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Front Cover: Chert nodule, Colossal Cavern, Kentucky, photographed by Albert L. Graffam circa 1898. See the article by Jeffrey Miller in this issue.
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SO-CALLED ROCK ICE FROM A PERRY COUNTY, TENNESSEE, CAVE

Donald B. Ball

“Wonders,” we are frequently told, “never cease.” Yet an additional example of this time-honored truism appeared in a tantalizing article published in the September 10, 1872, edition of *The Chicago Tribune*. As noted therein (Anonymous 1872a; reprinted in Anonymous 1872b):

WONDER CAVE.

Startling Phenomenon in Wayne County, Tenn.—Reported Discovery of Ice that Never Melts.

From a Nashville Paper.

The following curious, perhaps sensational statements concerning the discovery in a cave in Perry County, of a markable [sic; remarkable] phenomenon connected with rock foundations, are made by the correspondent of [a] Waynesboro paper, in a letter datd [sic; dated] the 21st ult., from Linden, in Perry County [Tennessee]. One of the gentlemen cited in the correspondence as indorsing the statements made, Hon. T. M. Brasher [sic], is well known in this city, where he made many acquaintances during the session of the Legislature, m which he served as a member of the Lower House. The following is the letter:

Linden, Perry Co., Tenn.

Aug. 11, 1872

There has been perhaps the most remarkable and extraordinary discovery made in our county that you or any one [sic] else ever heard of. Some ten days since, T.M. Brashear, Esq., our late Representative from this county; Major J. L. Webb, our excellent Sheriff, and J. P. Wilson, our efficient Tax Collector, were together at Major Webb’s, and for recreation took a walk in and around his farm, when coming to the hills on the south of Major Webb’s place, they approached the mouth of a cave in the side of the hill, from which, in wet weather, a stream of water usually flowed. Feeling very warm, they concluded to enter the cave to cool off a little, and upon entering the mouth of the cave, were surprised at the unusual coldness that pervaded the cavern. Thinking there must

be something in the dark recesses of the cavern to produce such unusual coldness in the atmosphere, they concluded to penetrate still further into the cave, to see if they could not clear up the mystery. Procuring lights, they entered the cave, and, after proceeding some 75 feet, upon turning an angle, they beheld, to their astonishment, the whole interior of the cave festooned with the most beautiful stalagmites the eye of man ever beheld. Holding up their lights they gazed upon the beautiful sight with pleased astonishment, and, upon a nearer approach, they found the stalagmites to resemble the hardest, clearest ice, and cold as the touch of the ice-king himself. Becoming by this time chilled through with the coldness of the place, each of the gentlemen broke off a lump of this strange wonder, and started to return. Before reaching the mouth of the cavern, their hands were so chilled they could scarcely hold the strange substance, and upon reaching the outer air, they laid it down upon the ground, thinking it would soon acquire the temperature of the atmosphere. After resting fifteen or twenty minutes, they started for Mr. Webb's residence, each carrying, as best he might, his lump of rock ice, for I know of no other name by which to call it. Arriving at the house, they placed the crystals on a table, and waited patiently to see if it would melt, or even turn warmer. After waiting some half hour, and finding that it still retained its former coldness, one of the party suggested that they should try it in a pitcher of water. This was done, and to their infinite astonishment the glass pitcher in which it was placed was soon covered on the outside with moisture, similar to that produced by ice. Not being yet satisfied, they concluded to drink of the contents, and the question now was as to who should give the first trial. Mr. Wilson at length said as he was the youngest, and consequently the stoutest, he would try it, and he thereupon drank a hearty draught, and declared it equal to the best ice water. The other two gentlemen also drank of the water, and Mr. Brashear assured the writer of this that it was equal to the best ice water. At dinner they tried it in milk, and it soon made Mrs. Webb's excellent buttermilk as cold almost as ice itself. It produced the same effect upon butter as ice, and still retained its original frigidity. A number of persons have since visited this wonderful cave and carried off portions of this rock which they are using for all the purposes of ice, and it sustains no diminution in bulk or loss of coldness. Strange and improbable as all this may seem, yet it can be certified to by numbers of our best citizens. Dr. Black is using it in his practice, and it proves an excellent anesthetic, having the same effect as ice when mixed with salt. Mr. Thomas French and Colonel Waggoner, hotel keepers in Linden, used it in their hotels during Court week, to the astonishment of their guests. Specimens will be sent to our State Geologist for analyzation [sic; analysis]. If any one doubts the above plain statement of simple facts, they are referred to Hon. T. M. Brashear, Hon. G. H. Nixon. John A. Pitts, Esq., Major John L. Webb, Jo. Wilson, Thomas French, Captain

Easley, Professor in the Academy, and a number of others of the most reliable men in the county. Respectfully,

R. A. S.

P. S. I will send you a box of this rock ice by the first conveyance to your place.

As is often the case with such creative nineteenth century cave descriptions, at first glance we are left to wonder if this account was a complete flight of fancy or simply an “over the top” embellishment of a somewhat less than spectacular cave. Although the subtitle of the article states that this cave was reputedly located in Wayne County, Tennessee, the text of the piece appears to clarify its location as being in adjacent Perry County, (western) Tennessee. Within the pages of *Caves of Tennessee*, Thomas C. Barr, Jr. (1961:353-362) identifies a total of 11 Perry County caves but not surprisingly makes no mention of any of these containing permanently frozen rock formations. A subsequent study of Tennessee caves by Larry E. Matthews (1971) lists no caves in Perry County. Taking into account available but admittedly minimal evidence, it seems entirely reasonable to conclude that this narrative represents yet another entertaining but entirely specious tall tale.

References

Anonymous

1872a Wonder Cave (attributed to “R. A. S.”). *The Chicago Tribune* Tuesday, September 10, 1872, pg. 6, col. 8. Chicago, Illinois.

1872b Reported Discovery of Ice that Never Melts (attributed to “R. A. S.”). *The Anderson Intelligencer*, Thursday, September 19, 1872, pg. 1, col. 6. Anderson, South Carolina.

Barr, Thomas C., Jr.

1961 *Caves of Tennessee*. Bulletin 64, Tennessee Department of Conservation and Commerce, Division of Geology, Nashville (reprinted 1972).

Matthews, Larry E.

1971 *Descriptions of Tennessee Caves*. Bulletin 69, Tennessee Department of Conservation, Division of Geology, Nashville.

