¹²²

Highlight of the year was Flag Day. Announced by a full page ad in the Ely paper,¹²³ the event brought 1,000 people, including the cave enamoured Governor Scrugham, who made the original suggestion of a special program for opening the visitor season at the caves.¹²⁴ From the descriptions preserved, Flag Day 1925 presaged traffic and tour problems quite familiar today. Radio was used to direct and control auto traffic and a real effort had to be made to keep tours small enough so that all could see and hear.¹²⁵

Another event was planned for late summer but as best we can tell, nothing came of it. Tobogganning and ski jumping were to be featured! In August!¹²⁶

During the summer of 1926, several large conventions headquartered in Ely and made a trip to the caves as a part of their program.¹²⁷ One Cliff Palmer was made "manager" at the caves by Rhodes. He reduced entrance fees ("and still the cave is profitable") and planned a new \$250,000 hotel and dude ranch at the springs just outside the monument boundary.¹²⁸ The papers reported that under Palmer the appearance of the caves property had improved markedly and new cabins, tents, a large dining room and kitchen, and dance hall were put in.¹²⁹

Early in May of 1927 the caves "resort" opened for another season with "ample housing" and new roads under construction. Several "ready cut" two room houses were set for shipment from Los Angeles.¹³⁰ A New York promoter was hired to advertise the caves and a national publicity campaign was put into gear.¹³¹

Forest Service officials took more of an interest in the caves that year. While inspecting, they proposed that an electrical lighting system be installed and that other improvements be made.¹³²

The Rhodes' (at least Beatrice), returned in 1928, constructed 15 new cabins (one remains near the present visitor center) and a log lodge (which served as monument headquarters until 1961) and provided regular Saturday evening "concerts" for guests and local residents.¹³³

By 1929, either Beatrice was dropping off or local newspapers had more important events to report. The only news was made by the state's offer to return the land deeded to it by Rhodes. Later, Nevada gave him a ten-year lease on the small tract.¹³⁴ That fall, Mr. and Mrs. Elroy Cue moved in to manage the area.¹³⁵

A bar-be-que and dance were set for the first weekend of May, 1930, but a snow storm caused cancellation of the season's opening event.¹³⁶ Both boy scout and girl scout groups visited the caves that summer¹³⁷ but little else is recorded.

Although negotiations must have been going on behind the scenes, the first public mention of Rhodes' disaffection with the caves is in January, 1931. "Option on Lehman Caves is Secured" were the headlines. The White Pine County Chamber of Mines and Commerce had taken an option to buy the property for \$15,000. At the same time a bill was introduced in the state legislature to sell the state lands to Rhodes so that the land could be sold to the Chamber as a package.¹³⁸ As noted earlier, the private lands did not include the caves, but were a tract of about 50 acres just east of the caves entrance.

On February 6 the White Pine County Commissioners agreed to purchase the land for \$15,000.¹³⁹ A month later the state assembly approved the price and passed a bill giving the land to the Federal Government.¹⁴⁰ The actual sale and transfer of property, however, was not to happen for two more years because of "present economic conditions."¹⁴¹

At the caves, business continued "as usual" with weekend outings featuring wildflower, hiking and fishing.¹⁴² The first of many complaints from tourists who had lost their way because of inadequate highway signing was received that summer.¹⁴³

Visitation at the caves dropped to the lowest figure in a decade during 1932. The largest party of the year was a tri-city Lions Club meeting in August. Largely a highway promotional affair, this meeting heard C.S. Beaman, Nevada National Forest Supervisor, report that his superiors in Washington had inspected the caves

and had suggested that the land around them be purchased and given to the government for development. He emphasized that such a move would "aid" the highway construction envisioned by the Lions.¹⁴⁴

Negotiations continued for purchase by White Pine County of the Rhodes property, with the idea implicit that the land and developments be turned over to the Forest Service "for a National Park."¹⁴⁵ Considerable time was to elapse, however, before all questions relating to the transfer of the property to the government were cleared up.

The first report on the monument by the National Park Service is based on a December 7 to 11, 1933 visit of Junior Landscape Architect Harlan B. Stephenson.

"The buildings are of a poor log type construction and consist of a small lodge, 8 cabins, information office and another building about 40 x 56 with flat roof used as a dance hall. There is a small building used as an ice house and two other small buildings used as stables. One section of land owned by the state is a miserably constructed board and batt structure about 40 feet by 60 feet used for recreation and mess hall. In this building are flush toilets. . . a small, shallow concrete swimming pool is close to this building as is also a poorly enclosed heating plant for hot water."

Stephenson also noted that there was no telephone, no electric system, no campground but "some 'supposedly' rustic fence" in the developed area.¹⁶⁶

A month later another report listed 10 cabins "built of logs and are very poorly constructed. In most cases the cabins have a dirt roof and the roofs constructed have been very poorly done." In addition there was a small frame building over the caves entrance and two "good pit toilets" put up by Forest Service and a wooden water tank erected by Civil Works Administration crews. Water from Lehman Creek was brought to the buildings in an open ditch and distributed from the above mentioned water tank in pipes resting on the surface of the ground. By this time a CWA constructed telephone line had been completed, although it was "in pretty poor shape but was affording fair service to Ely,"¹⁶⁷ a condition which was not to be remedied until 1965.

Three other man-made features were mentioned in later reports, an alfalfa field,¹⁶⁸ an orchard with 16-24 inch diameter peach trees, and 20 inch diameter apple trees for a total of more than 40 trees,¹⁶⁹ and several "correls."¹⁷⁰

Since there has been controversy over the origin of some of these structures and features, it might be well at this point to review some of the evidence. The story of the orchard is detailed in the chapter on Ab Lehman. When and by whom the alfalfa field and "correls" were installed we do not know. We are quite certain that the log structures, including the present Rhodes Cabin, were built in the 1920's by C.T. and Beatrice Rhodes. We must, however, prove our contention.

Although Lehman probably built some kind of a structure near the caves entrance prior to 1891,¹⁷² no records have been found which describe or locate it. A 1911 map shows a "house" situated about where the present (1965) visitor center now stands.¹⁷³

In 1921, however, in two very descriptive articles, the Ely Record states that there were no facilities except a camp-ground and drinking water at the caves. No mention is made of any buildings.¹⁷⁴

A picture taken a year later at the dedication of the area as a National Monument shows a structure at the approximate location of the 1911 house made of vertically oriented boards. This same building must be the one referred to in a newspaper article describing the event as "the ranch house of Abner (sic) Lehman. . . (which) stands near the entrance to the caves." Note that this was not a log structure.

In 1924 the Rhodes' were living in a "cabin" and had "shacks" for tourists.¹⁷⁶ Developments on the state lands were finished in 1925.¹⁷⁵ During 1926 the grounds were improved and new cabins and tents, a large dining room and kitchen, and a dance hall were completed.¹⁷⁷ Photos taken in the area in 1925, however, show no log structures. In 1928 Charles Davis constructed a "log lodge and several log cabins" for the Rhodes.¹⁷⁸ These latter buildings, we believe, were the ones acquired by the Park Service in 1933.

However, in 1963 when the old log lodge was removed from the monument to make way for Mission 66 developments, George Baker (grandson of the Baker for whom the nearby town of Baker was named and a lifetime resident of the area) wrote that the building actually had been built by Ab Lehman. He said, "Ab Lehman, Sam Foreman and Emery Heccham built the log house in 1889"; he described it as being 30 by 40 feet in size (the building actually measured 26 by 41 feet), without a fireplace (which was added later by Ben Lehman), but with a dirt roof. Baker felt that the building was merely remodeled by Charles Davis in 1925 or 1926.¹⁷⁹

Mrs. Hol Portland Carpenter, also a longtime area resident and onetime cave guide, stated that the lodge had been built by Ab Lehman "of unpeeled logs drawn by horse from Lehman Canyon." She also mentions a three room house, "quite a large barn," at the caves.¹⁸⁰ Another old timer recalled that Lehman built the structure¹⁸¹ but others in the know felt it was more recent. For example, Ralph Kaufman of Baker stated that he helped Rhodes finance the construction of the lodge---the date was 1928.¹⁸² This agrees with several 1928 newspaper articles telling of the construction of a log lodge at the caves¹⁷⁸ and with the recollections of other local residents.

We feel that the latter evidence, plus the photographic record

cited above, are proof that the log lodge was of recent (1928) vintage and was not built by Ab Lehman. Mr. Baker's opinions are based purely on memory, and are not backed by documentary evidence. In any event, the lodge is not lost. It was sold by the Park Service to George Baker's son, Martin, and is now in use as a residence at the "Border Place," a service station and refreshment stop on U.S. Highway 6-50 where it crosses the Utah-Nevada line.

How were these old buildings used? The controversial log lodge had quite a career. From 1936 until 1939 it was a public contact station, carpenter shop, storage space and residence for the monument custodian. In 1940 it was considered "irreparable and uninhabitable." Less than a year after this apparently valid assessment, the building was converted to an office and contact station with exhibits installed in one part of the building.¹⁸⁵ Later it was again remodeled and most of the building set up as a restaurant and gift shop, leaving a small 6 x 6 office for the monument superintendent.¹⁸⁶ This arrangement lasted from 1948 through 1961 when Mission 66 improvements necessitated closing the old building.

Some of the 8 or 10 log cabins acquired were destroyed for firewood.¹⁸⁷ One of them was used as a custodian's residence through 1936, at which time it and four others were "completely renovated" for use as tourist accommodations.¹⁸⁸ Of these only one, the Rhodes cabin, remains. It was designated as an Historic Structure by the Historic American Buildings Survey in 1962. No record of disposal of the other three cabins has been found.

The old dance hall, once said to have the finest and springiest dance floor in the county, was later used as a garage¹⁹⁰ after its flooring had been taken out and put into the old lodge.¹⁹¹ Still later it was rehabilitated for a dormitory and kitchen for WPA workers,¹⁹² and in 1939 was torn down.¹⁹³ Three years earlier the swimming tank had been demolished.¹⁹⁴ The fate of the other structures is unrecorded but photographs show that most were gone from the monument by 1940.

EMC, CWA, CCC, WPA

Immediately after administration of the monument was given to the Park Service, the Forest Service announced plans to begin various projects at the caves. A group of CCC boys from Berry Creek, near Ely, were to go to the caves in November 1933.¹⁹⁵

This came but days after Congressman Scrugham (the ex-governor of Nevada) asked for federal help in developing the monument.¹⁹⁶ Later, a full CCC camp was asked for the caves,¹⁹⁷ but these hopes were dashed when it was found that the Forest Service CCC's could not be moved to the Park Service Caves.¹⁹⁸ These peregrinations caused the public to be quite concerned over the future of

Service. (See section on Land Matters supra.)

By early December, 1933, the Park Service had pledged \$12,791 to develop the caves and had hired 56 CWA workers to do the job.¹⁹⁹ Although complete records are lacking, this crew did much cleanup, removed or salvaged some of the buildings acquired with the monument, repaired the water line, spent considerable time inside the caves cleaning and repairing stairs and trails, dug up many of the orchard trees and built stone walls in the parking area.²⁰⁰ The CWA project terminated on March 22, 1934 after completing nearly 3500 man hours of work at a cost of \$18,528.²⁰¹

During the summer of 1934 crews from the Transient Relief Camp on Lehman Creek further cleaned the surface area, purchasing from the Park Service some of the equipment left by the private operators of the caves.²⁰² That fall a CCC stub camp was set up at the monument and work was started on campgrounds and a parking area. The "boys" also constructed a culinary water line, put up some rock walls around the comfort stations and did a little work in the caves.²⁰⁴ What they did in the caves has been the subject of much conversation. They most often are given credit for the cement-free rock wall presently known as the "Panama Canal," which is said to have been built to bypass the "Fat Man's Misery," a long, low crawlway entering the Inscription Room.* Although there is a possibility of transposition of names, the Ely Record for September 15, 1922, tells that the "Panama Canal is in use to bypass the Fat Man's Misery." One evidence of the CCC days, though, the CCC Camp Inscription on the rear wall at Lake Como, is unmistakable. Another attempt was made to bring a CCC camp to the caves but this failed due to a general curtailment of the program.²⁰⁵ We can find no record of work being done here by the CCC after April, 1935.²⁰⁴

During the next two years correspondence flowed back and forth between the Park Service, relief agencies and local interests concerning work being done at the caves by one of the "alphabet" bureaus. During this period much criticism of the National Park Service appeared in local papers, but the monument's files reveal that the Service tried to improve facilities, but it was

*The first Park Service Custodian of the Monument stated ¹⁹⁶⁴ that "In 1932 and 33 one did not have to crawl anyplace in the cave." (Interview by Keith A. Trexler, December 22, 1964.)

continually thwarted in its attempts by the almost fantastic bureaucratic entanglements of the New Deal. Nearly a ream of carbon copies still exists as mute testimony to the hectic period.²⁰⁶ Finally in January, 1937, a WPA project was approved for the caves.²⁰⁷ It included the construction of cabins, one lodge hall, one combination comfort station and shower, and grounds cleanup. This was to be accomplished for \$21,000.²⁰⁸ Appropriations totalling \$5000 were received in March and the water line and two of the cabins were deleted from the plans.²⁰⁹ To get work underway the county pledged \$150 for groceries.²¹⁰ Actual work began in June but was curtailed by mid July due to lack of specialized manpower.²¹¹ Meanwhile the comfort station had been eliminated from the project.²¹² The existing files are somewhat vague as to what the WPA actually did accomplish at the caves. That they were at work for some time is evident. The superintendent's report for January, 1940 reports that the WPA crew is "working satisfactorily." Six months later an NPS carpenter was completing the cabins.²¹³ That fall the Park Service took over responsibility for completion of the water system and laid plans for putting in sewer and electrical systems.²¹⁴ Apparently the NPS completed the "lodge" which was soon turned into the superintendent's residence,¹⁸⁴ the two duplex cabins and a single cabin.²¹⁵ In 1941 a contract was let to the Kelly Lumber Company of Ely to build a restroom and it was completed in November of that year.²¹⁶ About this time a reservoir had been started about 100 yards southwest of the caves entrance. It was to be blasted out of marble but funds ran out in May of 1941 and the job was never completed.²¹⁷

All during 1940 and 1941 there was correspondence regarding other WPA projects, but efforts failed due to an almost unimaginable tangle of government paperwork. One proposed project was at first rejected,²¹⁸ then approved,²¹⁹ but not enough men could be found to get the job under way.²²¹ In March, 1942 there were not only no men, there was also no money. It was suggested that the project be reopened after June 30.²²¹ With World War II in progress the project proposal was never submitted.

