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Front Cover

Crystal Cave, Joplin, Mo., 1909. Stone entrance building as depicted on an old postcard. Note the tiny ticket window between the ladies on the right. Courtesy of Gary K. Soule.

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The Journal of Spelean History

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HISTORIC WHITE COUNTY CAVES, "LANDMARKS AND CURIOSITIES"

Doug Plemons

The earliest known written history of White County, Tennessee is probably a book written in the early 1930's by a Cumberland Presbyterian minister, The Rev. Monroe Seals. Entitled simply enough "History of White County" (1935) it was started but not actually finished by Seals, who passed away before completing it. The Sparta Civitan Club finished the job for him.

The book is filled with interesting stories, rendered in the old-style, elegant "finishing-school" language about the good old, OLDEN days of this part of the Cumberland Plateau in Tennessee. John White, a Revolutionary War Veteran, was awarded land by the government and homesteaded a tract of land in Hickory Valley, an area below the Plateau east of Scotts Gulf and several miles south of Sparta (Bald Knob quad). He cleared the land and built a house in 1789, one of the original settlers of the area.

"(White homesteaded). . . a seven acre tract lying between what is now the Luther Moss place and the Hickory Valley Presbyterian Church." (Remember that "now" is the early 1930s). By 1811 White was listed as holding 572 acres in the valley. His house was still standing in 1930 when Seals penned the book. His grave was mentioned in E. G. Rogers' 1972 history as being on the "Monroe Passons place" in Hickory Valley.

On his land was a "sinkhole spring" where the family obtained water and where his daughter nearly got ambushed by some Indians. This was the first, and certainly not the last, mention of a karst feature in the book. My intention here is to locate all the references to caves and correlate them to present-day known caves.

According to Seals and other area historians (i.e. Phillips, 1991; Rogers, 1972) White County was carved off of Smith County about September 6 or September 11, 1806, and at that time encompassed portions of Putnam, De Kalb, Warren, Van Buren, Cumberland, Grundy and Bledsoe counties of today. Warren County was divided off south of the Caney Fork on Feb. 1, 1808. The eventual cutting away of the other counties wasn't finished until around the Civil War. Rock Island was the original county seat, but this was changed in 1809 when it moved to Sparta.

One of the first industrial activities mentioned in Seals' book was the erection of a grinding mill in the sinkhole of the "Dodson's Chapel" cave in 1808, or Lost Creek Cave as we now know it. With a grinding mill on site it is not so hard to place saltpeter mining there during that time as well. Saltpeter was mined in the cave between the area of the "step-up" and the first downclimb toward the waterfall, most especially in a walking passage above and to the left of the step-up.

A killer quake rattled the Calfkiller Valley area north of Sparta in December 1811, presumable part of the series of shocks and aftershocks of the New Madrid earthquake that created Reelfoot Lake. According to Seals,

It had been raining for three months. . . the earthquake was at night. There was a smell of sulfur in the air before the shock. There was a wave of the land accompanied by a roar, then the most frightful thing occurred in an

accompanying crackling sound that sent terror to the stoutest hearts. A dozen people who were in the quake said that rents were made in parts of this County that were wide enough to receive a tree and that they seemed bottomless. Mud and steam shot out of the ground as high as trees. Water spouted out of the ground. Up the Calfkiller River a knoll containing about two acres was moved off its base without overturning a single tree, being moved from one to eight feet a day by the repeated shocks that came six or eight times a day...These shocks continued for six months. There are half a dozen springs coming up through holes so deep that cords made of three boss balls do not reach the bottom. They were thought to have been formed by the earthquake. Some have fish in them.

Even allowing for some exaggeration this was some severe quake! There are reports of evidence of fault lines in some places in the Calfkiller Valley, such as the gap between Icy Cove and England Cove. Where this "moving knoll" might be would be an interesting feature to assess.

Seals lists several places called "Land Marks And Curiosities" (pp. 23-26). Those related to karst features are:

1. "At the Frank Mitchell Ford on the Caney Fork River there is a high place in the bed of the river. Upstream from the ford is a deep hole in the riverbed. About a mile up the river is an underground passage through a cave which takes part of the river. After a dry season the water ceases to flow over the high places in the bed. With the coming of rain the cave takes the first water and the river actually flows in the opposite direction from its natural course. When the water becomes so swollen that the cave will not take all of it, it then rises above the high place and flows in its regular channel."

Scientific documentation of the locality is given in Dr. Nick Crawford's research of karst hydrogeology in the Cumberland Plateau. In a nutshell, the "high place" Seals refers to downstream is the shallows of the ford itself, the "deep hole" upstream of it is where the river sinks after resurging at The Pools, and the cave upstream which takes the water is the Caney Fork Siphon (WH76). Crawford dye-traced the region and states that after sinking at the Siphon during dry periods, the "entire river flows underground for 6.7 km; the river resurges at The Pools. . . after resurging at The Pools, most of the water sinks into what is probably a continuation of the same subsurface cutoff to resurge finally at Island Springs." Crawford retells the "backwards river" story by figuring out that "on rare occasions, during of just after a heavy rain, water will come through the subsurface cutoff faster that it can flow down the dry riverbed. This causes the stream to actually flow upstream for a short distance before meeting the surface discharge of the Caney Fork River moving downstream." (TN Dept. of Geology Bulletin #44, "Karst Hydrogeology of the Cumberland Plateau Escarpment of Tennessee").