TWO EARLY PHOTOGRAPHS OF COLOSSAL CAVERN, KENTUCKY, TAKEN BY ALBERT LOMBARD GRAFFAM

Jeffrey D. Miller, MS

This paper introduces two circa 1898 photographs of Colossal Cavern in Edmonson County, Kentucky, that have been unviewed since 1923. The photographs have historical significance for the fact that they may be among the earliest photographs ever taken at Colossal Cavern, probably a mere two or three years after discovery of the cave and its opening for public exploration. The photographs, which are glass lantern slides, were taken by Albert Lombard Graffam (1868-1951), a technical drawing teacher, draftsman, and mechanical engineer who had strong interest in travel, nature, and photography. The two photographs presented here are among a much larger collection of glass lantern slide photographs taken by Graffam spanning over three decades, and which were combined with additional photographs taken by his younger friend and protégé, Frank Edward Miller Jr. The latter inherited the collection and subsequently passed it down to his grandson, the author of this paper, who currently owns the collection. The complete collection, comprising over 200 slides, is now digitized, archivally preserved, cataloged, and descriptively documented under the name *The Frank Edward Miller Jr. Glass Lantern Slides Collection*.

Biographical Sketch of Albert L. Graffam

Albert Lombard Graffam was born on 19 December 1868 in Bangor, Penobscot County, Maine, the son of Leander Lewis Graffam and Jeanette Dora Lombard.¹ After attending public schools in Bangor, Maine, Graffam enrolled in correspondence school courses and summer school programs which led him to complete a four-year evening course in drawing and mathematics at the Rhode Island School of Design in 1894, working all the while at a machine tool factory and at a screw manufacturing company.² Having completed his formal education, Graffam took employment with various machine tool companies, primarily working as a draftsman. On the side he devoted three years (1897-1899) as associate editor of the well-regarded publication *Machinery*, “during which time he travelled widely over this country, visited many manufacturing plants and devoted much time to various investigations along mechanical lines.”^{3,4} It was during this time in his career that Graffam took his “Kentucky Trip” and when the Colossal Cavern photographs were taken.



Albert Lombard Graffam (1868-1951).⁵

After marrying Adella Bachelder (1873-1960) in August 1900,^{6,7} Graffam decided to take up teaching as his permanent work and taught technical drawing and gave other manual training instruction in machine shops at various vocational/trade schools in Pennsylvania, Virginia, Connecticut, and Massachusetts."^{8,9,10} Leaving teaching altogether around 1911 and returning to industry, Graffam and his wife moved to Lynn, Massachusetts, where they remained for the rest of their lives, with Graffam working as a designing draftsman at the United Shoe Machinery Company and at the General Electric Company, but also running his own machine shop (the "Make & Fix Shop") where he performed "experimental and repair work and designing."^{11,12}

Photography was among Graffam's many and diverse interests, but there is no information on record about how or why he came to be interested in photography, nor about the type of camera equipment he used and what became of it. In this regard, his photographs preserved in the glass lantern slides collection forever will have to speak for themselves. Aside from dabbling with amateur photography, Graffam's ardent lifelong avocation was nature study. He was a member of a The Agassiz Association, a national federation of natural history groups promoting nature study,¹³ as well as a member and officer of the Gila Monster Natural History Society (later renamed the

Clark Nature League) in Lynn, Massachusetts, where his natural history specialty was “squirrels, chipmunks, and moles.”^{14,15} He also had an affinity for hawks, even keeping one he caught as a “pet” which, of course, he photographed.¹⁶ Graffam died from a cerebral hemorrhage on 16 June 1951 in Lynn, Massachusetts, at age 82,¹⁷ and was buried in Maplewood Cemetery in Fairfield, Maine.^{18,19}

Graffam’s “Kentucky Trip”

Perhaps the most interesting trip Albert L. Graffam documented with photography was a circa 1898 bicycle tour stretching through Kentucky to Virginia. The trip was the topic of a slide show presentation he made at the 51st meeting of the Gila Monster Natural History Society held in Lynn, Massachusetts, on the evening of 07 May 1923.²⁰ The trip is referred to in the Society meeting minutes as Graffam’s “tour through the near South,” but the lantern slide storage boxes are simply labeled “Kentuckey [*sic*] Trip.”

Graffam’s 1923 presentation at the Gila Monster Natural History Society meeting is recounted from the meeting minutes as follows:

Mr. A. L. Graffam then gave an account of a bicycle tour through the near South some 25 years ago and subsequently; and graphically described visits to Mammoth Cave and Colossal Cavern. Referring particularly to the latter cave, it was quite evident that in Graffam’s callow days he carried his life in his hand and was ready to throw it away at a moment’s notice.

We are glad he didn’t throw it away, however, but that he still lives to tell of the wonders of that truly wonderful cavern, with its cool, refreshing atmosphere, its huge chambers with their grotesque mural decorations, their massive stalactites and stalagmites, the rocky efflorescence; the startling echoes; the interminable labyrinths and the silver-toned drip of water into yawning black chasms of unknown and awful depth. We are glad too that Graffam was able to take a flashlight picture of a wonderful stone head that exists in this cavern a natural curiosity of an almost uncanny appearance—possibly the headpiece of some prehistoric deity.

Among other pictures which were shown were two of the Virginia Natural Bridge, which were especially good.

There were also pictures of miners’ cabins that brought home with considerable force the undesirable conditions under which these people live upon whom we depend for our very existence during six months of the year.

Scenes along the Ohio River were instructive, and reminiscent of pioneer days.²¹



Bicycle used by Albert L. Graffam on his "Kentucky Trip," circa 1898.²²

Graffam must have been an ambitious bicycle enthusiast, certainly well-conditioned physically for such a long journey that stretched the distance between the location where one photograph was taken in Louisville, Kentucky, to another in Virginia (i.e., Natural Bridge, Virginia)—about 450 miles. Diversions to other places in Kentucky documented in the photography (i.e., Pittsburgh, London, Rockcastle County, and Mammoth Cave/Colossal Cavern) would have made the cumulative distance even greater. Evidence from the photographs shows that Graffam had the luxury of a steamboat ride between Cincinnati, Ohio (just across the northernmost border of Kentucky), and Louisville, Kentucky, so perhaps he cut travel distances even further with the aid of boats, railroad, automobile, or even horseback (given that the last photograph from the trip depicts two people on horses). Curiously, the photograph of Graffam's bicycle only shows a rolled-up coat attached to the handlebars, a puncture

repair kit behind the saddle, and a leather camera carrying case attached under the crossbar, all of which would seem insufficient for the necessities of long-distance travel.