With the exception of minor rehabilitation of existing buildings, the erection of steel radio towers,²²² a steel flag pole,²²³ and a new generator housing,²²⁴ new construction on the monument was nonexistent until Mission 66.

The "Little" Problems

It is well known that government administrators have problems. Most are normally related to shortages of money and manpower. At Lehman Caves, especially in the early days, other, perhaps more practical, and certainly more chucklesome occurrences were the problems of the day. That these should be immortalized is perhaps dubious, but we (I) include them at this point for our

(my) pleasure if for no one else's.

Should the Superintendent of the Monument perpetuate the fa field acquired with the caves? If so, the grasshoppers can be controlled. "The insecticide I received is very effective. I also catch many flies with the flycatcher I made."²²⁵

Of the buildings it was said: "All of the roofs leak", and one ranger watched his living quarters subside into an apparently active fault.²²⁶ These same quarters were described as hardly fit for human habitation.²²⁷

If one liked cows, the living must not have been too bad. "We have been bothered no end for weeks by great herds of cattle roaming all over the place. For some reason, best known to cows, they choose to do their grazing and cacophony right in our front yard in preference to much better pasture just adjoining."²²⁸ The need for a fence to keep out trespassing cattle and horses had long been expressed by monument rangers²²⁹ and irate campers.²³⁰ Some relief was given through a cooperative U.S. Forest Service-National Park Service fencing project in 1957,²³¹ but cows still wander into the monument on occasion.

Domestic "pets" were not the only animals to cause concern.

"On the 5th some skunks moved into the bunkhouse occupied by the WPA crew, much to the discomfort of the crew. After a preliminary barrage, the new occupants settled down and behaved themselves so that they are no longer objectionable. They are very inquisitive, and one of the cooks reported that there were one or two constantly watching him at his work. Since the first immigration there seems to have been a stampede, for now there seem (sic) to be skunk occupants for every habitable building on the Monument."²³⁵

These animals were trapped and one kept as a pet.²³⁶

Along with the caves and a few other desirable features, a wealth of junk was inherited by the National Park Service in 1933. For a sampling we refer to a 1935 inspection trip report:

"We found the grounds well littered with rubbish, cans, etc. Two cougar hunters hunting cougars in the forest were camped with Mr. Taylor, caretaker. They had three hounds around the house. A horse had been killed and butchered for the dogs. The meat was scattered around the yard a few feet from the caretaker's door. . . The woodpile was scattered over about a half acre of land. Lumber was scattered promiscuously over the ground along the approach road. . . a lot of iron pipe and pipe fittings. . . the water line was clogged. . . few of the carbide lights were working and those that would were not safe as they were jammed and worn so that they might fall apart any time. . . (No water)

for campers or fire protection. . . (A faucet had been left on and the water) had flowed down the pipe and cut a hole in the ground at least 10 feet deep and I don't know how much deeper as we could not see bottom. Mr. Taylor said that the water must have gone into a cave or somewhere as none ever came to the surface and the hole kept getting larger as long as the water ran. I told him to fill the hole. . . "232

Perhaps we are fortunate that the report does not elucidate on what else the inspector told Mr. Taylor. The inspector's description might have been better had he been able to find food and lodging somewhere nearby. From his report it is obvious that accommodations were not easily found.

That the caves remained for at least a year is certain. In 1936, "Some thirty loads of refuse were hauled away and six loads of trash including one load of horse bones." Also removed was a truckload of debris from each of the old caves.²³³ By 1942 the grounds were in "first class condition" and have remained that way. (Cleanup of the caves' interior is treated under the topic of "The Caves" below.)

As is true today, all but a few of the visitors to the caves were well behaved in 1936. "The recent visitors to the caves have shown unusual thoughtfulness and understanding concerning defacing or marking up the interior, and no such offenses have been noted."²³⁷ All good things come to an end, it seems, and two years later five arrests were made for defacing natural features in the caves.²³⁸ The culprits turned out to be CCC boys but we do not learn of their punishment.²³⁹ The next group to damage the caves was apprehended smoking marks on one of the cave formations. "They were called back to clean up the mess and "no charge was made for their visit!"²⁴⁰

Communications between the monument and the outside world were always difficult. The old farmer-owned telephone line became inoperable during every rain or snow storm, and when it did work every ring brought each of the 30 subscribers to their phones. After one had counted the thirty clicks of lifted receivers there was no power left on the line to get the message through. Shouting did help, at least on occasion, and the author can remember the obvious problem of getting used to not shouting when the new Bell System phones were installed in 1965.

For a time, radio communications with Park Service Headquarters at Lake Mead were attempted.²⁴¹ During most of the period one-way communications via radio were possible, but it was seldom that the Monument's set performed as it should.²⁴² An example of the confusion caused by poor radio and often by poorer mail

service,²⁴³ is found in a note preserved in the monument files.

Further reference is made to your memorandum of October 18 and the attached copy of your memorandum of October 9. The original of this copy has not been received here and the longhand note of the same date does not contain the information requested by our radio message. I believe if you will review your memorandum of October 18, realizing that the memorandum October 9 to which you refer was never received here, you will realize your apparent impatience with this office is without foundation. It is the sincere desire of this office to assist you in every way we can. There is no reason for us to burden you with unnecessary duplications but there is an ever present need for mutual understanding and cooperation.²⁴⁴

Other "problems" which should be noted include: Target practice, quite dangerous in campgrounds, was prohibited in 1936.²⁴⁵ For a time the local people were unhappy that their "drinking resort," as the one time private resort at the caves was known, was no more and rangers spent some time persuading imbibers that such was prohibited on monument lands.²⁴⁶ The change in administration of the area was unknown to many and hunters, Christmas tree cutters and wood choppers had to be advised to desist inside the boundaries.²⁴⁷ Another headache for the monument personnel was the "fish pond." Lehman's old irrigation reservoir had been stocked with thousands of fish and yet no fishing was allowed.²⁴⁸ One can imagine the problems that this created!

Just a few more personal tidbits:

"The fact that I am alone at the Monument makes it Utterly Impossible for me to be in the office at all times. . . (Someone had left a note) inquiring as to the whereabouts of EVERYONE?"²⁴⁹

"The month of August may go on record as a month of night duty due to the frequent arrival of late visitors, some as late as two or three in the morning. A large stone campground sign was erected to direct campers but most of our campers were from California and were afraid to pitch a tent without first awakening us to find out if it was really alright!"²⁵⁰

"The acting custodian is now well experienced in the art of snow shoveling, having spent the greater part of the month at that job."²⁵¹

"(From the coordinating superintendent) I understand that one of your temporary employees has an electric refrigerator in use. This is a convenience you cannot afford."²⁵²

(In October of 1952 gas refrigerators were allowed.) "We are enjoying just looking at them knowing that at last we

are going to have food refrigeration."²⁵³

(And to add injustice to misfortune, the acting custodian, who had been married in November reported the next month that) "The 'mumps' have been unwelcome guests at the monument since December and acting custodian Weir has been entertaining them until the present."²⁵⁴ (Painful, too, will bet!)

Roads

At Lehman Caves visitation, and therefore the entire operation, is dependent on the condition of the roads leading to the monument. In 1933, when there were no paved roads within 40 miles of the caves, visitation was 612 persons.¹⁶⁷ By 1959, when all approaches to the monument had been paved, visitation was up to 20,651.²⁵⁵ No doubt the increase would have been nearly as great without paved roads.

Originally the monument was connected to state and federal highways by two county-maintained roads. One of these branched off from what is now Nevada 73 just below Baker, forded Lehman Creek about five miles from the caves and led to the caves entrance via the present residence-maintenance area. The other commenced just above Baker, came through the present Home Farm of the School of the Natural Order, paralleled Lehman Creek for a distance and crossed it just west of the northeast corner of the monument. Inside the monument there was about 800 feet of low standard, natural gravel-surfaced road and a small parking area.²⁵⁶

In his first report to the Park Service, the monument custodian noted the need for road signs directing people from the highways to the caves.²⁵⁷ That summer (1934) rains settled the dust on the approach roads, but "the rocks in the road hamper travel considerably" and the tourists were "having difficulty finding the caves due to lack of signs."²⁵⁸ Cloudbursts wiped out sections of the Milford road and "washed gutters across the road and left ridges of gravel" along 20 miles of U.S. 6 between Ely and the caves.²⁵⁹

The next year "considerable attention" was given the approach roads by county and CCC crews. The roads were dragged, several days were spent blasting out large and protruding rocks from the roadway, culverts were installed and a bridge built over Baker Creek.²⁶⁰ In December the coordinating superintendent recognized the dependency of the monument on good roads and urged that a new road be built from Baker to the caves. He predicted increased travel to the monument with the completion of the new state and federal highways.²⁶¹

For the next twelve years local roads were to remain in horrible condition. A few quotes will suffice:

"(In 1936) the present road is none too inviting to the modern tourist, used to paved roads and wide road beds.²⁶² Recurrent cloudbursts have necessitated constant repairs on all highways leading to the monument, but they do not actually constitute improvements, as the roads are in worse condition than they have been in years. At the present writing all roads leading to Baker and vicinity are practically impassable. . . the northeast approach road to the monument is impassable, and the sign directing tourists to that road has been moved. In spite of this precaution, one car from Ely attempted the road and was somewhat damaged when it struck a washout at a good speed.²⁶³ A great many people had turned back at that point (about 30 miles from the caves) after inquiring the condition of the remainder of the road to the caves and finding that it was the same as the 15 miles they had just traversed. . . and but for this condition I am firmly convinced that travel at the monument would have been very much greater during the year just completed."²⁶⁴

Often, too during this period, the roads were closed by snow.²⁶⁵

Much of the problem with the approach roads may have been due to an uncertainty as to who was responsible for their upkeep. At first, both roads were maintained by the county,²⁶² then by the state,²⁶⁶ then by both county and state,²⁶⁷ and lastly by the Forest Service.²⁶⁸ In 1940 a WPA crew was at work on the "state" road.²⁶⁹

In September 1946 the monument custodian suggested posting the roads "travel at your own risk."²⁷⁰ A year later he was able to report the completion of a new paved state highway from Baker to the caves (replacing the original two routes).²⁷¹ This road, Nevada 74, has remained open and in good condition since that time. During the construction of Nevada 74 its continuation inside the monument was worked on by the state's contractor.²⁷² Another of those work-stopping paperwork entanglements occurred and it was not until September, 1948 that the inside-the-monument section was completed.²⁷³ This was to be the last reportable roadwork on the monument until Mission 66 (vide.)*

Meanwhile, national and local highways nearby were being improved. U.S. 6 from Baker to Ely had been paved in 1947.²⁷² The superintendent's 1952 annual report noted that visitation increased

*Access through the monument to Forest Service campgrounds on Baker and Lehman Creeks was discontinued in 1952 and 1959, respectively, according to D.E. Cox, Ely District Ranger, U.S.F.S.

225% for the year, largely because of the completion of the paving of roads nearby. U.S. 6 had been paved that year from Baker to Delta, Utah, connecting the caves with Salt Lake and the east.²⁷⁴ In 1955 the southern approach to the caves, via Milford, Utah was paved, thus completing the highway system converging on the monument.²⁵⁵

Concession Operations

Soon after the National Park Service was given charge of the caves the first application for a concession operation in the monument was received. In January 15, 1934, Baker resident Ralph E. Kaufman asked to be allowed to put in an "auto service" at the caves.²⁷⁵ His request was dealt with the explanation that the NPS must first study the visitation pattern to see what conveniences were necessary there.²⁷⁶

Although only two operators of the caves had furnished bed and board for visitors, it was determined by the Park Service in 1935 that the "demand for lunch services and shelter accommodations is so small that it is not considered essential to establish regular services of this sort. Mrs. Nielson, wife of the owner in charge, is permitted to furnish such services as there is demand for." This quote is from a letter refusing an application for a "lunch room and camp ground."²⁷⁷

Soon, however, visitor demand for food and lodging (none was available at this time in Baker)²³² coupled with accusations by the local press that the National Park Service was neglecting Lehman Caves, caused the Service to plan a "lunch room" and overnight cabins.²⁷⁸ The former was to have 24 seats, bath and bedroom for the operator and a curio and grocery department.²⁷⁹ Although the building was completed, it was never used for its intended purpose. Because of the lack of proper heating it was converted to a staff residence in the fall of 1941.²⁸⁰ Three of the overnight cabins also were constructed but were not used for their intended purpose either, and apparently were left vacant during World War II.