This area is located on the Bald Knob and Lonewood quads and includes the drainage of Virgin Falls, and Lost Creek, and adjoins the drainage of Fox Hollow through Wallace Creek.

2. "There are two caves, one east of Hickory Valley and the other on Gum Spring Mountain, where ice may be found in August after a hard winter."

Although the Hickory Valley locality is unknown to this writer, the location of the Gum Spring Mountain cave is now positively known. Ice Hole (WH453) was located in 1991 by Cumberland Valley Grotto cavers Bryan Jones and Jody Bond. What was once a

very large, steep sloped sinkhole entrance fell in and became a scenic 61' deep pit, and locals testify to the large amounts of ice that could be had from the cave in rough weather. Someone has driven a vehicle off of the rim into the hole, the remains of which can still be seen in the bottom of the pit. Although anyone who has been caving in the dead of winter will see icicle deposits hanging from cave entrances and bluff faces, there must have been unusually large deposits of ice to have lasted until the fall of the next year!

Then comes a paragraph loaded with speleological implications:

3. "Caves with wonderful stalactites are numerous. Some of these run under the spurs of mountains, such as the Garlsbad Cave in Hickory Valley and the cave in the hole where the Lost Creek Mill is located and others. Echo Cave, east of Hickory Valley, is famous for sound...there are caves with salt peter in them. One cave in the county has a lake in it. There is at least one cave...that has historical interest. This is the Bone Hole Cave of Blue Spring Cove. In one of the chambers in the back of the cave is a round, deep hole about the size of an ordinary well. In this hole have been found great quantities of human bones...a famous robber band in the early days of our County used the cave as a hiding place. The mouth of the cave is by the side of the old trail over which many immigrants came into Calfkiller Valley. These bandits would waylay caravans at this point, kill the people, and throw their bodies into this hole, then take possession of the booty. One cave near Key has blind fish in it."

Hold up there, Seals - let's sort all this out!

A. No present-day White County cave is known under the name "Garlsbad" although from the implication by association with Lost Creek Cave and the phrase "runs under spurs of mountains" it may be a fairly extensive cave. The cave is apparently "in" Hickory Valley rather than "east of." It is a formation cave, although it is given in conjunction with Lost Creek Cave which contains few areas of formations. Where is "Garlsbad Cave?"

B. Echo Cave is "east of" Hickory Valley, and is not Lost Creek Cave, a place where yells can get lost for weeks! When Seals refers to "east of" Hickory Valley, he could mean all the way up the Caney Fork into Scotts Gulf, or Fox Hollow, or Pine Mountain. It is doubtful that he refers to Buzzard Mountain or Baker Mountain to the Northeast. Where, and what, is "Echo Cave?"

C. In the pre- Civil War area which was called White County there are now known to be dozens of saltpeter caves including some of the most high-producing niter caves in the United States, such as Big Bone, Hubbards, Cave Hill and others.

D. The "Bone Hole Cave" is the subject of some research by this author and will appear in a later article. This may possibly be Blue Spring Cave (WH2).

E. No blind fish caves are known among the base-level stream caves in the vicinity of Key, a town on the Putnam-White county line on the Dry Valley quad, although very few people have looked for caves along Post Oak Creek, the "key" stream in the area.

4. "Hell Hole is a hole in the ground a thousand feet deep with an opening into it from each side. High rocks are on the side of the sloping hole which make it a wonderful piece of scenery."

Seals refers to the huge, round sinkhole in the Bangor just north of Lost Creek Cave, actually only a few hundred feet deep, which contains Hell Hole Cave (WH16).

Apparently, according to another reference to Hell Hole in Seals' book, the place was well known to the early 1800's settlers.

To close off this article, I will leave you with a good lead if you care to follow it up. Seals does mention references to caves near the old Cumberland Academy - of which there are probably fifteen caves known now - with Indian relics. And there is a reference to a cave on "Lee Cunningham's place" where a man hid out for three weeks during the Civil War, where he "built a wall," presumably to hide from pursuing enemy soldiers. But probably the juiciest lead is one of Seals' "curiosities:"

5. "About a mile from Dodson's Chapel is a sinkhole over which there used to be a house where butter and milk were kept. On entering this house, one had to hold his hat to prevent it from being blown off his head *by the stream of cold air rushing up from the bottom of the hole.*"

Go find it, y'all!

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MISSOURI'S CRYSTAL CAVE Joplin's Crown Jewel

Gary K. Soule

Deep beneath the bustling streets of Joplin, a major Southwestern Missouri city, lies a hidden crown jewel. Once the subject of intense personal pride by area residents, this gone, but not forgotten, crystal-lined geode cave is now permanently flooded by the high water table in the area.

It was originally known as Tiff Cave. The cave was eventually developed and shown commercially as Crystal Cave.

But before I go any further, please let me point out here and now that Crystal Cave is *not* to be confused with either the nearby presently operating Crystal Cave at Springfield, or the Crystal Caverns at Cassville, Missouri.

