

From the President's Desk...

Volunteer opportunities, field trips, lectures, and public service, since 1938 Greetings fellow GSM members. Spring is upon us, there are encouraging signs in the Covid pandemic, our spring lecture series has wound down, and I have had my first deer tick of the season.

Our spring lecture series has been quite successful, and we have had very good attendance. Plus, we've had a couple of interesting exchanges with other organizations which raised interesting questions about opportunities that may be available in the future with virtual or mixed meetings. There have been some unique challenges to key members, including Dave Wilhelm, Steve Erickson, and Randy Strobel in dealing with the variabilities and added effort of virtual meetings and remote speakers. Dave Wilhelm details this in another article in this newsletter.

Unfortunately, we have to cancel the spring banquet, but are hopeful we will be able to get back to a degree of normalcy with a Fall Banquet in September; although—it looks like fall lectures will be virtual. Hopefully, we will be able to return to classroom meetings in February of 2022. I know I personally miss interacting with fellow GSM members and guests in a live setting (not to mention cookies!).

It looks like the State Fair is a go for this August, and GSM will have its booth there. Patrick Pfundstein is heading up our State Fair activities and should be your primary contact for this. Please consider dates you may be available to volunteer.

As we get back to "normal" after Covid, whatever that may look like, we want to hold field trips. If you have suggestions for subjects/locations, please let Dave Wilhelm or one of the Field Trip Team know your thoughts. One opportunity may be a repeat of Kate Clover's popular Platteville Limestone tour from last fall. Stay tuned for further info.

Many thanks to Dave Wilhelm, our new GSM Liaison Officer, for postings information on online seminars, articles of interest, and activities for members to participate in. A couple of very successful experiences were presentations in March by the Rochester Academy of Science on Fossil Crinoid and Drumlins. We had at least 12 GSM members participating. Dave's postings have provided a wealth of activities for members during the winter isolation months.

Stay healthy, enjoy the Spring, and hope to see you all soon in personal settings as we move forward.

Joe Newberg



GSM President, Joe Newberg

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<u>Visit us on</u> <u>Facebook!</u>



from the GSM archives: Jordan Sandstone sand pit, Mankato Sept, 1945



GSM

Officers: Joe Newberg, President Patrick Pfundstein, Vice President Dave Kelso, Treasurer Dave Kelso, Secretary Board Members: Wolf Bielefeld; Pete Hesse; Frank Janezich; Nancy Jannik; Roxy Knuttila Janezich; John Westgaard Newsletter: Kate Clover; Mark Ryan; Harvey Thorleifson; Rich Lively Programs/Lectures/Labs: Steve Erickson State Fair: vacant Video Library: David Wilhelm Webmaster: Alan Smith Membership: Joanie Furlong Field Trips: David Wilhelm; Outreach: Joel Renner Geological Markers: Rebecca Galkiewicz Lecture Recording: Joe Wright

Web Site: gsmn.org

The Geological Society of Minnesota is a 501(c)3 nonprofit organization.

GSM Mail Address: Send all GSM membership dues, change of address cards, and renewals to: Joanie Furlong, GSM Membership Chair, P.O. Box 141065, Minneapolis, MN 55414-6065

Membership categories and dues:

Student (full time)	\$10
Individual	\$20
Family	\$30
Sustaining	\$50
Supporting	\$100
Guarantor	\$250

Individual and Family memberships can be renewed for 1, 2, or 3 years. Members donating at the Sustaining, Supporting or Guarantor levels will have their names highlighted in the GSM membership directory.

GSM News: The purpose of this newsletter is to inform members and friends of activities of interest to the Geological Society of Minnesota. GSM News is published four times a year during the months of February, May, August and November.

Newsletter contributions welcome:

GSM enthusiasts: Have you seen interesting geology while traveling? If so, please consider sharing your experiences with others through our GSM Newsletter. Write a short article, add a photo or two and send it in. Deadline for submission is the first of the month before the publication date. Send your story to newsletter editor: Kate Clover, <u>kclover@fastmail.fm</u> Thank you in advance.

GSM Board Membership:

The GSM Board consists of members who have a special interest in advancing the goals of the society, including lectures, field trips, and community outreach. The Board currently has ten members, and our bylaws limit terms to four years to encourage turnover, and a change of perspectives and ideas.

The Board meets quarterly, on the second Thursdays of February, May, August, and November, or on a different date if conflicts arise. In-person meetings are from 7-9 PM at the Minnesota Geological Survey at 2609 W. Territorial Rd, St. Paul, MN 55114.