One "concession" did get off the ground in the prewar years. Operating under a special use permit, local residents were allowed to cut ice from the Lehman Pond near headquarters. Twenty five tons were cut in 1937 and similar amounts in the years through 1940.²⁸¹

Early in 1947 the monument custodian suggested that a small scale food and lodging concession was needed.²⁸² The coordinating superintendent at Lake Mead acknowledged the need, but

felt it might be best met by developments outside the monument. He advised talking this over with local Forest Service officials.²⁸³ At this time there was pressure from civic groups in Ely to have some sort of concession started at the caves. In response to this the custodian made specific recommendations for limited meal service, souvenirs and one overnight cabin. He felt that there was too little business to interest anyone in providing such services outside the monument.²⁸⁴ Apparently it was quite difficult to find anyone who was willing to set up the concession either outside or inside the monument and in November the custodian suggested that his wife could do the job.²⁸⁵ This recommendation was made a formal proposal by the coordinating superintendent, rejected by Nelson III, and approved in December by Washington.²⁸⁶

Using a portion of the old log lodge as a restaurant and gift shop, Mrs. Marcelle Mainwright opened the Wheeler Lodge in May of 1948.²⁸⁷ Her services included breakfast, sandwich and dessert service, soft drinks, postcards and gifts. In addition she was to provide overnight accommodations at \$2.50 per couple per night in the previously constructed guest cabins.²⁸⁸ (One of these soon was converted to employee housing.) It was not a big operation that first year; the net profit was \$227.²⁸⁹ Mrs. Mainwright continued operations until September 1951 when her husband retired from the National Park Service.²⁹⁰

It was not easy to find a new operator and the complaints of visitors who expected meals and lodging began to pile up.²⁹¹ Again the superintendent's wife was chosen to operate the concession.²⁹² Mrs. Olive Brown was given a two year contract in February 1952. She at first had to prepare the food in her home kitchen since the old lodge could not pass sanitary inspections.²⁹³ To make matters more difficult, there was no refrigerator and all drinking water had to be boiled before use.²⁹⁴

Needless to say, Mrs. Brown was unable to meet summer visitor demands for meal service and numerous visitor complaints were lodged.²⁹⁵ During the following winter she requested improvements be made in the concession's physical plant,²⁹⁶ noting that she operated at a loss of \$1,639 for 1952.²⁹⁷ Reading between the lines of letters that went back and forth between Mrs. Brown and Service officials, it is apparent that the Service did not approve of her operation. There are hints of dishonesty and exaggerations in her reports and requests for improvements.²⁹⁸ In any event, after recommending again that a concession be set up off-monument, the coordinating superintendent asked that Mrs. Brown's permit be rescinded.²⁹⁹ This was done as of December 31, 1953, on the basis that the concession facilities were too run down to justify rehabilitation, and in the belief that private enterprise in Baker would provide for most of the needs of

tourists visiting the caves.³⁰⁰

Lack of concession services in 1953 and in the spring and early summer of 1954 resulted in a barrage of visitor complaints and local newspaper editorials adverse to the National Park Service. "Restaurants" (saloons) in Baker were not willing (or able?) to serve food and many tourists left the monument without seeing the caves because there was no place nearby to eat or stay.³⁰¹ Although concession services were authorized in 1954 (July)³⁰² it was not until April of 1955 that eating facilities were re-opened.³⁰³ Two months later approval was given to provide overnight accommodations and one cabin was available for rent in another month.³⁰⁴ The new concessioner, Mrs. Blanche Yersin, gave up her contract at the end of August, 1956.³⁰⁵

The next, and present, permittee, Mrs. Thelma Gregory (now Bullock) opened the 1957 season in the newly reconditioned log lodge. Three meals a day were available; also two overnight cabins.³⁰⁶ This operation was to continue until 1963 when Mission 66 construction replaced the old facilities.

During Mission 66 planning much debate ensued regarding the necessity of a concession at the caves. At first the Director of the National Park Service did not approve any concession facilities in the new construction.³⁰⁷ Later amendments to the plan allowed inclusion of a coffee-gift shop installation and the providing of limited snack service.³⁰⁸ No overnight facilities were allowed since so few visitors had used the old cabins.³⁰⁹

The Cave

Upon cession to the Park Service the caves were in need of clean-up to meet the Service's aesthetic and safety standards. The first two inspectors of the monument facilities agreed that 1,500 feet of trail and existing wooden stairways would require considerable work to make them usable. Each recommended that more headroom be provided so visitors could walk upright throughout the tour; the wooden stairways be replaced, or at least, that the treads be made an even distance apart, and that the debris on the floors and the scudges on the walls be cleaned up. Surprisingly, both advised against replacing the steep natural entrance stairway with a low level access tunnel as previously recommended by the Forest Service.^{166,167}

Architect Harlan Stephanson, the first Park Service official to view the caves' interior, was concerned that the trail did not provide adequate protection to the cave formations. "The original trail was evidently built with too little thought toward protecting or saving the interesting formations. In many places the stalagmites and stalactites were unnecessarily broken away and merely pushed to one side of the trail." He added that "An

indirect and concealed electric lighting system would add materially to the attractiveness of the caves.¹⁶⁶

Although the need for development underground was great, caution, rather than speed, was emphasized. Stephanson, for example, noted, "Work within the cave would need careful supervision." An accurate survey of the caves, especially those portions called "unexplored", was called for, even though a "50 scale map of the underground" had been obtained from the Forest Service.¹⁶⁶ Clean-up of the caves, however, could be done without such advance planning, and it was begun immediately. During the spring of 1934 CWA crews spent considerable time inside the caves. They removed "loose stones, dirt, dead lumber and debris from the trails", leveled and widened old trails, built stone walls and replaced st. l. w. ²¹⁰ In one week in April, for example, they spent "100 hours repairing trails and washing walls" inside the cavern.³¹⁰ The latter problem has caused some concern to cave administrators up to the present. The question was how to clean without destroying. The first custodian had some success in the dry front portions of the caves but found the flowstone covered marks in the rear of the caves difficult if not impossible to remove without causing damage. It was thought that a "thick paint, resembling the natural formation, could be applied with a run and cover the marks easier than they could be removed otherwise." Experimenting on "the ceiling in the room in the cave that is so badly marked" was suggested.³¹¹ Apparently the experiment was never tried since the present "Inscription Room" is so named because its ceiling is "so badly marked." No good method has yet been found and it has been decided to leave most of the notes on the walls as historic exhibits.*

In the fall of 1934 a CCC contingent began four months of work in the caves interior, reconstructing foot trails and doing "stone work." One inspector did not approve of the latter and wrote, "The placing of small stones along the edges of the trail to define it across flat areas was considered to be unnecessary and unsightly, therefore these will all be removed."³¹² (It is interesting to note that this practice was revived in 1964.) In April 1935 the monument custodian reported that the CCC "boys did some splendid work here, including. . .the making of attractive trails and left the caves in good condition."²¹⁴ (See "CWA-CWA-CCC-WPA" supra for further comments on CCC work at cave.)

We wonder what he meant by "good condition" when we read a report written two months later by an inspecting officer from Zion National Park. "There is a great amount of debris left by CWA workers in the cave which should be gotten out. Every crevasse

*Dust from early trail surfacing materials has also covered much of the cave.¹⁶⁶

is filled with boards, cans, boxes and rocks."³¹³ In December "A portion of the lumber, belting and boxes left in the cave by former CCC boys was picked out, and though only a "skirting" was made, it has added considerably to the appearance."³¹⁴ In cleaning just the first room "several hundred feet of lumber. . .and four gunny sacks of tin cans" were removed.²³³ Unexpected help was forthcoming to continue the job, as reported by acting custodian Fred Fagergren.

"A desert wood rat is saving us the trouble of cleaning out what has been known as the Wishing Well in the caves. For years this little room has been the depository of people who believed if they left a trinket such as a match, hairpin, coin, etc. and made a wish it would come true. Naturally the room has taken on the appearance of a junk shop and its rather lousy condition is being brought about by this rat who is making rapid strides in moving the artifacts to a better location for the both of us."³¹⁵

A later report gave more details:

"Inasmuch as the rat reported last month cleaning out the Wishing Well had become tired or had secured the objects he wished, it was necessary to hasten the procedure by the use of a garbage can."

Fagergren goes on to list in detail the more than 700 objects taken from the small pool. Included were 231 bobby pins, the crystal of a watch, a piece of a lady's earter, 2 marbles, 10 wads of gum, 1 shoe horn, 1 can of mentholatum, 5 receipts for groceries and one small American flag! No wonder the rat gave up!

In May of 1936 a Park Service engineer made "a visit to the caves. . .to inspect an overhanging rock that was considered dangerous."³¹⁶ He recommended cribbing with steel beams and a work order for the job was written.³¹⁷ Another inspection of the apparently unsupported rock was made in July and it was noted that the custodian had "timber cut and piled at the cave entrance which he intends to use for cribbing. The job, however, seems like an engineering job and will probably require twenty men to get the timber and steel down to the place it will be used. I have some doubt of his getting the steel beams through the cave at their present length."³¹⁸ Evidently he did not get the material inside, at least at that time, as the monument's present maintenance foreman recalls shoring up in 1950 what was apparently the same overhang.

This latter-day project resulted from what, to our minds, was a case of mistaken identity. "Large block limestone fell from ceiling Johnson Caves Sunday night filling passage connecting last

room with unexplored portion of veins," read the telegram.³¹⁸ Details in the resulting correspondence³¹⁹ lead us to believe this was not the same rock under consideration in 1935, and a close inspection of the boulder in the location described shows that it has been in position a long time. The present visitor tour route goes under this rock, using a tunnel blasted there in 1942. Had this route been accessible (i.e. no boulder blocking it) prior to 1945, tours and explorers could easily have entered the present "Alus Room". That this area was considered unexplored as late as the mid-1950's is good evidence it was not easily enterable. Naturally an inspection was called for. Nevada Deputy State Inspector of Mines A.E. Bernard found the caves in general to be "in a very safe condition, but I would recommend that two light steel girders be placed to support the center of the roof in what you called the last room of the caves. . . I would also put a rock crib or wall to support the hanging (or roof) in the entrance of the next to the last room. The one last safety hazard I found in the caves in my opinion are the wooden stairways."³²⁰ In due course the crib was constructed (and is still there) but the other supports were never placed.

The Cave Entrance Tunnel

As far back as 1905, Forest Service and Nevada State officials had suggested a tunnel be driven into the mountainside to eliminate the somewhat hazardous natural entrance.¹¹⁵ Early reports indicate the old stairway leading down some 60 feet from the ground to the first cave room was a barrier to many who wished to see the caves. "The uphill route was surely too steep and the stairway too rickety and precipitous for the faint of heart. There was also the physical problem of considerable exertion, at nearly 7,000 feet above sea level, to climb out at the end of a strenuous tour."³²¹ Although some objections were voiced by a few Park Service officials who were concerned about lessening the visitor's cave experience and about destruction of the caves' natural beauty,^{166, 167} the tunnel was declared feasible in 1936.³¹⁵ Plans were laid in 1937 and surveys accompanied by geological drilling and an exploratory shaft were begun in August that year.³²¹

Obstacles to construction were considerable. There was much loose rock and muck below the natural entrance. Another inconvenience was added when Indian bones were found in the path of the tunnel. The care necessary to avoid disturbing the bone deposits so their value to science would not be lost slowed construction further.

Tunnel work began in earnest in May 1938 and the first section was "shot through" three months later. About 1/3 of this section was lined with concrete and drilling commenced on the inside tunnel. The latter was completed August 29, 1939 and the new entrance opened to the public on October 1, 1939.

\$9337.04 of Service roads and trails money.³²¹ The oft repeated story that CCC or WPA workers built the tunnel is untrue.

Because of the care exercised in drilling and blasting the feared destruction of cave features did not occur, although an increase in water flow in the first room of the caves was noted immediately after blasting was completed.³²² The new route added immeasurably to the comfort of those entering the caves and it has been used without change since 1939. The idea that another tunnel might be soon needed would undoubtedly not have occurred to monument personnel at that time. But in May of 1952 an Ely Chamber of Commerce Committee was to report that their study of development needs at the caves revealed that another exit tunnel was imperative. "With only one entrance to the caves, escorting of visitors through is greatly slowed down, necessitating long waits by visitors. . . who can ill afford to lose (sic) several hours in getting on their way. Moreover this slow process means that the guides put in unusually long hours."³²³

In April 1953 an inspection was made to determine the "feasibility of opening up a separate exit, to relieve the problem of peaking parties on the trails on days of heavy visitation."³²⁴ Further endorsement of the proposal was given by the Service's Chief Geologist, the Regional Naturalist, and the Monument Superintendent. Since there was little knowledge of the extent of the caves, a simple exit tunnel at the end of the tour route was suggested. This would have necessitated an outside trail of about $\frac{1}{2}$ mile to take visitors back to their cars.³²⁵ We are unable to find why this proposal was never acted upon, but feel it a good thing it was not, because since then a much better route has been developed which includes parts of the caves apparently forgotten in the early 1950's. (see below) Even so, a second access tunnel is needed and plans for its construction were initiated in 1964 and the project was included in the approved 1965 Monument Master Plan.

Lighting the Caves

Perhaps pine witch torches were the first lights to be used inside Lehman Caves. We do know that many early parties used charcoal to write their names upon the cavern walls. Candles, though, were standard lighting for many years. Can you imagine climbing and crawling, as the oldtimers had to, holding a flickering candle in one hand? Add to this the eerie shadows cast by the dancing yellow flame and we must admire the courage (or darn foolishness) of those who ventured into the stygian realms before electricity was added.

One step beyond the candle was the carbide, or miner's lantern

introduced to Lehman Caves by the Rhodes' in the early 1920's. Only electric lights, however, could show the caves' true beauty! Plans for bringing electricity to the caves had been advanced off and on from the 1920's³²⁷ but it was not until 1939 that Federal funds were made available for the work.³²⁸ Construction of the cave's electrical system began in October 1940 using day labor and Park Service electrical supervisors from Boulder Dam National Recreation Area.³²⁹ The first completely electrically lighted cave tours were taken in April, 1941.³³⁰

It was amazing! All who had seen the caves before were honestly surprised at what they had missed by feeble candle light. Some, of course, were disappointed. . . the cave had shrunk! No longer were there vast areas of darkness suggesting unknown realms beyond.

Perhaps some of the thrill and romance of early days was lost but this loss was far outweighed by the gain in visible beauty. Colors never seen before were revealed in all their infinite muted hues. A true perspective of size and depth was gained and those with feeble eyesight could now enjoy the caves' varied and almost unbelievable beauty.^{330, 331}

All was not roaches and crawls though, as the complicated system was difficult to maintain and the early generator engines none too reliable. Undoubtedly, some who read this will recall being plunged into the depths of darkness when plant or system failed.

The antiquated generators were on a stop-start schedule from the very first. Excessive fuel costs shut the plants down in December, 1941, but after that plant breakdowns were the major cause of flashlight illuminated cave tours.³³² New generators installed in 1949 seemed to clear up the problem and cave lights have burned brightly for all tours since that time.³³³ During 1962, two new generators were installed, assuring adequate cave lighting for years to come.

The Cave Trail

Some cave trail improvement was accomplished by early relief organizations, but it was not until the late 1940's that a program for underground trail and stairway reconstruction was begun. In his monthly report for June, 1946 the monument custodian states: "Extensive replacement work is indicated on stairs, handrails and platforms in the caves. Efforts are being made to secure funds for this work. For immediate safety we have installed several new handrails and steps."³³⁴ Although the trails were passable they were not safe for the average visitor. This concern with safety* led to further pleas for funds for rebuilding trails

*In the custodian's opinion the trail was so unsafe that he suggested a telephone or radio be installed in the caves so that the guides could more easily obtain help when accidents occurred in the

and stairways and after an inspection in November \$950 was allocated in December and work was begun.³³⁶ By January 1947 all the stairways had been replaced and much of the trail levelled and sanded.³³⁷ Evidently this work was not completed and a new project was initiated in 1950.