In the latter half of the 1800's and on into the first half of the 1900's, the Tri-State area of Oklahoma, Kansas and Missouri has seen a great deal of mining activity. A variety of minerals were mined, with the primary ores being lead and zinc. The ores in the Tri-State area were deposited in cavities that had been dissolved out of the limestone. From time to time, considerable voids would be found containing minerals such as galena and large calcite crystals.

One of the most unique and beautiful caves ever to be discovered and exhibited to the American public was broken into during mining activities near the corner of 4th Street and Gray Avenue in Joplin. The Honorable James Roach broke into the natural cave while digging a mine shaft in the early part of 1893. The cave was a single chamber that Professor Bain of the United States Geological Survey originally estimated to be from 10 to 25 feet high, 20 to 40 feet wide, and approximately 225 feet long. Since these published dimensions were a guess, a subsequent report in the 21st Annual Report of the Bureau of Mines and Mine Inspection of the State of Missouri, published in 1907, was made. It stated that the actual dimensions of the cave, as measured, are 10 to 40 feet in height, 45 to 70 feet in width, and 250 feet in length. The cave chamber is elongated from the northwest to the southeast.



Being located some 80 feet beneath the city streets, the cave was like a giant geode full of large calcite crystals up to 22 inches in size! The entire surface of the cave, including the top, bottom, and all sides, were covered with closely packed calcite crystals with well formed faces! These crystals glittered and reflected light, making it a spot of storybook beauty.

One end of the newly discovered cave was on property owned by Henry Weymann, while the remainder of the cave was on property owned by Mr. Roach. Both men were so awe struck with the spectacular nature of the cave, that they decided to preserve it. They stopped all work in its immediate vicinity. Closer examination showed the cave lacked the common stalactites and stalagmites of other area caves. Up until mining at greater depths in the area had taken place, this unusual geode cave had been permanently flooded beneath the very high local water table. Pumps installed to keep the nearby active mines dry, had lowered the water table well below the 80 foot cave level prior to its discovery. The large calcite crystals had formed under water, while the usual stalactites and stalagmites were unable to form. This explained the absence of these more common type cave formations. Since the cave had been previously sealed, no bats or life of any kind were found in the cave.

Knowledge of this extraordinary cave first became well known with the first mention of it in an article in the Missouri Geological Survey report of 1894. This report basically dealt with lead and zinc deposits. But the unusual cave find merited special attention. The cave became known as Tiff Cave, and a circa 1900 map gave this cave name and the outline of the cavity was shown. A copy of it is in this author's possession.

The 21st Annual Report of the Bureau of Mines and Mine Inspection of the State of Missouri, with a publication date of 1907, came out with yet another glowing report on the cave.

About this time, a streetcar line was completed on 4th Street, and the Joplin & Pittsburg Electric Railway started carrying potential visitors right by the cave. It was only natural to think about developing the cave. A new "tourist" entrance to the cave was needed. Excavation was started, so an incline lead down from the surface to the 80 foot cave level (see approximate sketch map as Tom Molloy remembers it). A very unique building was constructed over this newly exposed surface opening to the cave. The building was about 20 feet wide and 25 feet long, and was located next to the alley, facing 4th Street. The building was constructed of limestone, calcite, and various minerals taken from the adjoining mines.

I interviewed Tom Molloy, age 95, an early cave guide, on April 29, 1993. The interview took place at his home in Joplin. He said the building had a flat, wooden roof. "The kids loved to swing around the vertical sign pole that supported the cave's new name, CRYSTAL CAVE." He admitted that he was one of them! The interior of the building consisted of two main areas, the lobby and an office area that were separated by a low, wooden railing. The first eight steps were all cement, followed by wooden steps and handrails down to the cave. Concrete retaining walls held back the loose ground. (See author's floor plan sketch).

On Saturday, July 4, 1908, the cave entrance building was completed, and the cave opened to the public. Tom Molloy was not only a resident of the immediate cave area, but one of the initial guides. Tom worked for Mrs. Roach, who lived in a one story wooden home that used to exist to the east of the cave entrance building, at the corner of 4th Street and Gray Avenue. Grape vines separated the new cave entrance building from her home. Across the alley to the west from the entrance building, tennis courts existed. Later on, the Foremost Foods Company plant was erected on this site. This building still exists today.

Tom says that carbon arc electric lights existed in the cave. He estimates the wooden dance floor in the cave was about eight feet wide, by 20 feet long. He is positive that the entire cave tour was on raised, wooden walkways. He said tours took 30 minutes to complete.

During a previous cave research trip to Joplin, I contacted Leta Malaby, another early cave guide. She was also 95 years old when I had talked to her on the phone on February 5, 1993. She said the cave was reached by 80 or more wooden steps! The tour was 25 cents a head for adults.

This author can personally attest to the fact that there were already picture postcards of the cave the very first year it opened! One showed the unique entrance building, while yet another showed the cave interior. (See both reproduced). One is clearly postmarked: "7-AM, OCT. 30, 1908, JOPLIN, MO.!" Tom informed me that no brochures are known to have been out on the cave. He further indicated that no tickets existed either. I would imagine that with a "ticket window" facing the sidewalk on the front side of the building, some type of ticket must have existed at one time. If anybody knows of any existing brochures or tickets on this cave, I would appreciate receiving verification on this.