As evident from the Society meeting minutes, Graffam's photographs were enthralling, showing views of Mammoth Cave and Colossal Cavern in their burgeoning years as tourist attractions. Although many of the described photographs were lost from the collection over the past 120 years, his camera work certainly places him in the important echelon of photographers who have documented the Mammoth Cave region's many commercial caves since 1865.^{23,24}

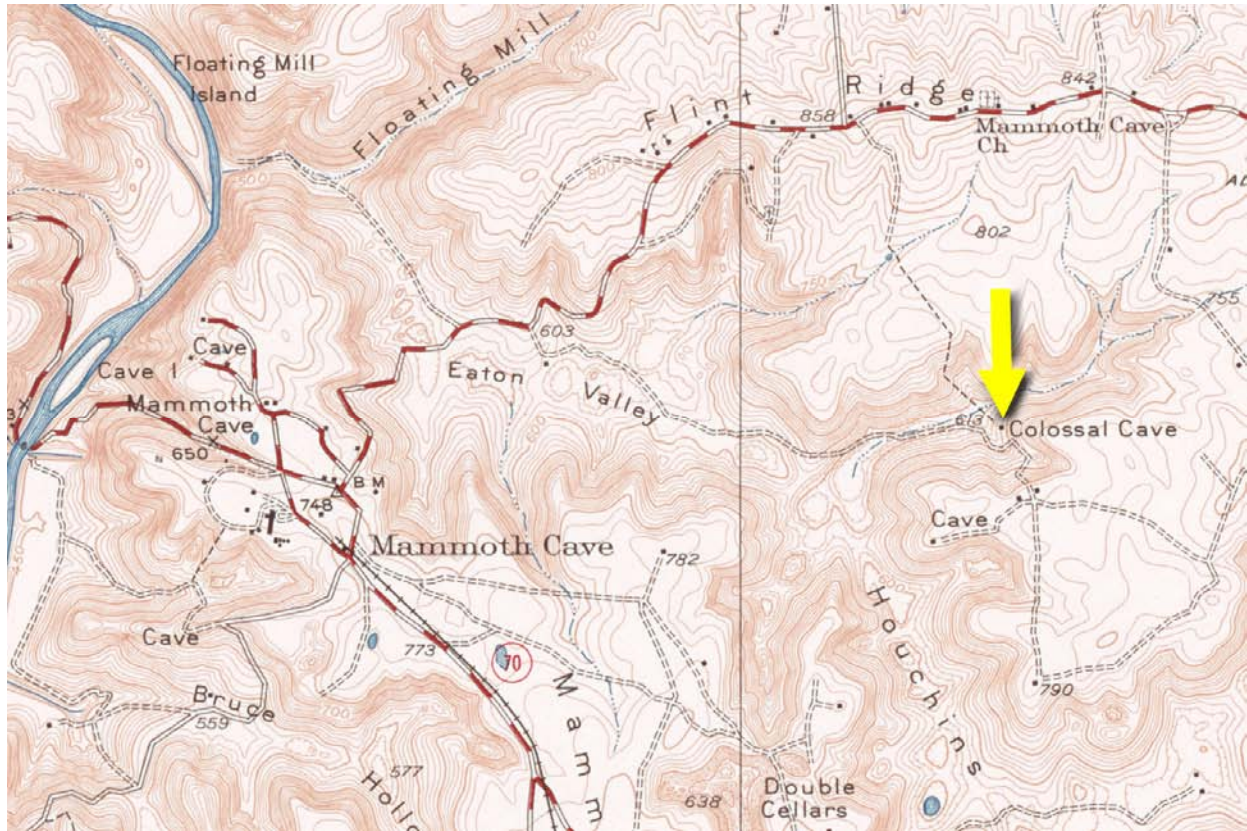
The Colossal Cavern Photographs

Only two photographs of Graffam's visit to Colossal Cavern survive in the present-day glass lantern slides collection—one showing the blasted-open entrance to Colossal Cavern and a second photograph showing a large chert nodule within the cave taken with flash photography. A third photograph (also shown at the end of this paper) depicts a tourist group at the nearby Mammoth Cave Hotel, where undoubtedly Graffam spent his nights before and after his cave exploration activities. Certainly there were other photographs of Graffam's Mammoth Cave/Colossal Cavern experience that are now gone, but fortunately these surviving examples can be shared here.

The circa 1898 photograph by Albert L. Graffam is on a glass lantern slide measuring 3.25 by 4.00 inches, labeled, "Entrance to Colosal [*sic*, Colossal] Cavern, Va. [*sic*, Kentucky]," with the number "8" written on the slide. The photograph shows the excavated entrance to Colossal Cavern in Edmonson County, Kentucky, evidently discovered in 1895, and now known to be an extension of the Mammoth Cave System.^{25,26,27,28} The central focus of the photograph is a man wearing a hat descending the slab stone stairs into the depths of the cave with two lanterns in his hand. The three-room house seen in this photograph on the hillside above the cave entrance was built in 1896, and the cave manager, Joseph Louis "Lute" Lee (1869-1962), lived there, succeeded in 1898 by James Morris ("J. M.") Hunt (1841-1925) who might actually be the guide featured in the photograph.^{29,30,31} Sometime after this photograph was taken, a pitched shed roof was constructed over the cave entrance to protect visitors from weather, as photographed by Eugene J. Hall (1845-1932) and published in multiple publications,^{32,33,34,35,36} also photographed by Albert O. Kraemer (1860-1926),^{37,38} and shown in photographs archived in the Jesse Earl Hyde Lantern Slide Collection at the Department of Geological Sciences, Case Western Reserve University.³⁹



Entrance to Colossal Cavern, Edmonson County, Kentucky,
photographed by Albert L. Graffam, c. 1898.