At this time the first blacktop paving was applied inside the caves. A strip extending from the tunnel portal into the caves' first room was in place by fall; the remainder of the tour route had been covered with sand and "loose crushed rock."³³⁸ Steel and concrete stairways had been recommended but chemically treated timber was finally selected as being safer and easier to install and maintain.³³⁹ Other improvements included adding electric lights, raising the floor level in the Gothic Room, providing more headroom clearance at spots along the trail, and a diversion ditch around the natural hole on the surface.³⁴⁰

The latter was necessary because of increased rockfall through the hole and onto the trail during rainy spells. At one time an estimated 15 tons of rock and mud from this source covered the entrance trail.³⁴⁰ This project was reported complete in February 1951,³⁴¹ but similar work was being done in October that year.³⁴²

The next winter was an especially wet one and cave trails needed extensive repair and considerable drainage. A further safety hazard was created when water reached the cave lights and frequently caused them to explode.³⁴³ By fall it was decided that the wooden platforms in the Cypress Swamp had to be replaced and concrete ramps were built there that winter.³⁴⁴

Gravel and sand covered most of the trail, however, until 1955 when complete resurfacing of the route with asphalt blacktop began.³⁴⁵ This work, started in January 1955, was not complete until July 1958.³⁴⁶ That may seem a long time to pave less than one half mile of trail,--at least until the methodology is revealed. Each pound of the more than 20 tons of blacktop had to be carried into the caves by hand, a bucketful at a time! It is impossible to negotiate a wheelbarrow beyond the first room of the caves because of the narrow passageways. As the Superintendent put it, "We are extremely proud of the amount of resurfacing of cave trail. . . and of the quality of the product. Anyone who has not had experience carrying surfacing materials by the bucketful down 1500 feet of trail, up and down stairways, sideways through narrow passageways, cannot realize the extent of the accomplishment. . . Six trips a day in with materials is a big day's work but as many as ten trips per man has (sic) been made."³⁴⁷

Rediscovery of the big rooms at the rear of the caves (see below) occasioned the planning of an extension of the tour route, but an accurate map showing the relationships of the new rooms to the old trail was needed. A lay out lighting and trail system. Volunteers from the Bell Lake Grotto of the National Speleological Society, headed by Dale Green, started surveying the caves in March of 1956.³⁴⁸ Their work showed that a loop of about 900 feet could easily be added to the tour route and construction on this portion of the trail began in November 1960.³⁴⁹ The extension was finished in April of the next year.³⁵⁰ Except for minor cleanup work, the addition of a few lights, and normal maintenance resurfacing, little work has been done to the caves' trails since that time.*

Exploration

Early reports, as we have seen, contended that passageways in Lehman Caves exceed several miles and were perhaps even longer than those in Mammoth Cave, Kentucky. That this was untrue needed to be proved.

By the end of 1885, if we are to believe the charcoal writings on the cave walls, all of the easily accessible portions of the caves had been visited. The records have been found that indicate that, if any exploration occurred between then and 1933. We have no idea what amount of cave was shown on the now lost Forest Service map acquired by the NPS in 1933, nor do we know where the data for a 1940 map³⁵² of the underground came from. The latter drawing shows the present tour route in its entirety, including the Talus and West Rooms which had been "lost" during the early 1950's.

The first recorded attempt to explore the caves after its acquisition by the Park Service was by permanent custodian H. Donald Curry. He viewed "several small rooms probably never before visited. . .practically unharmed by man." during 1936.³⁵⁴ We do not know where these rooms are, as Curry's notes were lost when a pack was stolen from him a few years later.

In June 1937 it was reported that "Somewhere between two and three miles of tunnel have been gone through in Lehman Cave and all indications are that there is a great deal more to explore. I have been informed that there are two lakes of fair size in passages leading east out of the entrance room, but that the debris which has fallen in that room has blocked passageways. The caving in around the buildings certainly indicates that

*A steel and concrete slab with a plastic dome was placed over the natural entrance in 1959.³⁵¹

there are passages in the area referred to."³⁵⁴ Despite extensive exploration, the "area referred to " with "lakes of fair size" has never been found.

Although magazine and newspaper accounts continued to report exaggerated mileage figures for the total explored cave (also adding of course that there were many more miles of "unexplored" passageways) it was not until 1947 that a significant addition was made to the known cave. Park Service laborers Tom Sims and John Fielding, on October 20, "found and opened" a complex 200 foot area north of the natural entrance. To enter this area, now known as the Lost River section, Sims and Fielding had to break several small stalactites and then squeeze their way in.³⁵⁵

Five years later another section of the cave was discovered. Called the Gypsum Annex, this portion of the cave contains large areas of gypsum and several areas of quartz decorations. It was found by Ray deBausseure, October 8, 1952, when he removed a small boulder blocking the entrance.³⁵⁶ His exploration was part of a survey conducted by four members of the Western Speleological Institute who concluded that there was no more cave to be found. Careful exploration and mapping have shown this contention to be true.

Thus the myth of "miles of unexplored passageways" has been discredited. Or has it? Who knows what may lie behind the walls, the flowstone draperies or waterfalls? Perhaps geophysical research will someday reveal new areas that can be easily connected with the present tour route, but until that day comes we must answer "none" to the often asked question: "Ranger, how many miles of unexplored passageway are there in Lehman Caves?"

Research

Although research into Lehman Caves' geology, atmospherics and dimensions was reportedly accomplished by early promoters,⁹³ none of their reports have come down to us. Ironically, the first recorded research at the caves was a bird study made in 1934 by University of California scientists.³⁵⁷

Monument Custodian H. Donald Curry was the first to carry out extensive geological studies of the cave and its environs. His paper, "The Geology of Lehman Caves", was completed in 1936, and until 1960 was the only printed source of scientific data on the caves.³⁵⁸ Two other geological surveys of the caves have been made. George W. Moore spent a week studying the caves in 1960 and Kenneth C. Bullock reported on an inspection of the Talus Room in 1961.

Insects inside the cavern early received attention by custodian

T.O. Thatcher. He identified several forms and sent others to experts for examination.³⁵⁹ One of the latter was not identified until 1962 and it turned out to be a species of pseudoscorpion new to science.³⁶⁰

A skull uncovered during cleanup operations in 1937³⁶¹ was the first of several hundred Indian bones found buried in the floor of the room directly below the caves' natural entrance. Apparently cleanup work and cave tunnel construction continued without archaeological assistance until July of the following year when a conference was held at the caves to determine further action regarding the bones.³⁶² Scientific excavation of the remains began in August 1938³⁶³ but was terminated in less than three months due to lack of funds.³⁶⁴ The dig was not resumed until September 1963. This latter excavation was under the supervision of the Nevada State Museum.³⁶⁵ A brief resume of the findings of the two operations is found above under "Prehistory."

All during the 1930's, 40's and 50's comments on the presence or absence of water in various portions of the caves were reported in the superintendent's monthly reports. An outside weather station was established at the monument in September 1937³⁶⁶ but no correlative "weather" studies were begun underground until February 1958. This study, under the auspices of the National Speleological Society, provided little reliable data and was abandoned by 1960. In 1962 a comprehensive "Cave Atmosphere Study" was initiated and has continued, at least in part, to the present (1965).

Historical research apparently commenced with Curry in 1936. His notes were lost and with the exception of occasional history notes in monthly reports, little effort has been made to bring together the facts relating to the caves' discovery, exploration, and development until 1962. At that time a comprehensive review of old newspapers, monument correspondence files, cave inscriptions and superintendents' reports was begun. The present study is the culmination of this review.

Mapping of the caves' interior, a considerable task, was begun in March 1958, by members of the Salt Lake Grotto of the National Speleological Society.³⁶⁸ The resultant map, completed in 1960, shows over 8,000 feet of passageway and represents one of the largest detailed cave mapping projects yet completed. The National Park Service and each visitor to the caves owes the volunteer surveyor-speleologists of the Salt Lake Grotto a debt of gratitude for their diligence in completing this physically strenuous and mentally demanding feat. Their work has given us much of what we know about the caves and proved that the cave tour could be expanded.

ADMINISTRATION

The National Park Service technically assumed administrative control of Lehman Caves National Monument on June 10, 1933, the date of President Roosevelt's Executive Order 6166. However, it took time to make assignments and it was not until December 2, 1933 that the Park Service began active participation in affairs of the monument. A telegram of that date to F.L. [redacted], Superintendent of Zion National Park, advised that the "Director requests report by landscape representative on conditions at Lehman Caves, . . . and work which could be done under Civil Works."³⁶⁸ Two days later Zion was notified to prepare for handling the administration of Lehman Caves and on the 7th, \$1,648 was allotted for "other than labor."³⁶⁹

On April 27, 1934, Otto T.W. Nielson was appointed "Park Ranger in Charge" at the Caves. He was the first of 12 men to be responsible for the monument between 1933 and 1966. (See Appendix III for a complete listing of monument personnel.) Nielson reported to the Superintendent of Zion who was administratively responsible as Coordinating Superintendent for the monument. In mid-1937 it was recommended that administrative responsibility for Lehman Caves be transferred from Zion to Boulder Dam National Recreation Area. A year and a half later the transfer was made and at the same time Regional boundaries were redrawn, removing both areas from Region Four (San Francisco) to Region Three (Santa Fe).³⁷⁰

A coordinating superintendency was maintained with daily radio contact between Lehman Caves and Boulder Dam until May 1953 when Lehman Caves was given full field area status. This designation was brief, being rescinded in November 1954. On January 1, 1958 the field area status was reinstated and has continued to the present with only one change. Effective January 12, 1960, the monument was transferred from Region Three back to Region Four.³⁷¹

With but the few exceptions we are about to mention, the monument has been open to visitors seven days a week since the National Park Service was appointed its guardian. Full time operations became increasingly difficult in the years immediately after World War II because no additional manpower was available to handle the increasing crowds of tourists. To make things even more difficult, government employees were reduced from a seven day work week to a five day work week in 1945.³⁷² By 1948, rising

costs accompanied by rising appropriations put the monument on a five day week, closed Friday and Saturday.³⁷³ The monument was completely closed several weeks in 1948, 49, and 50, due partly to heavy snows and partly to lack of funds.³⁷⁴ This, as far as we can tell, was the last time the monument was closed to the public for any reason.

A brief furor arose when an apparent misinterpretation of confidential information reached the press. In February 1954, the Monument Superintendent was quite surprised to find in the local newspaper that it had been proposed by the Department of the Interior that the Caves be given to the State of Nevada for administration.³⁷⁵ As it turned out, Lehman was but one of several areas suggested for study as to their eventual disposition or development, and on April 12 the Secretary of the Interior assured all concerned that the Caves was not being considered for disposal.³⁷⁶

SPECIAL EVENTS

On September 5, 1948, the Ely Chamber of Commerce and Lines sponsored a celebration at the Caves marking the completion of the highway from Ely to the Caves. The event included an open house, free cave tours, a free barbecue, (600 pounds of beef were consumed) music by two orchestras, and remarks by several officials. Estimated attendance varied from "well over 2,000 persons" to somewhat less. Whatever the total, it was not entered into the official travel record. The occasion, however, was "declared by those present to be a very successful event."³⁷⁷

A year later a "Lehman Caves - Beaver County Day" was held on the monument. Co-sponsored by the Milford, Utah Lions Club and the Ely Chamber of Commerce, it was designed to acquaint the governor of Utah with the need for construction of Utah highways to meet the paved roads in eastern Nevada. Utah Governor J. Bracken Lee, Nevada Governor Vail Pittman, Union Pacific Railroad officials, travel bureau representatives and two bands participated in the event. As in the previous celebration, there were free cave tours and a total estimated attendance of 2,000. Local police and two rangers from Lake Head helped handle the more than 500 cars that brought the participants.³⁷⁸

The next special event at the caves did not draw large crowds but the results were viewed by more persons than either of the other two events mentioned above. MGM studio sent 28 men in a 48-foot van to the caves to film a one minute sequence for background in a Viceroy cigarette television ad. This occurred in June of 1959. A second movie sequence, portions of the "The Wizard of Oz", was shot in 1965.³⁷⁹

In July 1960, Conrad L. Wirth became the first Director of the National Park Service to visit Lehman Caves National Monument.³⁸⁰

Sir Edmund Hillary, of Mt. Everest fame, his wife and their children, toured the caves in July 1962. Their stop here was the only visit to a National Park Service area on their Forest Service sponsored tour.³⁸¹

A description of the Dedication of the Visitor Center will be found in the section dealing with Mission 66.

Interpretation

The entire operation at Lehman Caves evolves around the interpretation of the underground story. Secondary themes include the Great Basin and human history.

If personnel classifications are a reliable guide to Park programs, it appears that interpretation in the early days took a back seat to other duties. A 1935 form shows "60% custodial, 40% guide," for the monument's one permanent uniformed position.^{381a} This later was changed to just the opposite.³⁸² After 1937 seasonal guides were hired and the percentage of the "superintendent's" time devoted to interpretation dropped to 10%.³⁸³ In 1960 a full time interpreter was added to the staff³⁸⁴ and by 1965 there also were seven seasonal guides. The latter staffing included having one "seasonal" on each day of the year, with the full staffing from June through Labor Day.

The Caves Tour

Little has come down to us telling how the early tours were conducted. Apparently the first trips included very little true interpretation, being confined mainly to pointing out "curios" such as the "Fish", "Pussycat", "Devil's Bathtub", "Wedding Cake", and so forth, apparently ad nauseum.³⁸⁵ (There was no lack of material. More than 150 of the fanciful names are on record.)