On November 23, 1914, a large map showing the cave and its relationship to all adjoining mines was produced by the Sansom & Funk Civil & Mining Engineers of Joplin. It also showed the surface streets and streetcar lines. It did not show the excavated extension of Crystal Cave to the surface for tourists. (See a simplified version of the cave portion of this map with the mine above it).



Photo by F. W. Woolworth & Co.

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Visitors sitting on a mound of crystals in Crystal Cave. Note the size of the calcite crystals projecting from the ceiling, and the carbon arc electric light on the right side in this old postcard.

Already in 1914, wood was having to be replaced due to rotting.

Although the cave was maybe not quite as popular as it once was, the 1920's still saw the cave being used by the local ladies and others for card parties and gatherings. This was particularly true on hot summer days. Clubs liked to use it for meetings, as this was prior to the advent of air conditioning. In addition to regular guided tours, dances were also held in the cave. Tour costs would reportedly rise to 75 cents for adults, prior to the show cave operation eventually closing.



The interior of Crystal Cave where tourists first entered the crystal-lined void from the surface. Note the wooden walkways and rails.

Research indicates the cave closed to the public about 1930, after having been open for 22 years. One source indicates the cave was already closed in the early 1920's though. No definite closing date was found. Most likely by 1932, though, the cave entrance was further blocked so vandals could not enter the closed cave. The uniquely constructed cave entrance building still remained standing. It is not certain if this building had kept vandals out of the cave during this time span.

After World War II, the remaining mines in the area shut down. Their pumps were all turned off, and the water table gradually rose. This water eventually flooded the mine level and then Crystal Cave above. The smaller mine above Crystal Cave flooded also. The cave may have already been flooded years before. Although it could be a slow process, the flooding of the cave might have happened in as short a time span as one year if weather and various underground conditions were right.

Charlie Walker, a resident who lives a short distance from the cave site, informed me that in 1947 when he moved to the area, the cave entrance building was still standing. Big trees existed in the parking lot.

An attempt to dewater the cave for possible future public showing was made in the late 1940's, but it reportedly did not prove feasible. Everett J. Ritchie, Curator of the Tri-State Mineral Museum at Joplin, says any lowering of the water table with pumps would require draining all the water in a two mile surrounding area! This is due to all the adjoining former mines. If this were the case, reopening Crystal Cave would be economically unfeasible.

In 1952, the long since filled or covered entrance(s) to the cave and interconnected mine level were capped and sealed. The former Crystal Cave entrance building was torn down and the big trees were also eventually cut down and removed.

Today, a large, paved, blacktop parking lot exists on the Northwest corner of 4th Street and Gray Avenue. It was reported by John Mattes, who paved the lot, that the man-made mine "Discovery Shaft" had collapsed in on itself or at least was filled with cement blocks and other material. A historical marker is all that reminds today's tourists of the once glorious past of what was probably the most unique show cave in the entire United States!

"Gone, but not forgotten!" is the battle cry of some area residents. As recently as 1989, at least one prominent area geologist, Lloyd Combs, inquired of the Missouri Geological Survey about how difficult it might be to reopen the cave. A new, historically oriented Missouri State Park was considered as one possibility. Everyone agrees it would be a major attraction if ever opened again. But as Jerry Vineyard of the Missouri Geological Survey correctly points out, even if access to the cave could be gained, an attempt would have to first be made to have cave divers examine the flooded cave to see if the unbelievable calcite crystals are still in the cave. In this regard, the flooding of the cave might have helped preserve the cave by keeping vandals out if it happened relatively fast, or if the closed cave entrance building was not broken into for a while at least. Second, the question of how difficult it would be to dewater the cave would have to be dealt with. An attempt would have to be made to possibly create a grout curtain around the cave if pumps could not drain the cave otherwise. Although this grout curtain could be possibly quite expensive, it would then isolate the cave from the interconnected mines. This, according to Jerry, would hopefully permit just a small sump pump to periodically keep the cave itself, dry.

Finally, I would like to thank the following residents, city officials, land surveyors, museum employees, and others who have made this detailed report possible. These

individuals were numerous, and this is by no means an all inclusive list. The major contributors were: Lloyd L. Combs, Jerry Furrh, Dick Largent, Leta Malaby, John Mattes, Robert E. Mayes, Tom J. Molloy, Robbie W. Neece...who provided early detailed mine and cave maps, Everett J. Ritchie, Jerry D. Vineyard, and Charlie Walker.

Last, but not least, Bill Halliday and Dean H. Snyder for bring this long lost ex-commercial cave to my attention in the first place.

Who knows, maybe the "secret crown jewel" of underground Joplin will once again bask in the glow of tourist floodlights!