Location of Colossal Cavern in relation to Mammoth Cave.⁴⁰

Originally called the Woodson-Adair Cave, with the entrance at another location, Graffam's photograph probably depicts the "new entrance" constructed by the Louisville and Nashville Railroad in the summer of 1896 to make the cave more accessible for public tours.^{41,42,43,44} The blasted-open cave entrance as shown here in Graffam's photograph appears to have had a number of seasons of recovery, indicated by the soil erosion and vegetation regrowth, suggesting that this photograph was taken a year or two following the opening of the entrance, i.e., 1897 or 1898, which would be generally consistent with estimated dates for other photographs Graffam took on his Kentucky trip. Consequently, it is extremely likely that this photograph (and the next photograph in the sequence presented here) are among the earliest photographs of Colossal Cavern, although it is reported that Lyman W. Hazen (1841-1908) "may have taken a few photos in 1895 or 1896, when he still had photo rights to the cave, as one early cabinet card photo of 'Woodson Cave' does exist."⁴⁵ Furthermore, a privately-held photograph of the Colossal Cavern entrance, probably from around the same time or slightly pre-dating the Graffam photograph, has been published online.⁴⁶



ENTRANCE TO COLOSSAL CAVERN

View of Colossal Cavern entrance with shed roof, built sometime after the Graffam photograph was taken (probably photographed by Eugene J. Hall).⁴⁷



Chert nodule, Colossal Cavern, Kentucky, photographed by Albert L. Graffam c. 1898.

This second Colossal Cavern photograph taken by Albert L. Graffam is on a glass lantern slide measuring 3.25 by 4.00 inches and labeled, "Flint Specimen Collosal [*sic*, Colossal] Cavern Ky.," with the number "9" written on the slide. Obviously taken with flash photography within the cave itself (which could not have been an easy undertaking), the photograph shows a prominent chert nodule, which is a quartzose sedimentary rock also known as flint, per Graffam's label.

Meeting minutes from Graffam's 1923 presentation to the Gila Monster Natural History Society mention "a flashlight picture of a wonderful stone head that exists in this cavern a natural curiosity of an almost uncanny appearance—possibly the headpiece of some prehistoric deity,"⁴⁸ but it is unknown whether the impression was referring to this

particular photograph, or to another photograph among those that undoubtedly have been lost from the collection.

Subsequent History of Colossal Cavern

Although it was located only about one and one-half miles from the entrance to Mammoth Cave and in the vicinity of other local competitor show caves, and rivaled all of them in size and sensational beauty, Colossal Cavern itself was never a successful commercial venture, as summarized by Stanley D. Sides:

After the new blasted entrance was opened, patrons continued on the train to Mammoth Cave, and went by wagons up the valley to Colossal Cave. However, the cave never became the attraction that had been planned. While Lee was the manager, only five or six persons visited the cave weekly. Stories persist of how wagon wheels repeatedly fell off the passenger wagons during the 1 1/2 mile trip to Colossal Cave, requiring the visitors to walk back to Mammoth Cave and take their cave trip there. Frequently the horses were startled by strange noises in the bushes and woods, supposedly from cave competitors. . . . By 1910 the cave was seldom visited. . . . As time passed, declining revenues, the discovery of new commercial caves on Flint Ridge and the advent of the automobile closed Colossal Cave to the public.⁴⁹

By 1935, Colossal Cavern Company holdings were transferred to the Mammoth Cave National Park Association and Colossal Cavern was officially closed to the public, thereafter visited only by local rock collectors and National Park Service personnel.⁵⁰ The cave is now a refuge for bats and other wildlife and is protected by park officials for its natural and cultural significance.⁵¹

POSTSCRIPT

Graffam's Mammoth Cave Hotel Photograph

Having seen Graffam's Colossal Cavern photographs, readers of this journal will be interested in the third surviving photograph Graffam took during his trip in the Kentucky Cave Region. This circa 1898 photograph is on a glass lantern slide measuring 3.25 by 4.00 inches labeled, "Mammoth Cave Party from St. Louis Mo.," with the number "7" written on the slide. It shows a group portrait of eight women and one man standing or seated by a glider swing on the grounds of the Mammoth Cave Hotel in

Edmonson County, Kentucky. Albert L. Graffam's motivation for photographing this group of women from St. Louis is unknown, but it is possible that they all were guests at the Mammoth Cave Hotel and developed friendships with each other.



Mammoth Cave party from St. Louis, Missouri, photographed by Albert L. Graffam c. 1898.

Several observations about this photograph bear mention. The woman at the far right in the photograph is holding a box camera—either the Kodak Bulls-Eye No. 4 or the Kodak Bullet No. 4.⁵² A photograph of the famous Mammoth Cave guide, William Bransford (1866-1934), shows in its background the same glider swing featured in this photograph.^{53,54,55,56} Another photograph of the hotel grounds showing two of these glider swings (possibly including the one presented here) is in the University of Louisville Photographic Archives.⁵⁷

On December 9, 1916, the old Mammoth Cave Hotel was destroyed by fire,^{58,59} but some of the hotel registers were saved, including the several years within the circa 1898 timeframe of this photograph (i.e., August 1895 to December 1896, and 1897), which are now held by Mammoth Cave National Park.⁶⁰ Perhaps a future search of these registers would yield Albert L. Graffam's name and provide additional details about his "Kentucky Trip."

Acknowledgements

I extend my appreciation to Stanley D. Sides, Gordon Smith, and Bob Thompson, who reviewed the photographs and provided insightful commentary about them, and who graciously reviewed the draft of this manuscript.

References

¹ Bangor, Maine, City Clerk, *Bangor, Maine, Vital Records: Births, 1775-1917* (Salt Lake City, Utah: Filmed by the Genealogical Society of Utah, 1955), p. 247, Albert Graffam, 19 December 1869 [*sic*, 1868]; "Bangor, Maine: Deaths 1834-1891; births prior to 1891," FHL microfilm 007592506, image 320 of 601, *FamilySearch* (<https://www.familysearch.org/ark:/61903/3:1:3Q57-99FP-N4LY?i=319> : 29 December 2018).

² "Instructor for Machine Dept. Trade School," *Bridgeport Evening Farmer* (Bridgeport Connecticut), 12 May 1910, p. 4, col. 3; *GenealogyBank.com* (<https://www.genealogybank.com> : accessed 01 September 2018).

³ "Instructor for Machine Dept. Trade School," *Bridgeport Evening Farmer* (Bridgeport Connecticut), 12 May 1910, p. 4, col. 3; *GenealogyBank.com* (<https://www.genealogybank.com> : accessed 01 September 2018).

⁴ "Change of Associate Editors," *Machinery*, March 1899, p. 210; *Google Books* (<https://books.google.com/books?id=5jMAAAAAMAAJ&pg=PA210> : accessed 13 March 2017).

⁵ "Clark Nature League Outing, Forest River Park, Salem, Massachusetts, 1937," cropped digital image of Albert Lombard Graffam (1868-1951) from original photograph privately held by Doris A. Joyce, Laconia, New Hampshire.