The earliest surviving instructions to the guides were concerned with the mechanics of guiding, rather than interpretive techniques. For example, in 1934 the coordinating superintendent reported, "The trips through the cave are personally conducted by the ranger. I suggested to him that he conduct parties at any hour during the day that there might be demand for it, except during weekends."³⁸⁶ A year later it was advised that large groups should be divided into smaller parties "with responsible people with the parties to aid in the trip. . .so arranged that there would not be more than ten people between them." The latter, apparently, was designed more to prevent vandalism than to aid in interpretation.³⁸⁷ One feature of every cave tour then, as well as now, was a presentation of the "aims, policies and regulations of the National Park Service."³⁸⁸

H.D. Curry was the first at the caves to understand the true purpose of the guided tour. He pointed out the "geologic features and the method of formation of the caves" and gave "the more appropriate of the names formerly used to designate individual drinstone formations." Curry also made the first effort on record to locate factual history and Indian legends relating to the caves, and to make scientific geological observations in the caves. Unfortunately his notes were lost when he was assigned to Death Valley National Monument.³⁸⁹

By 1946 the superintendent was

"making every effort to make the best and most interesting presentation possible. . .to get away from any canned or stereotype routine. It seems we are confronted with two distinct requirements, i.e., the informal contact which is indicated with our smaller groups of interested people and the more or less disciplined regimen required with the weekend picnickers (sic) where the guide must remain in control as well as furnish information."³⁹⁰

His remarks adequately describe the situation in 1965.

The Lake Mendocino Naturalist visited the caves in 1951 and drew up a brief manual for the guides. It gave an outline of the geology and history of the caves and suggested where in the caves these and other stories might be presented.³⁹¹ Other "guides' guides" were prepared, but most followed the 1951 example.

Until 1957, tours went into the caves whenever enough (or too many) people were ready to go and at about any time of day or night.³⁹² In that year tours were scheduled to leave on the hour from 9 a.m. to 4 p.m., at least during summer months.³⁹³ Two years later the summer hours were changed to 8 a.m. to 5 p.m.³⁹⁴ In 1964 a definite time schedule for winter tours was established. Also in that year the tours scheduled daily during the summer were 12 on weekdays and 18 to 20 on Saturdays and Sundays.³⁹⁵

Cave tours formerly lasted $1\frac{1}{2}$ hours before 1941.^{395a} Installation of electric lighting allowed this to be reduced to one hour, which was the time allotted until 1961 when the earlier timing was necessary again because one-third more cave had been opened to the public.^{395b}

Experimentation with a "Spelunker Tour" was begun early in 1965 and the specialized tour was opened to the public that summer. Spelunkers were given a short lecture on personal safety, caving techniques, and conservation before entering a passageway above the Gothic Palace for three hours of crawling through squeeze-ways, descending pits and answering questions like, "John just fell and broke his leg. What do you do?" At year's end it was decided to continue offering the tour in 1966.^{395c}

Special visitors are always fun for the guides and a record of a couple of "specials" seems in order. After taking six honeymooners through the caves, one guide remarked, "Here's for more of the same. No visitor is easier to please than a honeymooner."³⁹⁶ Local Indians, often said to be afraid of the caves did visit on occasion and one of them asked the guide a rather difficult question; "Why white man enjoy it?"³⁹⁷ Then there was Sir Edmund

Hillary, climber of the world's highest mountain, who confided that he got claustrophobia!³⁹⁸

No matter how or when the tours were conducted, most people seemed extremely pleased with the caves. In 1934 visitors were "delighted and pleasantly surprised"³⁹⁹ and in 1941, 85% of the visitors rated Lehman Caves better than Carlsbad Caverns.⁴⁰⁰ Ansel Adams, the noted landscape photographer and conservationist, put it this way: "This cave is lovely and I like it because you can get a hold of it."⁴⁰¹ Such comments have continued through the years and the author can remember but one dissatisfied customer in the four years he served at the cave.

Other Interpretation - Publications

Titled simply "Lehman Caves", the first interpretive publication by a Park Service employee appeared in Zion Bryce Nature Notes, July-August, 1934. The author was the monument's Ranger in Charge, Otto T.W. Nielson. Free copies of this booklet were made available to monument visitors.⁴⁰²

The next written interpretation was by H.D. Curry in 1936. It was a semitechnical geological treatise combined with a brief, but inaccurate history of the caves. Mimeographed copies were made for public distribution and reprints issued as late as 1957.⁴⁰³

In 1947 the Superintendent lamented over a lack of an illustrated brochure on the caves. A year later the photos were taken and in 1949 the first informational leaflets were received at the monument. The folder has been but little revised in content since that time, although a sketch map of the caves was added in 1960.⁴⁰⁴

Next, Chief Naturalist Alan Mebane produced "Story in Stone" in 1961. This mimeographed paper replaced Curry's earlier effort and stayed in print through 1964 when the stock was depleted and a revision considered necessary. The latter was in progress at the time of this writing.⁴⁰⁵

One other publication relating to the monument was produced. In March 1954 the Mountain View Nature Trail self-guiding leaflet was issued. Between then and the end of 1961 some 18,494 persons used the trail and the leaflet. Mission 66 construction necessitated closing and rerouting the trail in 1962. A temporary edition of the trail leaflet was produced in 1963, but was out of print by 1965.⁴⁰⁶

In 1963 a manuscript was prepared and suggested for publication as a Natural History Handbook for Lehman Caves National Monument. Various complications ensued and the book was not published.

Other Interpretation - Museum and Exhibits

Within four years after the National Park Service acquired the monument, thought was given to establishing a museum and exhibit series at the caves. Cave specimens, collected by the Forest Service, were on hand and visitors were beginning to request such a service.⁴⁰⁷ In 1938 there were "minerals and fossils" on display and in 1941 the old lodge was fitted out as a contact station and wild flowers and cave materials were put on exhibit.⁴⁰⁸ The 1948 General Development Plan contained little on exhibits since there was talk of a new building to house them. Several exhibits were prepared and installed in the old building, however, including an NPS orientation map, a layman's herbarium and birdarium, a rock collection, pine nut display, geologic cross-section, a "Kiddie Korner", and the skeletal remains of the Indian found in the 1938 archaeological dig.⁴⁰⁹ In 1963 the new building was a reality with complete exhibit and museum facilities. (See Mission 66 for details.)

Other Interpretation - Miscellaneous Services

Campfire programs have been an on again, off again part of the monument's services. In 1936 the custodian aided the Sierra Club campfire while on a climb up Wheeler Peak.⁴¹⁰ Ranger Claude McKenzie offered evening slide talks and movies on the lawn in front of the caves' entrance during the summer of 1941.⁴¹¹ Twenty years later evening programs were resumed in the same location each Saturday during the summer. The following year, primarily because Mission 66 construction in progress had removed the lawn, the campfires were moved to the Forest Service Fire Circle on Lehman Creek. Forest Service employees joined in and became a permanent part of the program when, in 1963, campfires were again presented on the lawn near the entrance. In 1965 the schedule was extended to include programs on Thursday and Saturday evenings.⁴¹²

Lehman Caves Natural History Association was established and incorporated in early 1963. Total sales for the first year of operation was \$276; in 1965 sales totaled \$88.⁴¹³ The association aided in establishing the spelunker tour mentioned above by purchasing hard hat liners for resale to the cave crawlers. The 1966 goal for the association was to produce one interpretive publication for sale to the visiting public.⁴¹⁴

Off-monument and special group services have never been a major part of the monument program. In the 1930's occasional CCC groups visited the caves, as well as a few school and university classes.⁴¹⁵ In the 1940's movies were shown off the monument and some large groups were taken through the caves.⁴¹⁶ Nature

hikes, led by monument personnel, were given in the Lehman Creek area in 1948 and 1949.⁴¹⁷ A program of contacting schools in communities around the monument was started in 1965, with all of the grade schools in Ely being visited that year.⁴¹⁸

Guide Fees

At first the National Park Service made no charge for cave tours, but in 1936 fees were initiated. Adults were charged 50 cents per person, per tour, unless they were members of a group. If the latter condition applied the fee was 25 cents per person. Children were free.⁴¹⁹ In 1940 the tickets were changed to include tax but the total tariff remained the same.⁴²⁰ Children 12 to 16 years old were charged 8 cents each in 1949, and an unknown period thereafter.⁴²¹

A family fee, \$1.50 per family with two or more children aged 12 and over, was inaugurated in December 1963 to be replaced in April 1965 by a 75 cents per person fee for those aged 16 and over. The latter schedule lasted for 15 days when the 50 cent fee for all aged 16 and above with children under 16 free, was instituted. This continued through 1965.⁴²²

MISSION-66

During the 1950 to 1955 period visitation to the caves increased 56 %. A similar and in many cases more spectacular rise was occurring throughout the National Park System.

In most parks, as at Lehman Caves, physical facilities, staffing and programming were still geared to pre-WW II levels. In 1955 a long range action program designed to "assure the American people that their priceless heritage of national parks, monuments, and historic shrines would be developed in a manner in keeping with their greatness, yet fully protected for the enjoyment and inspiration of future generations" was inaugurated. This program was Mission 66.

At Lehman Caves the attack on obsolescence was three-pronged. A completely new physical plant was called for, staffing was to be increased, and an expanded interpretive program including the opening of additional sections of the caves, was to be set up. All of these goals were to be realized by 1966, the 50th Anniversary of the National Park Service.

The first need was to construct housing for personnel required to manage and operate the new physical plant and expanded program. Four residences were completed in 1962. The superintendent's old house and two of the small ex-concession cabins were moved to the new residence area. Meanwhile, a visitor center, power plant and utility building, several thousand feet of new road a 25 unit picnic area, and the utilities systems necessary for the expanded operation were constructed. Appendix V gives a breakdown of construction costs.

Staffing increased during Mission 66 from three permanents and two seasonals, to five permanents and eight seasonals. One third more cave was added to the visitor tour and much of the trail refurbished. Regularly scheduled evening campfire programs were begun and an entirely new kind of tour, the Spelunker Tour, was offered for the first time.

Climax of the Mission 66 program at the caves was the dedication of the new visitor center on June 8, 1963. The Ely Daily Times referred to "Our Lehman Caves affair", and truly it was an all community affair; a community encompassing people within 100

miles of the caves. Civic and industrial leaders from Ely, Caliente, and Pioche, Nevada and from Delta and Milford, Utah, as well as Park Service and Forest Service officials made up the planning committee. School bands from each of the towns provided music. Chairs for the event came from Delta. Service prepared a western style barbecue, and local squaredancers provided an evening hoedown for participants from as far away as Idaho and Southern California.

The event went off without a hitch even though there was rain before and after the ceremonies. Park Service Associate Director George B. Harzog, using a caver's carbide headlight, burned the ribbon at the visitor center door to officially open the new facilities to the public. More than 1500 persons participated in the event and 1,016 toured the caves. The day ended when 200 tired squaredancers left the new visitor center parking lot at 1:30 a.m. on June 9th.⁴²³

The Future

Even during the final stages of Mission 66 new plans were in the making. The future, hopefully, will see the construction of a new entrance-exit tunnel into the caves, advanced research into how the caves formed and developed and research into details of the living plants and animals in the caves. New programs and exhibits designed to tell the history and natural history of the Great Basin are being planned along with increased staffing to handle the predicted increased visitation of years to come.⁴²⁴

APPENDIX A

MISSION 66 CONSTRUCTION COSTS

<u>Facility</u>	<u>Cost</u>	<u>Contractor</u>
Visitor Center	\$120,625	Hogan & Tingey, Centerville, Utah
Exhibits	17,000	Western Museum Lab, NPS
Cave Lighting	7,200	NPS
Cave Trails	9,500	NPS
Utilities System	133,125	General Contracting, Salt Lake Hogan & Tingey
Roads & Parking Areas	67,145	General Contracting
Picnic Area	13,857	Beaver Const. Co., Beaver, Utah
Employee Housing	79,138	Beaver Const. Co.
Utility Building and Power Plant	31,200	Hogan & Tingey
Miscellaneous	<u>31,471</u>	
Total Mission 66	\$510,261	

APPENDIX B

ANNUAL VISITATION TO LEHMAN CAVES

<u>Date</u>	<u>Visitors</u>	<u>Date</u>	<u>Visitors</u>
1895-1922. . .	10,000 (1)	1950.	8,100
1922	.250 (2)	1951	7,855
1923	.1,100	1952	11,054
1924	3,000 (3)	1953	16,693
1925	.2,135	1954	18,369
1926	2,000 (4)	1955.	18,426
1927	2,000	1956	20,315
1928	1,447 (5)	1957	20,815
1929	1,552	1958	20,321
1930	.1,133	1959	22,196
1931	1,048	1960.	20,651
1932	500	1961	24,267
1933	612	1962	27,347
1934	1,968 (6)	1963	32,511
1935	.2,795	1964	34,767
1936	2,348	1965.	35,622
1937	3,529	1966	31,436
1938	3,458	1967	30,372
1939	3,958	1968	40,889
1940	.4,942	1969	34,743
1941	5,000	1970.	41,164
1942	1,948	1971	43,498
1943	1,015	1972	46,948
1944	840	1973	38,512
1945	.1,247	1974	34,647
1946	3,593	1975.	37,909
1947	4,635	1976	41,832
1948	6,008		
1949	8,580		
		Grand Total .	843,908

(1) Estimated. Based on newspaper stories, names and dates on cave walls.

(2) Ely Record, 25 July, 1924

(3) " " 13 March, 1925

(4) " " 12 August, 1927

(5) 1928-33 based on notes in official files

(6) 1934-76 based on official travel figures

APPENDIX C

PERSONNEL ROSTER

This list is as complete as monument records allow it to be. In many cases it is known by the author that persons listed worked at other times and in other positions, However, no attempt was made to add unofficial data.