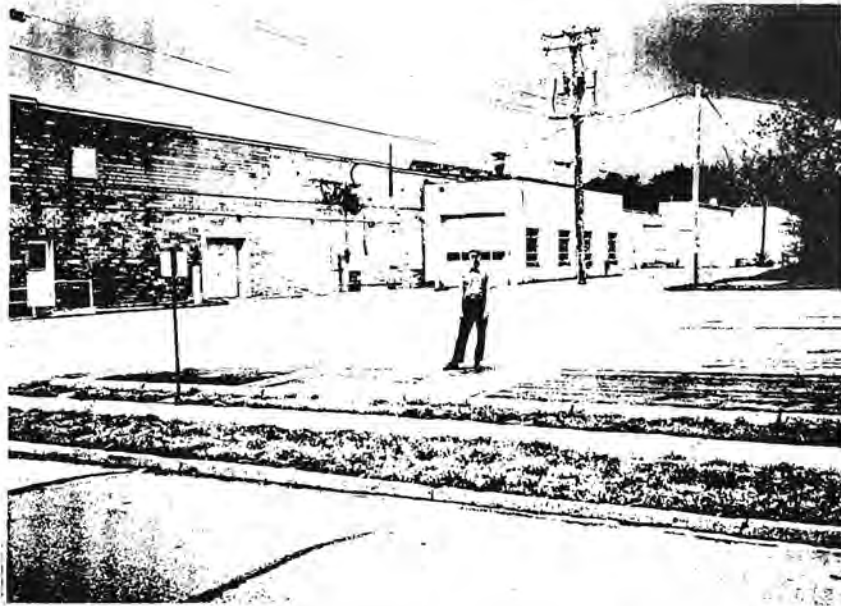
Former cave guide, Tom J. Molloy, in front of his Joplin Missouri home. He was 95 years old when pictured on April 29, 1993.



Everett J. Ritchie, Curator of the Tri-State Mineral Museum, stands next to a large calcite crystal which probably came from Crystal Cave.



Gary K. Soule next to a Joplin Historical Trail marker honoring the former site of Crystal Cave. The sign states the cave was discovered in 1894 and capped or sealed in 1952. Research by Gary shows the cave was discovered in early 1893.



View of the former site of the Crystal Cave entrance building with the Foremost Foods Company plant in the background. Gary K. Soule stands on the parking lot in the exact spot where tourists once descended stairs into the cave!

St. Louis - San Francisco
Railroad

North

This sketch map is drawn from memory by Tom J. Molloy, and it depicts part of Northwestern Joplin, in Jasper County, Missouri. Tom lived near the cave when he was a kid, and acted as a guide for visitors through the cave. This sketch map was slightly modified and details added as a result of the field research work done in the immediate area by Gary K. Soule in both February, and later in April, 1993. All mentioned mine shafts and the cave entrance are covered over and sealed today.

Show cave tour path
(Arrows mark the direction of travel in the cave.)

CRYSTAL CAVE
(Tiff Cave)

3rd Street

Alley

Gray Avenue

Wooden Dance Floor

Discovery Shaft

Excavated For Access

The Foremost Foods Company plant is located in this area.

4th Street

Show Cave Entrance Building
(now gone)

Mine Shaft

A former Quick Trip store building is now located in this area.

Note: This map is not drawn to scale.