⁶ Winchester, Middlesex County, Massachusetts, *Marriages Registered in the Town of Winchester for Nineteen Hundred*, p. 3, entry no. 37, Albert Lombard Graffam and Adella Batchelder, 01 August 1900; "Massachusetts, Marriage Records, 1840-1915," digital image 1054 of 1833, *Ancestry.com* (<http://home.ancestry.com/> : accessed 25 September 2017).

⁷ “Couple Quietly Observe Golden Wedding Date,” *Evening Item* (Lynn, Massachusetts), 03 August 1950; newspaper clipping privately held by Doris A. Joyce, Laconia, New Hampshire.

⁸ “Instructor for Machine Dept. Trade School,” *Bridgeport Evening Farmer* (Bridgeport Connecticut), 12 May 1910, p. 4, col. 3; *GenealogyBank.com* (<https://www.genealogybank.com> : accessed 01 September 2018).

⁹ 1910 U.S. Census, Natick, Middlesex County, Massachusetts, population schedule, enumeration district (ED) 954, supervisor’s district (SD) 117, sheet 4B, dwelling 72 (4 Wilson Street), family 98 (lines 82-83), Albert L. Graffam; NARA digital publication T624, roll 602, FHL microfilm no. 1374615; accessed via “1910 United States Federal Census,” digital image 8 of 61, *Ancestry.com* (<http://home.ancestry.com/> : accessed 26 March 2017).

¹⁰ “Secured Good Position,” *Indiana Weekly Messenger* (Indiana, Pennsylvania), 16 October 1907, p. 8, col. 6; *NewspaperARCHIVE.com* (<https://access.newspaperarchive.com/us/pennsylvania/indiana/indiana-weekly-messenger/1907/10-16/page-8> : accessed 27 January 2019).

¹¹ *Polk’s Lynn City Directory* (Boston, Massachusetts: R. L. Polk & Co., Publishers, 1940), p. 1017; “Massachusetts City Directories,” digital image 390 of 501, *Ancestry.com* (<http://home.ancestry.com/> : accessed 30 March 2017).

¹² “Couple Quietly Observe Golden Wedding Date,” *Evening Item* (Lynn, Massachusetts), 03 August 1950; newspaper clipping privately held by Doris A. Joyce, Laconia, New Hampshire.

¹³ “Additions to Our Membership: Corresponding,” *The Guide to Nature* (published by The Agassiz Association, Sound Beach, Connecticut), vol. XIV, no. 12 (May 1922), no. 12, p. 175; *Google Books* (<https://books.google.com/books?id=0NMeAQAAIAAJ&pg=RA3-PA175> : accessed 31 December 2018).

¹⁴ *Gila Monster Natural History Society/Clark Nature League Archives*, comprising meeting minutes (1918-1956), Society yearbooks, glass lantern slides, and other ephemera; privately held by Gary W. Robinson, Lynn, Massachusetts.

¹⁵ Gary W. Robinson, “Charles A. Clark: The Snakeman of Wyoma Village” in Elizabeth Hope Cushing, editor, *No Race of Imitators: Lynn and Her People, an Anthology* (Lynn, Massachusetts: Lynn Historical Society, 1992).

¹⁶ “Wyoma: Naturalists Have Busy Meeting,” clipping from an unidentified newspaper (probably in Lynn, Massachusetts) with article context giving estimated date as circa 1926; privately held by Jeffrey D. Miller, Stow, Massachusetts.

¹⁷ Southern Essex District Registry of Deeds, Essex County, Massachusetts, “Registered Land,” document no. 93706, recorded 14 June 1960, copy of record of death for Albert L. Graffam; *Salem Deeds Online* (<http://salemdeeds.com/> : accessed 25 September 2017).

¹⁸ Christine R. Brown, *Vital Records of Fairfield, Maine: Births, Marriages and Deaths* (Lenoir City, Tennessee: [publisher not identified], 1980), pp. 93 and 454; *AmericanAncestors.org* (<https://www.americanancestors.org/DB1672/i/39816> : accessed 25 September 2017).

¹⁹ *Find A Grave*, database and images (<http://www.findagrave.com> : accessed 25 September 2017), memorial 66052993, Albert L. Graffam (1868-1951), Maplewood Cemetery, Fairfield, Somerset County, Maine.

²⁰ *Gila Monster Natural History Society/Clark Nature League Archives*, comprising meeting minutes (1918-1956), Society yearbooks, glass lantern slides, and other ephemera; privately held by Gary W. Robinson, Lynn, Massachusetts.

²¹ *Gila Monster Natural History Society/Clark Nature League Archives*, comprising meeting minutes (1918-1956), Society yearbooks, glass lantern slides, and other ephemera; privately held by Gary W. Robinson, Lynn, Massachusetts.

²² This circa 1898 photograph taken by Albert L. Graffam is on a glass lantern slide labeled, “Bike used on trip in Ky. Photo at Bever [*sic*, Beaver] Creek, Ky.,” with the number “15” written on the slide. The bicycle is the same one shown in another photograph in the glass lantern slide collection — “Cliffs over Road, Rockcastle County, Kentucky, circa 1898.”

²³ Bob Thompson, *Photographers of the Mammoth Cave Region of Kentucky, 1865-2015* (Self Published: 2015), pp. 8-9; transcription, *DocPlayer.net* (<https://web.archive.org/web/20171227191024/http://docplayer.net/60401481-Photographers-of-the-mammoth-cave-region-years-of-cave-photography.html> : accessed 27 December 2017).

²⁴ Bob Thompson, “The Mammoth Cave of Kentucky: A Catalogue of Selected Photographers and Their Images,” *The Journal of Spelean History*, vol. 34, no. 1 (January-June 2000), pp. 3-57; *American Spelean History Association* (<http://caves.org/section/asha/issues/117.pdf> : accessed 27 December 2017).

²⁵ Lute Lee, “Memories of the Past,” *The Journal of Spelean History*, vol. 2, no. 1 (January-March 1969), p. 16; *American Spelean History Association* (<http://caves.org/section/asha/issues/005.pdf> : accessed 27 December 2017).

²⁶ Stanley D. Sides, M.D. “Early Cave Exploration in Flint Ridge, Kentucky: Colossal Cave and the Colossal Cavern Company,” *The Journal of Spelean History*, vol. 4, no. 4 (October-December 1971), pp. 63-69 and 74; *American Spelean History Association* (<http://caves.org/section/asha/issues/016.pdf> : accessed 27 December 2017).