<u>Year</u>	<u>Name</u>	<u>Position</u>
1934	Otto T.W. Nielson William Carlson	Park Ranger in Charge Rodman
1935	Otto T.W. Nielson Don Taylor	Park Ranger in Charge Temporary Caretaker
1936	E. Donald Curry Don Beck Clifford Bellander Fred Fagergren Lawrence Fielding Oscar Sims R.E. Earl Wesley Jordan	Custodian Temporary Caretaker Laborer and Rodman Custodian Laborer " " "
1937	Fred Fagergren T.O. Thatcher Otto T.W. Nielson Eugene Bellander Gifford T. Whitford Cecil Bondley Earl Richardson Clay Carson Raymond S. Hood	Custodian Custodian Guide WAE Laborer Truck Driver Laborer " Woodcutter Temporary Caretaker
1938	T.O. Thatcher Lester Tervort George McFadden Alfred E. Gaumer Sidney H. Wheeler	Custodian Guide WAE Foreman-Construction Laborer Foreman-Archaeology
1939	T.O. Thatcher Delbert F. Dinkins Raymond S. Hood Derald Robison Joe Gruen	Custodian Transitman Laborer " "

<u>Year</u>	<u>Name</u>	<u>Position</u>
1940	T.O. Thatcher	Custodian
	Glen Garner	Laborer
	Alfred W. Van Puskirk	"
	Thomas J. Kosfey	"
	Arthur Olson	"
	James A. Ince Gehring	"
	John Hesselgesser	"
	Edward E. Junker	"
	Fred E. Rodyson	"
1941	E.J. Neesha	"
	T.O. Thatcher	Custodian
	Glen E. McLenzie	Park Ranger
	Jack W. Gray	Temporary Ranger
	Earl Richardson	Caretaker
	Ieland G. Petersen	Laborer
	Philip Garner	"
	Kenneth Loner	"
	Robert Neil Collins	"
	Harry E. Hesselgesser	"
	Noise R. Hesselgesser	"
	John R. Hesselgesser	"
	Merrill E. Olson	"
	Forest Samuel Smith	"
	Edward E. Peckethorn	"
	Thomas E. Smith	"
	Grant C. Smith	"
	Alex Dautre	"
	W.L. Hansen	"
	Earl Lafarr	"
	George H. Campbell	"
	George W. Hobison, Jr.	"
	J. L. Ramsey	"
	Frank G. Rodyson	"
	A.L. Adkins	"
1942	Harold J. Weir	Custodian
	John Fielding	Guide
1943	Harold J. Weir	Custodian
	John Fielding	Guide
1944	Harold J. Weir	Custodian
	Max Mainright	Custodian
1945	Max Mainright	Custodian
	John Fielding	Guide and Laborer

<u>Year</u>	<u>Name</u>	<u>Position</u>
1946	Max Wainwright John Fielding	Custodian Guide and Laborer
1947	Max Wainwright John Fielding Oscar Sims	Custodian Guide and Laborer Ranger - Seasonal
1948	Max Wainwright John Fielding Oscar Sims	Custodian Guide and Laborer Ranger - Seasonal
1949	Max Wainwright John Fielding Oscar Sims P.C. Kaufman	Superintendent Guide and Laborer Ranger - Seasonal Guide
1950	Max Wainwright Charles Fundert Ralph Kaufman P.C. Kaufman Archie Goldson	Superintendent Ranger - Seasonal Foreman Guide Laborer
1951	Arthur L. Brown P.C. Kaufman Clyde R. Wilcox	Superintendent Guide Guide
1952	Arthur L. Brown P.C. Kaufman	Superintendent Guide
1953	Arthur L. Brown Walter Reed Smith P.C. Kaufman	Superintendent Seasonal Guide Maintenance Man
1954	Arthur L. Brown P.C. Kaufman	Superintendent Maintenance Man
1955	Arthur L. Brown Eldon Hurst P.C. Kaufman	Superintendent Seasonal Guide Maintenance Man
1956	Arthur L. Brown Eldon Hurst O. Raymond Sellers P.C. Kaufman	Superintendent Seasonal Guide Park Ranger Maintenance Man
1957	Theodore R. Thompson O. Raymond Sellers O. Berlin Terry	Superintendent Park Ranger Guide

<u>Year</u>	<u>Name</u>	<u>Position</u>
(1957)	Bryan S. Robison	Guide
	P.C. Kauffman	Maintenance Man
	Earl Boisclair	Maintenance Man
	Eldon Hurst	Seasonal Guide
	John Fielding	Seasonal Guide
	Wesley Jordan	Laborer
1958	Theodore H. Thompson	Superintendent
	Paul M. Steel	"
	William D. Massey	Park Ranger
	Frederich Leissler	Seasonal Guide
	P.C. Kaufman	Maintenance Man
1959	Paul M. Steel	Superintendent
	William D. Massey	Park Ranger
	Frederich Leissler	Seasonal Guide
	O. Raymond Sellers	" WAE
	Harvard H. Jensen	" WAE
	Edward E. Countreman	Park Guide WAE
	P.C. Kaufman	Maintenance Man
	Howard G. Baker	Laborer
	O. Merlin Terry	Guide WAE
	Bryan S. Robison	Guide WAE
1960	Paul M. Steel	Superintendent
	O. Raymond Sellers	Park Ranger
	Edward E. Countreman	Seasonal Guide
	O. Merlin Terry	Seasonal Guide
	Bryan S. Robison	Seasonal Guide
	Alan Mebane	Chief Park Naturalist
	Edward E. Countreman	Administrative Assistant
	Howard G. Baker	Laborer
	Raymond M. Dason	"
	William W. Sweichert	"
	James F. Steel	"
1961	Paul M. Steel	Superintendent
	Alan Mebane	Chief Park Naturalist
	Edward E. Countreman	Administrative Assistant
	P.C. Kaufman	Maintenance Man
	O. Merlin Terry	Seasonal Guide
	Charles W. Eitelgeorge	"
	Bryan S. Robison	"
	William D. Tidwell	Park Ranger
	F.L. Huntsman	Project Inspector
	Howard G. Baker	Laborer
	Julius Gronson	"
	Thomas E. Sims	"

<u>Year</u>	<u>Name</u>	<u>Position</u>
1962	Paul M. Steel	Superintendent
	Edward E. Countreman	Administrative Assistant
	Keith A. Trexler	Chief Park Naturalist
	O. Merlin Terry	Seasonal Guide
	Var L. Peacock	"
	Donald R. Firk	"
	Bryan S. Robison	"
	Frank D. Atkinson	Park Ranger
	Janice E. Kirk	Clerk-typist
	F. L. Huntsman	Project Inspector
	Howard G. Fisher	Laborer
	Clyde L. Heath	"
	L.C. Kaufman	Maintenance Man
1963	Paul M. Steel	Superintendent
	James F. Beck	Administrative Assistant
	Keith A. Trexler	Chief Park Naturalist
	Parker L. Dason	Park Guide
	O. Merlin Terry	"
	V. Lynn Peacock	"
	Clyde L. Heath	"
	Robert R. Jacobsen	Superintendent
	Thomas E. Sims	Maintenance Man
	Roy L. Bowley	Laborer
	Dorothy C. Dason	Clerk-typist
1964	Robert R. Jacobsen	Superintendent
	James F. Beck	Administrative Assistant
	Keith A. Trexler	Chief Park Naturalist
	Parker Dason	Park Guide - Seasonal
	Jeannette S. Griggs*	"
	Lynn Peacock	"
	Rondal R. Bridgeman	"
	Charles D. Hunter	"
	Jay P. Wahrenburg	"
	Alan C. Skinner	Park Guide
	Carman Bullock	Laborer
	John W. Patrick	"
	Gerald L. Upfree	"
	Roy Bowley	"
	P.C. Kaufman	Maintenance Man
	Thomas E. Sims	"
1965	Robert R. Jacobsen	Superintendent

*First National Park Service female guide employed at Lehman Caves.

<u>Year</u>	<u>Name</u>	<u>Position</u>
(1965)	Keith A. Trexler	Chief Park Naturalist
	James F. Beck	Administrative Officer
	Alan G. Skinner	Park Guide
	O. Merlin Terry	"
	P.C. Kaufman	Foreman II
	Carson Holbeck	Laborer
	Douglas Henningsen	"
	William T. Cunningham	Maintenance Man
	Jeanette S. Griggs	Park Guide
	Clyde Smith	Park Guide - Seasonal
	Charles D. Hunter	"
	Rondal P. Bridgemon	"
	Robert Gang	"
	Harry Varchever	"
	David H. Schmitt	Park Guide
Peter L. Parry	Superintendent	
1966	Peter Parry	Superintendent
	James Beck	Administrative Officer
	Keith Trexler	Chief Naturalist
	Prentis Kaufman	Maintenance Foreman
	William Cunningham	Maintenance Man
	O. Merlin Terry	Park Guide
	Rondal Bridgemon	Seasonal Park Guide
	Larry Clark	"
	Jeanette Griggs	"
	Robert Gang	"
	Robert Soules	"
	Daniel Smith	"
	Iris Cunningham	Clerk-typist
	Roy Graybill	Chief Naturalist
	Avis Franklin	Administrative Officer
1967	Peter Parry	Superintendent
	Avis Franklin	Administrative Officer
	Roy Graybill	Chief Naturalist
	Prentis Kaufman	Maintenance Foreman
	William Cunningham	Maintenance Man
	O. Merlin Terry	Park Guide
	David Baker	Seasonal Guide
	Rondal Bridgemon	"
	Larry Clark	"
	David Foster	"
	Jeanette Griggs	"
	Robert Gang	"
	Avis Cunningham	Clerk-typist

<u>Year</u>	<u>Name</u>	<u>Position</u>
1968	Peter Parry	Superintendent
	Avis Franklin	Administrative Officer
	Roy Graybill	Chief Naturalist
	O. Merlin Terry	Park Guide
	Freddie Kaufman	Maintenance Foreman
	William Cunningham	Maintenance Man
	Thomas Strong	Seasonal Guide
	Stanley Faber	"
	Allen Duskten	"
	Verl Tolbert	"
	Jeanne Sharp	"
	Geraldine Robison	"
	Joseph Griggs	"
	Barbara Cummings	"
	Lee Robinson	Superintendent
	Earland Richardson	Maintenance Man
1969	Lee Robinson	Superintendent
	Avis Franklin	Administrative Officer
	Orlynn Halladay	Chief of I & RM
	Pete Kaufman	Maintenance Foreman
	Earland Richardson	Maintenance Man
	O. Merlin Terry	Park Guide
	Verl Tolbert	Seasonal Guide
	Barbara Cummings	"
	Jeanne Sharp	"
	Robert Gold	"
	Lynn Peacock	"
	Sheba Starley	"
	Geraldine Robison	"
1970	Lee Robinson	Superintendent
	Avis Franklin	Administrative Officer
	Orlynn Halladay	Chief of I & RM
	Pete Kaufman	Maintenance Foreman
	Earland Richardson	Maintenance Man
	O. Merlin Terry	Park Guide
	Lynn Peacock	Seasonal Guide
	Harry Yarchover	"
	Jerry Wilcox	"
	Robert Gold	"
	Helen Colbert	"
	Geraldine Robison	"
1971	Lee Robinson	Superintendent
	Avis Franklin	Administrative Officer

<u>Year</u>	<u>Name</u>	<u>Position</u>
(1971)	Orlynn Halladay	Chief of I & RM
	Pete Kaufman	Maintenance Foreman
	Earland Richardson	Maintenance Man
	O. Verlin Terry	Supervisory Park Technician
	Harry Yarchover	Seasonal Guide
	Shirley Smith	"
	Geraldine Robison	"
	Jerry Wilcox	"
	Ronald Reynolds	"
	Blaine Hillias	"
	Robert Gold	"
	Walt Dearden	"
	Patricia Davies	"
	William Gentless	Maintenance Foreman
1972	Lee Robinson	Superintendent
	Avis Franklin	Administrative Officer
	Orlynn Halladay	Chief of I & RM
	William Gentless	Maintenance Foreman
	Earland Richardson	Maintenance Man
	O. Verlin Terry	Supervisory Park Technician
	Grace Wersderfer	Janitor
	Ronald Reynolds	Seasonal Guide
	Lynn Peacock	"
	Kenneth Kelly	"
	Robert Jones	"
	Karen Johnson	"
	Patricia Davies	"
	Robbie Morrison	"
	Howard Baker	Seasonal Maintenance
	John Schippleck	Chief of I & RM
1973	Lee Robinson	Superintendent
	Avis Franklin	Administrative Officer
	John Schippleck	Chief of I & RM
	William Gentless	Maintenance Foreman
	Earland Richardson	Maintenance Man
	Grace Wersderfer	Janitor
	Patricia Davies	Park Technician
	Bobbie Morrison	Park Technician
	Ronald Reynolds	Seasonal Guide
	Christine Reynolds	"
	Lynn Peacock	"
	Kenneth Kelly	"
	Robert Jones	"
	Donald Kellogg	Janitor
	Ronald Huntington	Seasonal Maintenance

<u>Year</u>	<u>Name</u>	<u>Position</u>
1974	Leo Robinson	Superintendent
	Avis Franklin	Administrative Officer
	John Schimpfleck	Chief of I & RM
	William Gentless	Maintenance Foreman
	Earland Richardson	Maintenance Man
	Donald Kellogg	Laborer
	Patricia Davies	Supervisory Park Technician
	Robbie Morrison	Park Technician
	Lynn Hancock	Seasonal Guide
	Kenneth Kelly	"
	Robert Jones	"
	Douglas Selby	"
	Ralph Peterson	"
	Allen Hill	Seasonal Maintenance
	John Sheppard	"
	William Poundtree	"
	David Moore	Superintendent
1975	David Moore	Superintendent
	Avis Franklin	Administrative Officer
	John Schimpfleck	Chief of I & RM
	William Gentless	Maintenance Foreman
	Earland Richardson	Maintenance Man
	Donald Kellogg	Laborer
	Patricia Davies	Supervisory Park Technician
	Robbie Morrison	Park Technician
	Robert Jones	Seasonal Park Technician
	Douglas Selby	"
	Ralph Peterson	"
	Russell Andris	"
	Eric Finkelstein	"
	Allen Hill	Seasonal Maintenance
	John Sheppard	"
	Edward Converse	"
	R. Kent Peckham	Park Technician