Empire Avenue

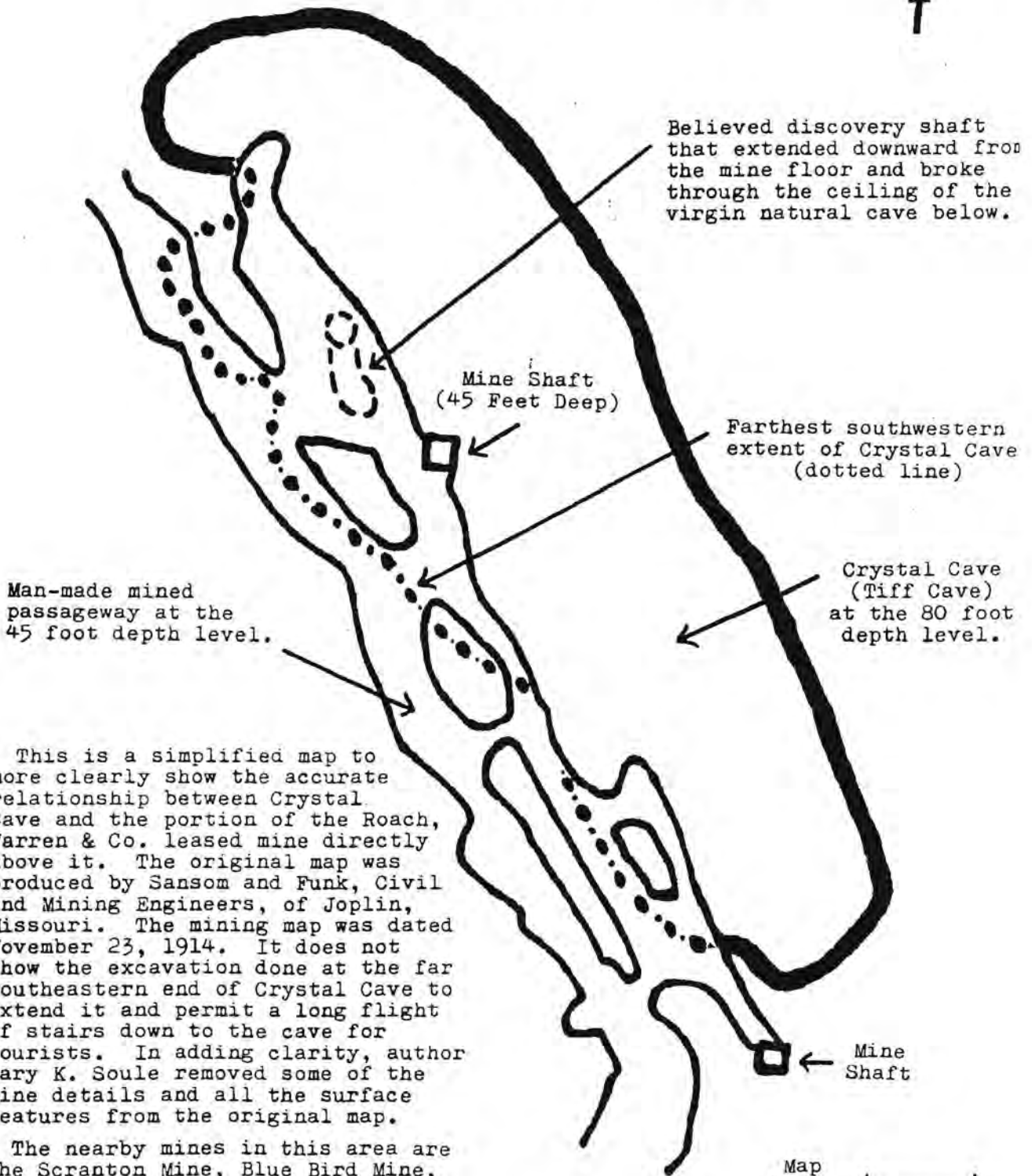
Pitcher Avenue

Alley

Gray Avenue

Map of Crystal Cave and Adjoining Mine Drifts
 City of Joplin, Jasper County, Missouri, U.S.A.

North



Believed discovery shaft that extended downward from the mine floor and broke through the ceiling of the virgin natural cave below.

Mine Shaft
 (45 Feet Deep)

Farthest southwestern extent of Crystal Cave (dotted line)

Man-made mined passageway at the 45 foot depth level.

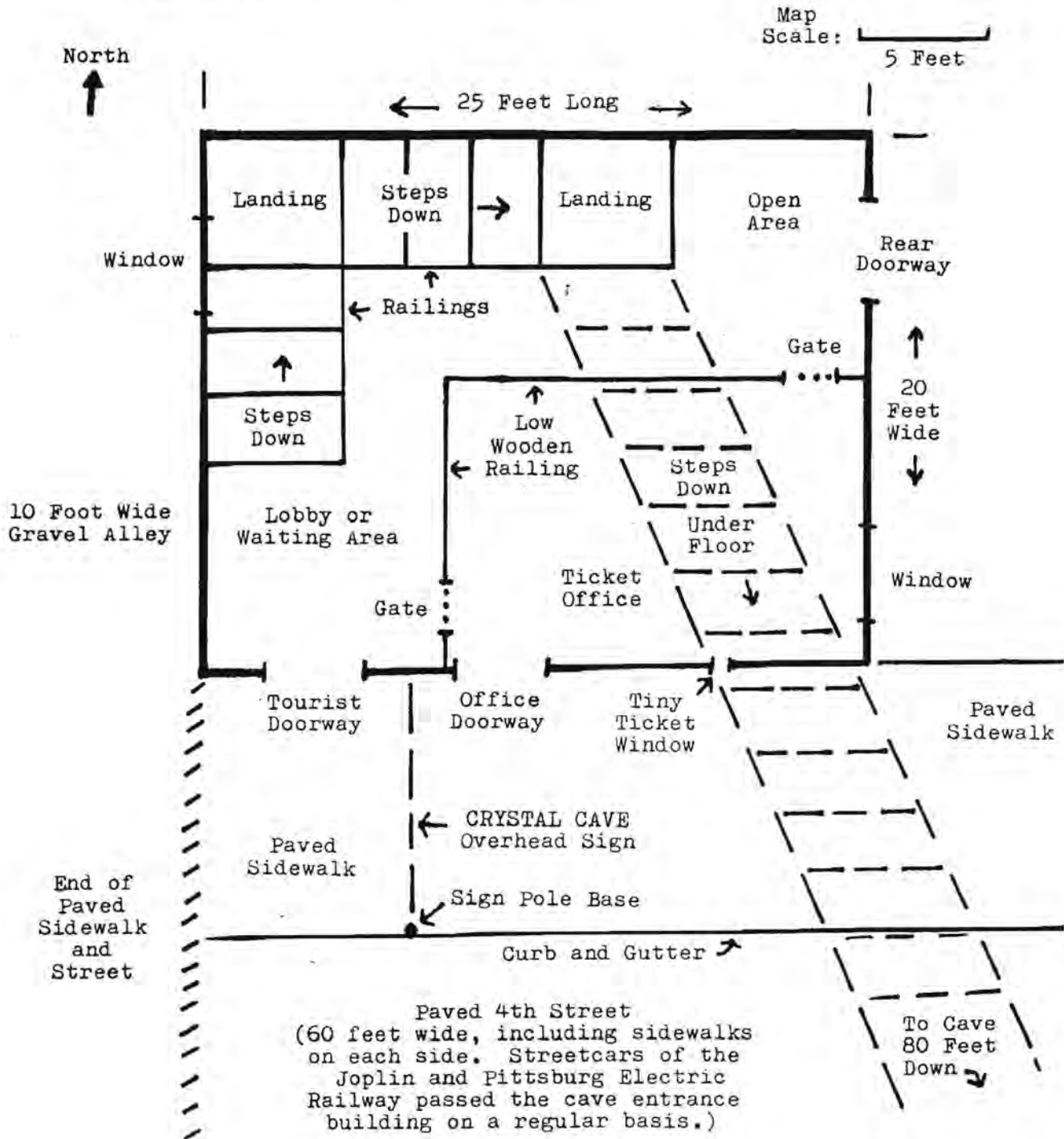
Crystal Cave (Tiff Cave) at the 80 foot depth level.