²⁷ U.S. Department of the Interior, National Park Service, National Register of Historic Places Registration Form, “Colossal Cavern Entrance,” 1991; *NPGallery Digital Asset Management System* (<https://npgallery.nps.gov/AssetDetail/NRIS/91000491#> : accessed 26 January 2019).

²⁸ Horace Carter Hovey, *Mammoth Cave of Kentucky: with an Account of Colossal Cavern (Revised Edition)* (Louisville, Kentucky: John P. Morton & Company, Incorporated, 1912), p. 127; *Internet Archive* (<https://archive.org/details/mammothcaveofken02hove> : accessed 25 January 2019).

²⁹ Stanley D. Sides, M.D. “Early Cave Exploration in Flint Ridge, Kentucky: Colossal Cave and the Colossal Cavern Company,” *The Journal of Spelean History*, vol. 4, no. 4 (October-December 1971), pp. 63-69 and 74; *American Spelean History Association* (<http://caves.org/section/asha/issues/016.pdf> : accessed 27 December 2017).

³⁰ Norman L. Warnell and Stanley D. Sides, “Flint Ridge Cave History and Legends,” *Proceedings for Celebrating the Diversity of Research in the Mammoth Cave Region*, 11th Research Symposium at Mammoth Cave National Park, 18 April 2016, p. 33; *Western Kentucky University TopSCHOLAR*® (https://digitalcommons.wku.edu/cgi/viewcontent.cgi?article=1110&context=mc_research_symp : accessed 29 January 2019).

³¹ Stanley D. Sides, MD, Cape Girardeau, Missouri, to Jeffrey D. Miller, Stow, Massachusetts, email, 28 January 2018.

³² John Sydney Baxter, editor, *America: Her Grandeur and Her Beauty (Part Ten): The Caves of Kentucky – Mammoth Cave, Colossal Cavern, White’s Cave* (Chicago, Illinois: Union Book and Publishing Company, [no publication year, circa 1904]), [no page numbers]; *Internet Archive* (<https://archive.org/details/americahergrande00baxt/page/n132> : accessed 24 January 2019).

³³ Louisville and Nashville R. R., Passenger Department, *Subterranean Wonders: Mammoth Cave and Colossal Cavern, Kentucky*, sixth edition, [no publication date], [no page numbers]; *Internet Archive* (<https://archive.org/details/Subterraneanwon00none/page/28> : accessed 25 January 2019).

³⁴ John Thompson, *Mammoth Cave, KY: An Historical Sketch Containing a Brief Description of Some of the Principal Places of Interest in the Mammoth Cave: Also a Short Description of Colossal Cavern* (Louisville, Kentucky: Courier-Journal Job Print, 1909), p. 36; *Internet Archive* (<https://archive.org/details/mammothcavekentu00thom/page/36> : accessed 25 January 2019).

³⁵ Horace Carter Hovey, *Mammoth Cave of Kentucky: with an Account of Colossal Cavern (Revised Edition)* (Louisville, Kentucky: John P. Morton & Company, Incorporated,

1912), p. 127; *Internet Archive* (<https://archive.org/details/mammothcaveofken02hove> : accessed 25 January 2019).

³⁶ Bob Thompson and Judi Thompson, *Mammoth Cave and the Kentucky Cave Region* (Charleston, South Carolina: Arcadia Publishing, 2003), pp. 87-88.

³⁷ Bob Thompson, "The Mammoth Cave of Kentucky: A Catalogue of Selected Photographers and Their Images," *The Journal of Spelean History*, vol. 34, no. 1 (January-June 2000), p. 13; *American Spelean History Association* (<http://caves.org/section/asha/issues/117.pdf> : accessed 27 December 2017).

³⁸ Bob Thompson and Judi Thompson, *Mammoth Cave and the Kentucky Cave Region* (Charleston, South Carolina: Arcadia Publishing, 2003), p. 88.

³⁹ "119.B.33: Colossal Cave, near Mammoth Cave, Ky., Artificial entrance under shed" and "119.B.34: Colossal Cave, near Mammoth Cave, Ky., Entrance artificial," Jesse Earl Hyde Lantern Slide Collection, Department of Geological Sciences, Case Western Reserve University; *Hyde Collection: Mammoth Cave Series* (<https://artscimedia.case.edu/wp-content/uploads/sites/190/2016/07/14230324/119.B.33.jpg> and <https://artscimedia.case.edu/wp-content/uploads/sites/190/2016/07/14230323/119.B.34.jpg> : accessed 24 January 2019).

⁴⁰ U.S. Geological Survey and R. R. Monbeck, *Topographic Map of the Mammoth Cave National Park, Kentucky: Surveyed in 1930*, Washington, DC: U.S. Department of the Interior, Geological Survey, 1930; Library of Congress, Geography and Map Division (<https://www.loc.gov/item/2012588163/> : accessed 26 January 2019).

⁴¹ Stanley D. Sides, M.D. "Early Cave Exploration in Flint Ridge, Kentucky: Colossal Cave and the Colossal Cavern Company," *The Journal of Spelean History*, vol. 4, no. 4 (October-December 1971), pp. 63-69 and 74; *American Spelean History Association* (<http://caves.org/section/asha/issues/016.pdf> : accessed 27 December 2017).

⁴² Bob Thompson, *Photographers of the Mammoth Cave Region of Kentucky, 1865-2015* (Self Published: 2015), p. 112; transcription, *DocPlayer.net* (<https://web.archive.org/web/20171227191024/http://docplayer.net/60401481-Photographers-of-the-mammoth-cave-region-years-of-cave-photography.html> : accessed 27 December 2017).

⁴³ John Sydney Baxter, editor, *America: Her Grandeur and Her Beauty (Part Ten): The Caves of Kentucky – Mammoth Cave, Colossal Cavern, White's Cave* (Chicago, Illinois: Union Book and Publishing Company, [no publication year, but circa 1904]), [no page numbers]; *Internet Archive* (<https://archive.org/details/americahergrande00baxt/page/n119> : accessed 24 January 2019).

⁴⁴ David Randolph Kem, *The Kentucky Cave Wars: The Century that Shaped Mammoth Cave National Park* (Self-Published: 2014), pp. 49-64.

⁴⁵ Bob Thompson, *Photographers of the Mammoth Cave Region of Kentucky, 1865-2015* (Self Published: 2015), pp. 111-113; transcription, *DocPlayer.net* (<https://web.archive.org/web/20171227191024/http://docplayer.net/60401481-Photographers-of-the-mammoth-cave-region-years-of-cave-photography.html> : accessed 27 December 2017).