<u>Year</u>	<u>Name</u>	<u>Position</u>
1976	David Moore	Superintendent
	Avis Franklin	Administrative Officer (to 6/5/76
	David Bagozzi	Administrative Technician (7/4/76
	John Schippleck	Chief of I & RM
	William Gentless	Maintenance Foreman
	Earland Richardson	Maintenance Man
	Patricia Davies	Park Technician
	Kent Mecham	Park Technician
	Russell Andris	Seasonal Park Technician
	Paul Huls	" " "
	Robert Price	" " "
	Shirley Richardson	" " "
	Rebecca Ruiz	" " "
	Maria Varela	" " "
	Allen Hill	" Maintenance Man
	Samuel Faber	" " "
	James Conrad	" " "
	1977	David Moore
David Bagozzi		Administrative Technician
John Schippleck		Chief of I & RM
William Gentless		Maintenance Foreman
Earland Richardson		Maintenance Man
Nellie Sears		Laborer
Kent Mecham		Park Technician
William Wagers		Park Technician (from 10/9/77)
Shirley Richardson		Seasonal Park Technician
Jody Hewston		" " "
Paul Huls		" " "
Larry Prussin		" " "
Silvia Reza		" " "
Emmanuel Rivera		" " "
Donnata Schultz		" " "
Teresa Walker		" " "
Donald Kellogg		Laborer

<u>Year</u>	<u>Name</u>	<u>Position</u>
1978	David Moore	Superintendent
	David Bagozzi	Administrative Technician
	John Schippleck	Chief of I & RM (until 4/4/78)
	Edward E. Wood	Chief of I & RM (from 7/8/78)
	William Gentless	Maintenance Foreman
	Earland Richardson	Maintenance Man (until 8/1/78)
	Larry Atchley	Maintenance Man (from 10/15/78)
	William Wagers	Park Technician
	Donald Kellogg	Laborer
	Jody Hewston	Seasonal Park Technician
	Maurice Ross	" " "
	Jeff Babcock	" " "
	Craig Rademacher	" " "
	Therese Hackenberg	" " "
	Lloyd Bletsch	" " "
	Christina Miller	" " "
	Fred Bunch	" Laborer
	Nancy Scholl	" Park Technician (Winter)
	Karen Bizak	" " " "

APPENDIX D

BRIEF CHRONOLOGY - I

500 million B.C.		Rocks in which cave is formed begin to be deposited.
1 - 5 "	"	Cave passages start to develop.
1 - 2 "	"	Cave decorations begin to grow.
1,200 A. D.?		Indians bury bones of their dead in cave.
1869		Ab Lebrun comes to cave area.
1885		Cave rediscovered by Ab Lebrun and first tourists see the cave.
1891		Ab Lebrun dies.
1922		Cave is made a National Monument under the U.S. Forest Service.
1920's		Much development inside and outside the cave.
1933		The National Park Service is given charge of Monument.
1939		A new cave entrance is completed.
1941		The cave is electrically lighted.
1949		A cafe and gift shop is opened.
1956		Mission 66 developments begin. Cave trails paved.
1961		Cave tour is increased by one-third.
1963		Lebrun Caves Natural History Association. Mission 66 improvements completed and Visitor Center is dedicated.

APPENDIX E

BRIEF CHRONOLOGY - II

GEOLOGY OF THE LEHMAN CAVES AREA

1. 500 to 150 million years ago -
Almost uninterrupted sequence of sedimentation.
Fole Canyon Limestone formed at bottom of large inland sea during first part of this period.
2. 150 to 75 million years ago -
Area above water. Rather inactive period except for some deep faulting and minor folding.
Some metamorphism of lower sediments (including Fole Canyon Limestone).
3. 75 million years ago -
Granite intrusion. Contact and regional metamorphism.
4. 50 million years ago -
High angle faults and lateral pressures begin tilting and raising range.
5. 1 to 5 million years ago -
Climate much wetter. Cave formed under water table in Fole Canyon Limestone, locally metamorphosed into marble.
Main passages formed along north-south bedding planes.
6. Last 1 million years - Ice Ages -
5 periods of glaciation, the most recent about 10,000 years ago.
Cave decorated during this period.

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This section of the History of Lehman Caves has been added to update the text. This is the summary report of the Desert Research Institute's study of the cave. The study was conducted from June 1967 to December 1968. There are seven sections to the report studying the cave's ecology and aerology. It is recommended that you read the full report in order to better interpret the cave. Where there are brackets, (), it indicates that the enclosed material was added from observations of the cave during the summer of 1975.

**FINAL REPORT ON THE AEROLOGY
AND ECOLOGY OF LEHMAN CAVES
DECEMBER 1968**

The National Park Service provided the Laboratory of Desert Biology of the Desert Research Institute, University of Nevada system, with funds to make a study of Lehman Caves. It was to assess possible changes in airflow and ecology which might be expected when a new entrance is made into the cave, and to investigate measures to counteract such possible changes.

Many visits were made to Lehman Caves by members of the staff of the Laboratory of Desert Biology on the following dates:

- Period 1. . . June 29-30, 1967
- Period 2. . . June 27- July 4, 1968
- Period 3. . . September 22-28, 1968
- Period 4. . . October 3-6, 1968
- Period 5. . . October 22-27, 1968
- Period 6. . . November 27- December 8, 1968

In addition to Drs. Benberry, Sheas, Stark, Went, J. Wheeler and G. Wheeler, and G. Halsten, the group was occasionally joined by Dr. J. Hallett and by A. McLain. In addition, Dr. Donald Prusso and Dr. Ray Evans of the Biology Department of the University of Nevada have made cultures of microorganisms from material collected in the cave.

The following is a set of reports, part of which they hoped to publish in Scientific Journals, which were presented as a joint recommendation based on their findings to date.

GENERAL RECOMMENDATIONS BY ALL INVESTGATORS

"The various studies discussed in the individual sections of this report lead to a few general conclusions and recommendations.

- 1) The studies on animals, plants, and microorganisms of Lehman Caves have confirmed the general impression that especially animal life is very limited and does not show many of the curious cave dwellers found in other caves. This is largely due to the fact that nothing is left of the stream which originally must have started the cave, and also that there are so few bats in it. With the restricted rodent population at present limited exclusively to the immediate surroundings of the present entrance, little organic matter is produced in the cave, restricting the population of coprophiles and saprophytes; the decomposers. (You may see an occasional chipmunk or deermouse throughout most of the cave, usually around the lights.)

We recommend that for the sake of increasing to former levels the animal population of the cave, the original cave entrance be opened again, providing an entrance for rodents, bats, and insects. (You may see evidence that packrats had used the cave before man arrived. Their droppings and a former nest are near the Wedding Cake, located between the Gothic Palace and the Music Room. In the Civil Defense area there are also signs of packrats. This area is not seen by visitors. By the natural entrance there are signs of bats; you may see their droppings and an occasional bat in either entrance or exit tunnel. Insects found in the cave are flies, fleas, mites, cave crickets, spiders-- you may see spider webs inside the cave and in either tunnel-- and you may find pseudoscorpions. In the summer of 1975 a pseudoscorpion was seen on a stalagmite on the stardust stairway.) It should be possible to devise some protective structure at the natural entrance to prevent vandalism, but permit freedom of entry to natural cave inhabitants."

- 2) "The lights in the cave have created a new environment, explored and described by Drs. Stark and Sheps. (Their report appears in section B of the Desert Research Institute's final report.) Although this is not natural, very interesting new habitats have been created, and a continued study of the artificial light environment should be quite rewarding, discovering the succession in which new algae, mosses, liverworts, and ferns become established. (The algae and mosses are currently under study by Dr. Raymond I. Lynn, from Utah State University at Logan, Utah.) (From observations, the algae and moss grow at a rapid rate from spring to the middle of summer. This may be due to the water dripping off of the stalactites. But after mid-summer there is less water and the algae and mosses start to dry up. The lights, which with the water aid growth of the plants, also dry them up when the water becomes scarce.) In this connec-

tion it might be suggested that a number of incandescent lamps be replaced by fluorescent lamps if, at least, they operate satisfactorily in the cave. This would have several advantages:

- a) for the same amount of light produced they use much less power;
 - b) They can be selected to produce a better wavelength balance;
 - c) they have much longer life and need to be replaced less frequently."
- 3) "Part of the microorganisms will have to get their food from droppings of the cave inhabiting animals. With the abling rodents and insects to enter the cave more readily, other life in the cave (except algae and mosses around lights) will tend to disappear. For this reason alone we would recommend re-opening the natural entrance."
- 4) "Since at least the rodents which live in the cave have to forage outside, the vegetation in the immediate vicinity of the natural entrance should be disturbed as little as possible or improved, (not natural) to the extent that more chipmunks and deer mice could live off of it. As it is, the cave seems to have very few entrances suitable for rodent entry."
- 5) "In connection with the construction of a new cave entrance, (which was opened in 1970), we do not believe that this needs to influence the ecology of the cave provided a) both entry and exit have double doors, closing reasonably tight, with a vestibule between each pair so that it will be unnecessary to have both doors open at the same time while admitting or discharging visitors. (Both entrance and exit tunnels have double doors, and they close tight. The exit tunnel feels cooler than the entrance tunnel.) This measure may be necessary too at the present entrance, if at least the natural entrance is re-opened, for with both natural and visitor's entrances open at the same time, an excessive air circulation would occur between them, causing excessive drying near the entrance itself, especially near the Gothic Palace. b) Our studies make it likely that there is a relatively small opening toward the outside near the Lodge Room. This should not be closed when the new entrance is constructed. On the contrary, if this were to be disturbed by construction of the new entrance, another opening of similar dimensions should be provided. For the life of the cave, the functioning of the stalactites and other cave formations depends equally on restriction of excessive air circulation as on a certain minimal circulation. If there is no air circulation at all, the CO₂ concentration would become so high

that no calcite could develop any more by removal of CO₂ from the calcium bicarbonate. Also the humidity would remain at the 100% level, making evaporation and further deposit of minerals such as gypsum impossible. Also without sufficient natural breathing of the cave the air inside would tend to become "stale," its CO₂ concentration would tend to be raised still further by breathing of the visitors (as shown by the CO₂ records of September), and perfume and other smells of visitors would persist. c) The opening of the natural entrance will probably have no influence on the total amount of air circulation inside the cave, except near the Gothic Palace. We recommend that in that area the pools be kept filled artificially with water to increase the humidity between the Gothic Palace and the Lodge Room. This is the only area where there is indication of excessive drying with the low dewpoint of the new air entering during cold weather. (At the time of this study the natural entrance had a plastic dome over it. Today the natural entrance has a concrete cage over it, which allows air and bats and other wildlife to circulate freely through the entrance.)"

FURTHER RECOMMENDATIONS BASED ON OUR STUDIES

- d) "With the considerable natural air circulation in the cave, its use as a fall-out shelter by the Office of Civil Defense should be reconsidered. (The fall-out shelter is located behind the Ivory Towers.) Only the N part of the cave, especially the Talus Room, is suitable for such purpose, and it would seem reasonably safe during summer, but during cold weather the use of an air filtering system should be considered somewhere near the Inscription Room. East of this point there is too much natural circulation in the cave to make it effective as a fall-out shelter."
- e) "An aspect of the cave, never considered before, is its freedom from natural condensation nuclei. This means that air supersaturated with water vapor will not condense as a mist or steam cloud. It also means that even in the very cool cave atmosphere, (50° F) human breath is invisible. (Not true.) However, the moment a match has been struck, or a cigarette is lighted, there is an abundance of condensation nuclei and breath becomes visible even in the cave (True.). This would provide another spectacular demonstration for visitors of the cave, provided the nuclei produced for demonstration for one group can be removed before the arrival of the next group. (Another demonstration is the absence

of the beam from a flashlight. There is so little dust in the cave that no beam can be seen; also the air is supersaturated with water vapor. You may see lint from your uniform or from visitors' clothes, but you will see no dust.)

There are two alternatives for this:

- 1) installation of a hood which is vented toward the outside of the cave with forced circulation through a fan. The match would have to be struck inside or under the hood;
- 2) installation of a set of absolute filters in the exhaust of the hood, which would remove the condensation nuclei from the air by filtration. Such a hood would provide also an excellent place for carrying out further experiments on natural and artificial nucleation, using different light sources, catalysts, and vapors. For we do not know any other place in the world with such low concentrations of condensation nuclei.

- f) From our studies it appears that much more work should be carried out on stalactites, stalagmites, soda straws, popcorn, shields, and other cave structures, both in Lehman Caves and elsewhere. It would be valuable to start right away with accurate marking and measuring of such structures, and obtaining lapse-time movies of their growth. A number of very instructive photomicrographs could be prepared for public instruction, and probably some exhibits with microscopes should be set up.
- g) The inventory of life in the cave should be followed up to get a complete survey, and to follow changes which may appear in years to come.¹

THE EXIT TUNNEL

The exit tunnel was built to make it easier for the visitor to leave the cave. The old method of leaving was to retrace the route from the Lodge Room to the entrance.

A contract was awarded to the Centennial Development Company of Eureka, Utah, for facility improvements beginning in the summer of 1969. Stone masonry walls were built at the exit of the new tunnel, topsoiling and landscaping performed around the portal, and approximately 160 feet of 5 foot wide asphalt trail was constructed between the new portal and the existing Visitor Center patio. The stone masonry was built in November and December of 1969 under a canopy heated to approximately 70° F. The rock, purchased from the nearby Hatch Quarries, was mixed with stone left over from past construction to roughly match existing masonry in the Monument.

A lighting system was installed in the caves between the Lodge Room and the new tunnel, and along the access trail down to the Visitor Center. One new dry transformer and a dry switch were placed in the "Giant's Ear" and connections were made between the old and new electrical circuitry. A telephone cable (3 pair) was also installed between the Visitor Center and the "Giant's Ear." Work around the tunnel portal and along the asphalt trail was accomplished late in the contract period.

Topsoiling around the portal was done in late February or early March of 1970. The asphalt trail was built and landscaped in June of 1970. Most of the cave and tunnel lighting was installed in December and January. Inaccessible wiring was put into hidden conduit. Much experimenting was required in the placement of the lights to obtain the best effect. Advice on light placement was provided by the Monument staff.

The contract for completion of the construction was changed from March 27 to July 2, 1970 because a second door had to be constructed inside the entrance tunnel. This door provides an air-lock arrangement to prevent drafts through the cave.

The tunnel was inspected and accepted on March 13, 1970. One telephone was installed in the cave near the Inscription Room, and other telephones can be added as needed.