This is a simplified map to more clearly show the accurate relationship between Crystal Cave and the portion of the Roach, Warren & Co. leased mine directly above it. The original map was produced by Sanson and Funk, Civil and Mining Engineers, of Joplin, Missouri. The mining map was dated November 23, 1914. It does not show the excavation done at the far southeastern end of Crystal Cave to extend it and permit a long flight of stairs down to the cave for tourists. In adding clarity, author Gary K. Soule removed some of the mine details and all the surface features from the original map.

The nearby mines in this area are the Scranton Mine, Blue Bird Mine, and Dead Dog Mine. All these mines average about 120 to 180 feet in depth.

Map Scale: 20 Feet

Approximate floor plan of the former historic CRYSTAL CAVE entrance building, as drawn by Gary K. Soule. This plan is based upon an April 29, 1993, interview with former cave guide, Tom J. Molloy, of Joplin, Missouri. (Circa 1909 is depicted.)



BEGGING FOR BATS:

The Reading Public Museum's Pioneering Study of Bats

Dean H. Snyder

The inspiration for the Reading Public Museum, Berks County, Pennsylvania, began in 1904, at the World's Fair in St. Louis. One of its visitors was Dr. Levi W. Mengel, a science teacher at the Reading High School for Boys. As Dr. Mengel toured the exhibits, he wondered how his students could see the things that he was viewing. The Reading Public Museum was born at the fair's closing, when Dr. Mengel purchased several displays- for just the cost of shipping.¹ Dr. Mengel, an expert on butterflies who accompanied Peary on one of his first trips to the Arctic, served as the museum director. The Reading Public Museum became the first institution in the country which was operated by a public school district.

One of the Museum's projects during the early 1930s was a survey of the mammals living in Berks County.² Part of this effort included the collection of bats, for taxidermy, display, and study. Heading the survey was assistant museum director Earl L. Poole, who was an accomplished artist and the leading authority on the birds of Pennsylvania.³ Also part of this "bat team" was Charles E. Mohr, a science teacher in the Reading School District who was working on his Masters at Bucknell University.⁴ Assisting were museum taxidermist Samuel Wishnieski, Henry Kershner, and Albert Mittower.⁵



During the 1930s, pioneering research on bats occurred at the Reading Public Museum in Reading, Pennsylvania.

The team realized immediately that it would be difficult for them to complete their survey of such secretive animals as bats on their own, so they enlisted the aid of the residents of Berks County. In the *Reading Times*, Poole pleaded, "We would greatly appreciate the help of Berks citizens in getting a good collection of bats for our study. We don't care what kind they are, bit, little, black, or grey, if they are bats we want them. We have gotten bats of only three species so far and we think there are 10 or 12 varieties in the county. We would like to know, too, of any caves or holes inhabited by bats."⁶

The first year produced rather meager results, as few people dropped specimens - dead or alive - into the museum's "Bat Basket." However, the second year was much more productive, and the museum's bat collection grew day by day. A red bat was brought to the museum by Reading mail carrier John Boyer, who found the crippled specimen near the

post office.⁷ Another one was captured at dusk by Quentin Dietrich, age 13, who subdued it with his tennis racket.⁷ Sydney Conrad brought in a big brown bat which he caught with an old hat in his attic.⁸ Boy Scout James Root found a hoary bat with a 14-inch wingspan in the spire of the Perkiomen Avenue Presbyterian Church.⁹ Edwin Groff of West Reading delivered both little brown and big brown bats to the museum.¹⁰ Maurois Ansemovy captured a bat in a paper bag on the third story of his house in Reading.⁸

Despite the close contact between bats and civilians, only one "casualty" was reported. Alfred Chambers, assistant naturalist to the Boy Scout Camp, was bitten by a big brown bat.¹¹ Apparently, fear of rabies was never an issue.

Paul Haas, who lived near Kempton, reported that he had counted 200 bats flying around his house every summer night. Mohr and Wishnieski, with the help of Haas and his son Raymond, bagged 282 bats by spreading nets over the side of the house. This was the largest colony of bats ever discovered in Berks County. The men put the bats into potato bags before transplanting them to a vacant house near Moselem.¹² Unfortunately, this experiment proved to be a complete failure.¹³ Dr. Albert Lohman of Shillington discovered a smaller colony of bats under his second story shutters. Included in this group were a dozen young bats, barely old enough to fly. These were the first immature specimens of big brown bats found in the county.⁷