⁴⁶ David R. Kem, "The Lee Family of Mammoth Cave," 01 March 2014; *The Kentucky Cave Wars* (<https://kentuckycavewars.wordpress.com/tag/colossal-cavern/> and http://web.archive.org/web/20171227215422/https://kentuckycavewars.files.wordpress.com/2014/03/thomas_lee__dan_lee__and_unknown_carrying_lamp_18961.jpg : accessed 27 December 2017).

⁴⁷ Louisville and Nashville R. R., Passenger Department, *Subterranean Wonders: Mammoth Cave and Colossal Cavern, Kentucky*, sixth edition, [no publication date], [no page numbers]; *Internet Archive* (<https://archive.org/details/Subterraneanwon00none/page/28> : accessed 25 January 2019).

⁴⁸ *Gila Monster Natural History Society/Clark Nature League Archives*, comprising meeting minutes (1918-1956), Society yearbooks, glass lantern slides, and other ephemera; privately held by Gary W. Robinson, Lynn, Massachusetts.

⁴⁹ Stanley D. Sides, M.D. "Early Cave Exploration in Flint Ridge, Kentucky: Colossal Cave and the Colossal Cavern Company," *The Journal of Spelean History*, vol. 4, no. 4 (October-December 1971), pp. 63-69 and 74; *American Spelean History Association* (<http://caves.org/section/asha/issues/016.pdf> : accessed 27 December 2017).

⁵⁰ Stanley D. Sides, M.D. "Early Cave Exploration in Flint Ridge, Kentucky: Colossal Cave and the Colossal Cavern Company," *The Journal of Spelean History*, vol. 4, no. 4 (October-December 1971), pp. 63-69 and 74; *American Spelean History Association* (<http://caves.org/section/asha/issues/016.pdf> : accessed 27 December 2017).

⁵¹ David R. Kem, "The Colossal Cavern Company," 27 January 2014; *The Kentucky Cave Wars* (<https://kentuckycavewars.wordpress.com/2014/01/27/the-colossal-cavern-company/> : accessed 26 January 2019).

⁵² Eastman Kodak Company, *Kodaks*, 1898, pp. 13 and 17; Central Library of Rochester and Monroe County, New York, *Trade Catalog Collection* (http://www.libraryweb.org/~digitized/tradecats/kodak/Kodaks_and_Kodak_suppl ies_1898.pdf : accessed 22 January 2019).

⁵³ *Horse Cave Stories: Cave Explorers*

(<http://web.archive.org/web/20171228163654/http://www.horsecavestories.com/mobile/images/bransford/WillBransfordjan.jpg> : accessed 28 December 2017).

⁵⁴ *Bransford Family Memorial*

(<http://web.archive.org/web/20190124135356/https://static1.squarespace.com/static/5a60cf9dccc5c5e5c85ac1e2/t/5a623cad652dead687759640/1516387501565/WillBransfordjan.jpg?format=750w> : accessed 24 January 2019).

⁵⁵ Joy Medley Lyons, *Making Their Mark: The Signature of Slavery at Mammoth Cave* (Fort Washington, Pennsylvania: Eastern National, 2006), p. 31.

⁵⁶ David Randolph Kem, *The Kentucky Cave Wars: The Century that Shaped Mammoth Cave National Park* (Self-Published: 2014), p. 42.

⁵⁷ "Hotel at Mammoth Cave Ky., 7.10.1907," Photographic Archives, A.W. Terhune Collection, University of Louisville, Louisville, Kentucky; *Digital Collections* (<https://digital.library.louisville.edu/cdm/singleitem/collection/kyimages/id/30/rec/1> : accessed 24 January 2019).

⁵⁸ Bob Thompson, "Mammoth Cave Hotel Registers," *The Journal of Spelean History*, vol. 37, no. 1 (January-June 2003), p. 27; *American Spelean History Association* (<http://caves.org/section/asha/issues/123.pdf> : accessed 26 December 2017).

⁵⁹ Richard Hobart, Bob Thompson, and Norman Warnell, "The Early Hotels at Mammoth Cave," *The Journal of Spelean History*, vol. 49, no. 2 (July-December 2015), p. 8; *American Spelean History Association* (<http://caves.org/section/asha/issues/148.pdf> : accessed 29 January 2019).

⁶⁰ Bob Thompson, "Mammoth Cave Hotel Registers," *The Journal of Spelean History*, vol. 37, no. 1 (January-June 2003), pp. 27-28; *American Spelean History Association* (<http://caves.org/section/asha/issues/123.pdf> : accessed 26 December 2017).

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CLIPPINGS

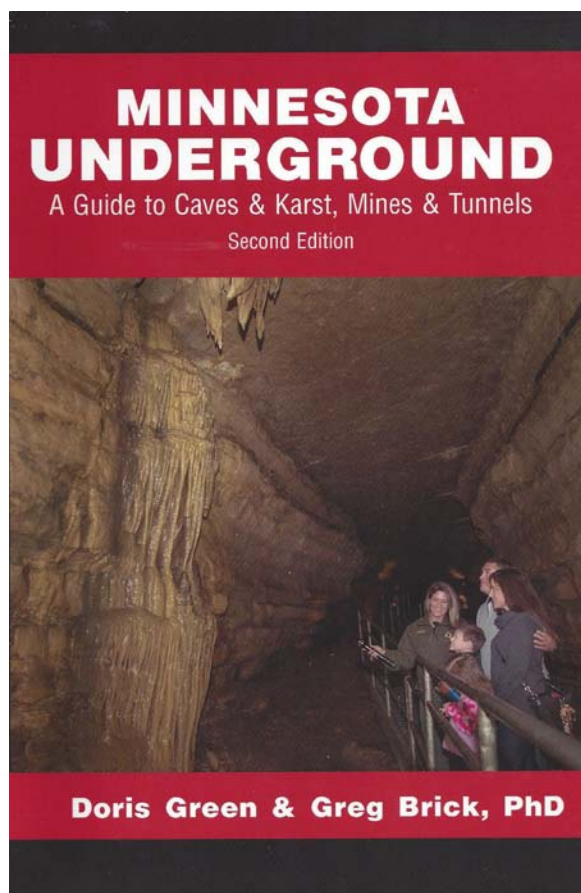
RIVAL TO MAMMOTH CAVE.