The length of the exit tunnel is 350 feet; the unlined portion from the Lodge Room to the first door is 150 feet, and the lined portion between the doors is 200 feet.²

Cost of the Project:	1) Tunnel portal area	\$ 6,425.00
	2) Cave walk lighting	7,310.69
	3) Telephone wiring	200.00
	4) Access tunnel trail	<u>97,470.18</u>

TRAIL RESURFACING

The trails were resurfaced to give the visitor a safer path to walk on. The old surface, asphalt, became slippery when wet. It was replaced with concrete. A total of 1,255 90-pound bags of salcrete were taken into the cave by the maintenance staff. An electric concrete mixer was disassembled and taken into the cave, then reassembled. It was necessary to do this each time it was moved. Light oil and water were added to the salcrete before being poured over the asphalt. The sacks were stored in the exit tunnel.

This work was done in two parts. The first year began March 11, and ended on May 14, 1974, for a total of 42 work days or 138 man days. The second year started on November 26 and ended on December 20, 1974 for a total of 15 work days or 60 man days. Tours were conducted during the construction period.

Resurfacing figures:

Number of bags	1,255	Cost per bag	\$2.25
Weight per bag	90 lbs.	Total cost	\$2823.75
Total weight	112,950 lbs.		

Labor cost included only the salary of the maintenance staff.³

THE PARKING AREA

The General Contract Corporation of Salt Lake City, Utah was awarded a subcontract to work on construction of a parking area, walks, drainage structures, curb, gutter, and stairways. Work included clearing, grading, removal of a portion of existing curb and pavement, base course, prime coat, bituminous plant mix paving, seal coat and chips, concrete walk and curb and gutter construction, and drainage pipe and structures of the Monument.

Work was started in June and was inspected and accepted in September of 1969. The total cost for the work was \$26,947.70.⁴

WATER LINES & CHLORINATOR SYSTEM

The water-works improvements were begun in mid-August and finished in late October of 1969. The water lines were placed at the Springs area as designed. Approximately 95% of the backfill around the pipe (Johns-Manville PVC V.1120 PSI, 160 PSI rating 4" diameter) had to be transported to the site adjacent to the existing above-ground reservoir.

Heat in the building is by L.F. gas from a nearby underground 500-gallon tank. (The contractor decided to put it underground in lieu of an above ground cylinder with fenced-in yard. This provides an unobtrusive facility.) The water was chlorinated from the water tank, assuring adequate contact time before use.

The old reticulated clay collection system was replaced in the Service area with a new 4" PVC pipe. All piping between the various building heads and the common settling basin is now plastic pipe, which should be more efficient than the VCP collector system. A building with chlorinator, heater, meter, and necessary piping and gauges was constructed upstream of the existing above-ground steel reservoir. A new U.G. 500 gallon L.F. gas tank provides fuel for the heater.

This work was done by the Centennial Development Company of Burek, Utah. The total cost for the system was \$10,042.60.

Because of a problem with the new system, the water is now chlorinated below the water tank.

THE SEWAGE LAGOON

A joint effort between the U.S. Forest Service and the National Park Service extended the former sewer lines. By-passing two septic tanks and one leach field to a lagoon (1,000 feet below the septic tanks) and essentially on the same gradient, it requires no pumps or lift station. In addition, a dump station to accommodate sewage from Forest Service campgrounds and a trailer dump station were built on a spur off of the main road leading to the Visitor Center.

The station is well apart from the main traffic flow in a pull-out. The trailer dump station required a small pump, electrical power, and a two-inch water line for cleaning and pumping purposes.

The sewage lagoon is located in an old borrow pit where material was obtained during construction of the road in to the monument. The two-compartment lagoon covers about 1.5 acres; the first is .65 acres with a floating aerator and controls, the second is .85 acres. The lagoon is lined with compacted clay covered with butyl rubber to prevent water percolation into the soil. (The rubber lining is 37,500 square feet.) The entire lagoon area is enclosed in a chain link fence to keep unauthorized personnel and animals out.

The dump station accommodating sewage from Forest Service campgrounds (Jelmer, Baker, Snake, and Strawberry Creeks) was con-

structed above the sewer line leading from the Visitor Center line. The Forest Service proposes construction of mini-flush toilets at the facilities where water systems are available, and regular vault toilets at dispersed sites without water.

It is also proposed to install a small grinder unit and pump in the trailer dump station to boost sewage from the station over a 25 foot elevation and then gravity flow into the lagoon. The station is screened by landscaping.

Work was begun on the sewage system in the summer of '73 by the R.J. Connor Company of Indiana. The total cost for the system was \$101,792.00, paid for jointly by the Forest Service and Park Service.⁵

MORE FRUIT TREES

On Friday Morning, May 21, 1976, the Baker Grade School students gathered at the Visitor Center parking lot to plant 20 fruit trees commemorating the country's Bicentennial. Apricot, apple and pear trees were planted in the islands defining the parking areas. They should begin bearing fruit within the next year or three years.

The event was hosted by the Lehman Caves Natural History Association, and the trees were obtained at Christiansen's Flora of East Ely, Nevada. Approximately 40 children participated in the event with the help of Mr. Clyde and Mrs. Bertha Heath, teachers at the school, Mr. Jack Schippleck of the National Park Service, and several volunteer parents including Mrs. Virginia Baker, Mrs. Janet Moore, and Mrs. Lori Schippleck.

A picnic lunch consisting of roast-your-own hot dogs and marshmallows, baked beans, salad, chocolate cake, apples and milk was co-ordinated by Mrs. Margaret Bozarth, lunch room manager of the newly re-established Baker Grade School. The students and staff worked with great enthusiasm and are to be commended for providing this memorable community service.

The trees planted will augment the existing orchard believed to have been established by Absalom S. Lehman during the 1870's.⁶

ON THE AIR

In the summer of 1976, radio station 1606 went on the air. It was felt that this system, which was started in 1974, would solve the night-time locked road gate turn-around problem for campers arriving after the gate is locked in the evening.

The system is an informational AM radio transmitter using 100 milliwatts. It operates under FCC R & R part 15 subpart E section 15.404, and does not require an FCC license. The system is an encore recorder/producer 829-0007-000 purchased from Technical Systems, Inc., 1820 South 7th Ave., Bozeman, Montana; 59715.

The system was purchased jointly by the U.S. Forest Service and the National Park Service for \$1,300. Due to many technical difficulties the system was not installed until the summer of 1976. It is located on top of the Visitor Center.⁷

A NEW COAT OF PAINT

During 1975 and 1976 the buildings on Lehman Caves National Monument received a new coat of paint.

Starting in May and going through June of 1975, the outside and inside of the Visitor Center were painted. In January of 1976 the inside of the cafe was painted. The cost of the painting was \$325.

In April of 1976 the Warehouse, located in the maintenance area, received new siding and a roof to bring it up to par with the rest of the monument buildings, and was painted in July. The cost for building and painting was \$500.

In June of 1976, on the back side of the Visitor Center, an extra building was added called the "doghouse". This was built to store extra janitor and garden supplies. The doghouse was painted in July, costing a total of \$250.

The utility building, located in the maintenance area, was painted in July and August of 1976 at a cost of \$100.

Finally, the residential housing was painted in July of 1976 and cost \$800. The labor cost for the painting was the salary of the maintenance crew.⁸

A NEW A-V ROOM

Starting around April 5th, 1976, work was started on the construction of a new A-V room. The exhibits in between the Forest Park Service information desks had to be removed, and the A-V room was enclosed.

Before the new facility was built, the entire exhibit area had to be darkened to show the films, and the desk person had to leave

the information desk to turn it on.

The new A-V room is totally enclosed. It is located at the Forest Service (north) end of the building and is divided into two sections. The front is the viewing and exhibit area, containing 30 interlocking chairs, and totally carpeted. No one is allowed to smoke in this room, as they were in the old one. The back section contains the projection equipment and slide projectors. The room may also be used when giving evening slide talks. The film is operated off of a Kodak Davenport system and is run through a film loop. When it reaches the end it shuts off automatically, and does not have to be rewound. The system can be operated either manually or automatically from a pushbutton at the front desk.

The film operates on a rear screen projection system. It is projected onto a screen at a 40 degree angle to the projector which projects the image onto a glass screen.

Storage cabinets have been added underneath the exhibits inside the room and in the corridor between the two information desks.

Work on this room finished about July 26, 1974, at a cost of \$10,176.95.

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1. Desert Research Institute, Laboratory of Desert Biology, University of Nevada; Final Reports: Lehman Caves Studies to the United States Located in the Chief of IR&M Research Files.
2. Completion Report, Work Order No. 148-211716, Grounds Improvement around Cave Trail, Lighting along Cave Trail and Access Trail, and Replace Water Lines and Install Chlorinator System all at Lehman Caves National Monument, Nevada, Contract No. 14-10-7-271-222, Draft Copy.
3. Information supplied by Mr. J.W. "Bill" Gentless, Maintenance Foreman, on Re-surfacing the Lehman Caves trail.
4. Specifications for Construction of Cave Access Tunnel, Painting Trees and Reconstruction of Water lines, Lehman Caves National Monument, Nevada, Project No. LC-S313, May 22, 1969. Located in the Superintendent's Files.
5. File No. 5039 Water and Sewer (Lagoon). Located in the Administrative Officer's Files.
6. From a letter submitted to the Ely Daily Times on May 25, 1971.
7. Information supplied by Mrs. Katherine Kaiser, Visual Information Specialist, U.S. Forest Service, Humboldt National Forest.
8. Information supplied by Mr. J.W. "Bill" Gentless, Maintenance Foreman, painting of the Lehman Caves National Monument Buildings.

SECONDARY ELECTRICAL REWIRING PROJECT

Work on the Secondary Electrical Rewiring project at Ichman Caves National Monument was begun on May 12, 1977. Phase I of the project was completed on July 21, 1977. The contract for rewiring was awarded to Webber Electric, Inc., of Federal Way, Washington. The principal features of the project included the following:

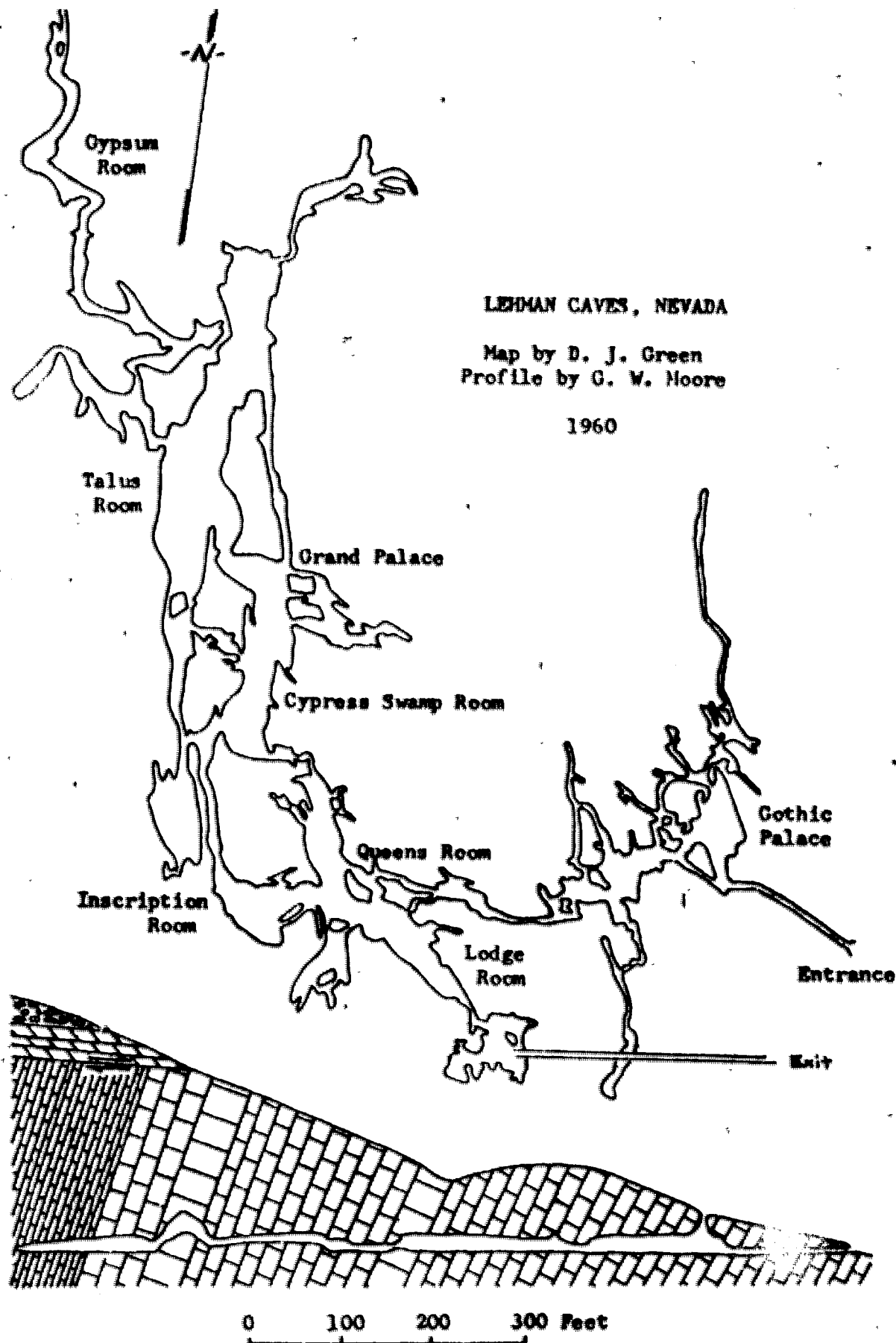
All existing cave lighting fixtures, except fixtures in the exit tunnel (section 6A) were rewired and all lighting fixture outlet boxes were replaced with non-metallic boxes. A solid-state modular dimming system was installed at transformer location No. 1 to control the three lighting circuits in section 1B, Gothic Palace. A total of 13,250 feet of new UF brand circuit cable was installed throughout the cave.

As a means of inhibiting the growth of algae by reducing the time that a lighting section was energized, a new low voltage remote switching system was installed. The number of lighting sections in the cave was doubled. Twenty-five new switches were installed and the total amount of UF switching cable installed was 6,250 feet.

New power panels and relay panels were installed at all six transformer locations. A new grounding system was installed throughout the cave and terminated at a new ground rod installed at the existing transformer site near the Visitor Center.

Phase II of the project, consisting of installing six new transformers, was to be completed in October of 1977.

The total cost of the Rewiring project amounted to \$45,695.70.



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