The bat team developed their own methods for capturing bats. During the night, the researchers would spread a beam of light over the waters of a dam to illuminate the flying mammals. Kershner, sitting in a rowboat, would wait for Poole and Mitterer's shotgun blasts before setting out to net the wounded bats. During one excursion, Kershner's overzealous reach for a red bat resulted in an unexpected midnight swim.¹⁴ Using this "bat navy" method, the first northern silk tail bat ever caught in Berks County fell prey to museum guns over a lake in Hopewell.¹⁵

Another method of collection - mosquito netting stretched across a cave entrance - was much more benevolent to the bats. At twilight, as bats began to travel, they would become entangled in the netting, from which they could be collected. Tennis rackets were used to guide any escapees into the netting. This method was very successful at Schofer Cave in 1931, when on one summer night 149 bats were caught.¹⁶

Poole's *A Survey of the Mammals of Berks County, Pennsylvania* was published in 1932. It has been



Earl L. Poole's painting of a Hoary Bat carrying its young appeared in *A Survey of the Mammals of Berks County, Pennsylvania*.



Dr. Levi W. Mengel founded the Reading Public Museum and Art Gallery and served as its first director.



Charles E. Mohr, third NSS President, collected and studied bats.



Earl L. Poole headed the "Bat Team" at the Reading Public Museum.



Samuel Wishnieski, museum taxidermist, mounted bat specimens.

described as, "outstanding, concise, a model of scientific thoroughness," and was even used as a text at Cornell University.⁸ The number of bat species known in the county increased from three to eight.¹⁷

The researchers found that bats were clean mammals, as less than a half dozen of the thousands they examined had lice.¹⁶ Poole and Mohr dissected bat stomachs and discovered remains of mosquitoes and other night-flying insects.⁷ They were surprised to learn that over 140 bats *entered* Schofer Cave at dusk.¹⁶ To test the homing instincts of different species of bats, the wings of bats were painted purple before being released several miles distant from their roost.¹⁸ In one trial, little brown bats released at Reading traveled 27 miles to reach their home at Kempton. Similar tests with pigmy bats suggested that their instincts were not as well developed.¹⁷

One of the added benefits of the survey for Charles Mohr were new reports of bat inhabited caves. Farmers provided 20 new cave locations to the museum.¹⁴ No doubt some of Mohr's cave descriptions included in Stone's 1953 *Caves of Pennsylvania* originated from caves discovered during the project. Mohr's study of bats continued long after the completion of the Berks County mammal survey. From 1932 to 1951, Mohr banded 3,645 bats in caves.¹⁹ In 1950, he became the third president of the National Speleological Society.

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Note

All of the preceding newspaper articles are found in scrapbooks in the Library at the Reading Public Museum. Unfortunately, some of them are undated, the source newspaper was never recorded, or the article is no longer attached to the scrapbook, so it is possible that some of the information contained in the citations is inaccurate.

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Book Review

Crypts, Caves & Catacombs: Subterranea Of Derbyshire & Nottinghamshire. Graham McEwan. Sigma Press, 1 South Oak Lane, Winslow, Cheshire, SK9 6AR, England; 1994, L6.95 - about \$11.00 plus postage, 146p.

Obviously, from the title, this small six chapter book is not entirely devoted to caves. Approximately one-half of it is descriptive of the history, archaeology and mythology of twelve natural (more or less) caves and numerous mines, tunnels and cellars.

The author begins the book with a discussion of the caves and cave dwellers of the Crestwell Crags. This short ravine east of the mining town of Crestwell is a world famous site for remains of extinct animals and the bones and artifacts of early humans from as far back as 47,000BP. These materials have been found in the many small caves scattered throughout the ravine. The history of the archaeological and paleontological research carried out in these and other local caves is discussed in some detail.

The second chapter is devoted to the show caves in the Castleton area. These include Peak Cavern, Speedwell Cavern, Treak Cliff Cavern, and Blue John Cavern. Peak Cavern is, by far, the best known and largest of the region's show caves and has been the focus of considerable research. The tour of Speedwell Cavern is actually through a mined tunnel the purpose of which was to barge lead ore out to the surface. The present-day visitor floats through this tunnel and only intercepts the natural cave at the end of the boat ride and tour! Treak Cliff and Blue John Caverns are relatively small show caves which are noted for their (generally worked-out) deposits of a mineral called "Blue John". This mineral, a dark, banded fluorspar, is prized for jewelry and ornamental artwork.

The remaining four chapters, a bit more than half of the text, do not concern themselves with natural caves per se. However, they are quite interesting in their own right. Chapter three is devoted to the history of local lead mining. Chapter four is focused on the tragic fire in the Crestwell colliery in 1950 resulting in eighty deaths. Chapter five details the history and hardships involved in the construction of various regional railway tunnels. The final chapter, entitled Nottingham Subterranea: The City of Caves," gives promise of more spelean information. As it turns out, all of the "caves" are artificial. Many of them are storage cellars, brew houses, dwellings and the fanciful creations of the wealthy with a lot of money and time on their hands.

This small, inexpensive book is a treasure trove of historical information on a small group of British caves. While there are ample maps of the caves discussed, it would have been helpful if a regional map giving the location of the caves were included. All are show caves (at some level) and therefore protected. So presentation of this information would not be a threat to the caves. Physically, this book is durable and an attractively soft-bound text with a low cost that makes it easily affordable to the speleo-historian.

Reviewed by George N. Huppert