LOUISVILLE, Ky., March 4.—Milton H. Smith, President; Horatio W. Bruce, Chief Attorney, and Cushman Quarrier, Controller, of the Louisville and Nashville Railroad Company to-day became incorporators of the Colossal Cavern Company and the Louisville Property Company. The capital stock of the Cavern Company is fixed at \$25,000. A few minor employes of the railroad are given stock to make the required number, but the bulk of the stock is held by Mr. Smith. The capital of the Property Company is \$50,000 and similarly divided.

The evident object of the association is to acquire and develop as a resort for the railroad company the newly discovered Colossal Cavern, a rival of Mammoth Cave. Mammoth Cave being held by foreign heirs, the railroad company has been unable to secure concessions for the benefit of its tourist patrons. Colossal Cavern boasts of many beauties not enjoyed by Mammoth Cave. The company may also acquire the Mammoth Cave Railroad Company.

From the *New York Times*, March 5, 1898.

BOOK REVIEW



MINNESOTA UNDERGROUND: A Guide to Caves & Karst, Mines & Tunnels, 2nd Edition, By Doris Green & Greg Brick, PhD, 2019. HenschelHaus Publishing, Inc., 6540 W. Forest Home Avenue, Suite 102, Milwaukee, Wisconsin 53220. 6X9 inches format, 191 pages softbound, \$19.95. ISBN: 978159598-746-4. Reviewed by Gary K. Soule.

The Second Edition of "MINNESOTA UNDERGROUND" will be of interest to speleohistorians considering the large helping of historical material that has been added since the first edition. This

expanded edition is remarkable in its complexity in covering just about everything in Minnesota that relates to, or is underground and available to the public. This also includes surface features like museum exhibits, cave related mining features and buildings. In fact, 40 additional listings are featured in this new, improved edition. As for the 99 illustrations or photos in the book, you will find 86 colored photos, three black and white photos, two historic cave maps, six old cave postcards, and even two artistic cave sketches.

The state is divided into five sections which are: Southeastern Minnesota, Southwestern Minnesota, Minneapolis-St. Paul Area and St. Cloud, St. Croix River Valley, and Northern Minnesota. Taken together, an impressive 81 sites in 23 different counties are covered. A total of 13 museums are also included, that represent cave and mining replicas, not to mention geology. For each site listing, accurate directions, the season/hours the site is open, length and precautions if appropriate, amenities, and other information are all provided. I can only imagine how much research and traveling co-authors Doris Green and Greg Brick poured into the production of this book. For biologists, White Nose Syndrome as it relates to bats is covered to quite some extent, not to mention one of the 21 special sidebars covering the native tan camel crickets of Reno Cave.

It is only appropriate that a picture of the lengthy Mystery Cave near Spring Valley, Minnesota, is featured on the front cover. Cavers will really enjoy also reading about Niagara Cave with its 60 foot high underground waterfall near Harmony, and the extensive details on caver John Ackerman's Minnesota Cave Preserve. Did you know that his properties exist in both Iowa and Minnesota, and encompass 42 caves, 714.3 surface acres, and 1,274 acres of underground rights? The book is very current, even including his recent purchase of the historic Hiawatha Caverns, a former show cave, near Witoka, Minnesota.

I learned a new fact as well, regarding scenic Niagara Cave. Here I quote: "In 2015 Niagara Cave became the first commercial cave in the world to use solar energy to fully meet all its energy requirements. A 210-foot photo-voltaic solar panel array produces 45,000 Kilowatts per year." Although it might seem picky, I do have to point out that for many years now, commercial caves are now technically referred to as show caves.

I might point out that I was pleased to see some of the neighboring state show caves featured as well. These include Wisconsin's longest cave, Crystal Cave near Spring Valley, Wisconsin; Spook Cave near McGregor, Iowa, and Crystal Lake Cave near Dubuque, Iowa.

In many regards, this book answers so many questions. Where was a prehistoric man crushed by a giant boulder? What about Red Wing's underground river? Where is an almost

1,000 foot long "Tunnel of Love?" Can a lava tube be found in Minnesota? Going further, caves or sites are featured that were used by prehistoric animals, storage shelters for everything from books to dynamite, as well as restaurants, and even for boating and kayakers. Speaking of books, can you imagine two man-made caves dug out and finally opened in 2000 to store books? One cave alone holds over 1.5 million books in shelves 17.5 feet high! Yes, it is 85 feet underground and yes, the public can tour it.

Mines and the mining landscape of Minnesota are nicely featured, beginning with the historic French saltpeter caves described by Le Sueur in 1700. But in reviewing this informative book, I cannot help but comment on one such mining site. This is the Soudan Underground Mine State Park in St. Louis County. It has to be the deepest public underground tour attraction in the entire U.S. for sure. I know it was the deepest penetration I have ever made in my lifetime into the Earth's crust. You ask how deep? Well, a rickety, dimly lighted mining cage takes you down 27 levels to a depth of 2,341 feet. This is almost half a mile underground and even below sea level! You can actually see the mine levels fly by you as you descend! You can then board a train and off you go...but wait, you can also visit a huge subterranean laboratory. I have never seen a laboratory as unbelievably elaborate as this. On the other hand, Greg describes the rather spartan Banshee Cave Subterranean Laboratory that he set up in 1990. He brought in a load of supplies

and tables and chairs. Springtails and other cave life was studied. Nearby is the Ice Box, a rather unusual cave on the banks of the Root River in Southeastern Minnesota.

While I admit I lean more towards the natural caves, this book certainly has a tremendous and very broad public appeal due to its extensive coverage of literally all aspects of underground Minnesota. If you like natural caves and the unusual, including man-made features, then this is your ideal guide! The authors seem to have literally not missed anything!

A word about the co-authors is worth noting here. Both Doris Green and Greg Brick are cavers and are well known in the caving community.

Doris Green was a communications specialist with the School of Human Ecology at the University of Wisconsin – Madison. She holds a Bachelor’s Degree

from the School of Education, and a Master’s Degree from the University of Wisconsin-Madison. Her Master’s Degree is from the School of Journalism and Mass Communication. She has written many previous books, including two successive editions of “Wisconsin Underground.”

Greg Brick holds a doctorate in Geology with a minor in the History of Science, and was employed as a hydrologist. He has also taught geology at local colleges and universities. He is the 2005 Peter M. Hauer Spelean History Award recipient, and currently co-edits “The Journal of Spelean History.” He is the foremost authority on what natural caves, as well as manmade tunnels, that exist in the Twin Cities area. He has published several cave books, including “Iowa Underground” (2004), “Subterranean Twin Cities” (2009), and “Minnesota Caves: History & Lore” (2017).



Historic image of silica mine under St. Paul, Minnesota.