Board meetings are open to all GSM members. If you are a new or long-time member and Board membership is of interest to you, please consider attending a meeting. If you have a topic you would like the Board to consider, please contact Joe Newberg, joenewberg@gmail.com

New GSM Members:

Denise Bielick, Pine Island Bennett Hanson, Falcon Heights Mary Johnson, Minneapolis Michael Lins, New Brighton Deborah Martin, St. Paul Mary Victoria Myslajek, Robbinsdale Michael O'Brien, Forest Lake Kyle Shatzer, Minneapolis Arthur W. Struss, Libertyville, Il

GSM Member Profile Mark Nupen

Yes, indeed I have been a GSM member for many years and absolutely admire and am fascinated with the GSM group! The science and stories including guest questions are always fascinating. Why an interest in GSM? Well, I grew up in the south-central Arizona desert of Casa Grande. In the Sonoran desert and the open land just south is the Papago Indian reservation that has been undisturbed! The geology and landscapes are stunning. Of course, on the desert there isn't a lot of grass, and one can see all of the rocks and landscapes quite well. The rocky cliffs are of different colors and add their own beauty. Even the



mountains rise up to 8000 ft and create 'islands' of unique habitats, much like islands out in the ocean. Baboquivri Peak just southwest of Tucson, is a dramatically impressive piece of geology that is an important religious symbol for the O'odham (Papago) tribe. It is also all part of the Sonoran Desert

Mark Nupen

that stretches from Tucson into Mexico and California. It includes stunning geology, animal and plant habitat--hah, check out the Boojum tree. Again, all part of the geology. A neighbor across the street even had a small hand-dug manganese mine south of town, and there are lots of copper mines around Arizona as well. My brother became a geologist and travelled world-wide, especially South Africa. He described some of the amazing thousands of feet-deep mines there. Another classmate went into mine engineering as well.

Then we bought a cabin just east of Danbury, Wisconsin and became fascinated with the Northwest Sand country in Northwestern Wisconsin. The Namekagon Barrens Wildlife Area is part of that area, and I joined the Friends group. Well the Northwest Sands area is a stretch of sand, 100-600 ft deep, stretching 125 miles from Bayfield to Grantsburg and 2000sq miles. The sand created an amazing ecology of plants and animals unique to that area. Yes, it is all because of the geology; and if you also add some fire to the story, you have the Barrens of Northwestern Wisconsin. Check out <u>www.fnbwa.org</u> for some more of the story. Another of our GSM members is also on that board.

Yes, GSM, I very much admire the leadership and enthusiasm of the board members who create such a great list of speakers and events! I never get bored going to these meetings even on zoom. Thanks board members to the current and 'old' GSM!

Mark Nupen, MD retired pediatrics

NOTES FROM THE PAST

January 1944—MILITARY SECRET—Many Geologists are entitled to be classified as 4 B's (Baldness, Bifocals, Bridgework and Bulge).

GSM – Fall 2021: Lectures and Banquet

Our Program Chair, Steve Erickson has been busy securing speakers for our Fall 2021 lecture series, all of which will be held via Zoom. Here is a teaser of upcoming schedule.

• Larry "Boot" Pierce from the Missouri Geological Survey will speak on *The New Madrid Fault Zone* October 4.

• Lon Abbot, from the University of Colorado, Boulder will present *A Brief Geologic History of Colorado* on October 18.

The Fall Banquet? It is <u>tentatively</u> scheduled for September 20 at the U Garden with Greg Brick discussing his newest book: *Minnesota Underground: A Guide Book to Exploring the Minnesota Underworld*. However, because of COVID-19 restrictions, we don't know if we'll be able to host this gathering.

Look for additional lecture and banquet information in the August 2021 newsletter.

Minnesota State Fair 2021

The State Fair is a **GO!** Or at least it is being planned as a GO.

GSM will have its booth at the State Fair August 26 through Labor Day, September 6. Patrick Pfundstein is coordinating the volunteer sign-up this year and he says, "Watch your email for sign-up opportunities. We will need volunteers."

Volunteering at the Fair is fun. It involves talking with people about the GSM lecture series, answering questions about the table display of Minnesota rocks and minerals, and sharing your enthusiasm for geology with kids of all ages.



The 2018 State Fair Set-up crew included (L to R): Sandy Steffner, Grace and Ted Chura, Dick Bottenberg, Roger Benepe, Dan Japuntich, Ed Steffner, and in front— Patrick Pfundstein.

GSM in the Time of COVID-19

The world has been coping with the COVID-19 pandemic since early 2020, and personally, we have all made many adjustments, especially far fewer face-toface interactions. With the rapid deployment of effective vaccines, we finally seem to be moving to a new normal with fewer restrictions. A while back, our editor Kate Clover asked if I could write an article describing how GSM has coped with the pandemic restrictions; I thought it was a good idea, so here goes.

The most obvious change involved hosting lectures online via Zoom instead of in-person. Back in spring 2020, we had to cancel our final four lectures as we had no alternative. The spring is also when Steve Erickson starts to schedule lecture speakers for the following year. The GSM leadership considered and explored various options, and when it became clear that inperson meetings were not an option, we decided to try online lectures via Zoom. With that in mind, Steve did a great job putting together a schedule that included not only local speakers, but speakers from elsewhere in the region: John Goodge from U of M Duluth, Phillip Kerr from the Iowa Geological Survey and Andrew Breckenridge from UW Superior. Thus, we learned more of what lies below our neighboring states. Randy Strobel set up the Zoom webinars and we are very thankful for his contribution. As we were unfamiliar with Zoom and did not want to fall on our faces with our first lecture, Randy set up a test Zoom lecture solely for GSM members where he presented information on his research about COVID-19. This showed us how we could use Zoom to set up sessions (Zoom provides many options), host lectures, conduct Q&A, etc. Feedback at that test lecture allowed us to fine-tune our process. I think we did a pretty good job adapting. Doing online lectures allowed not only for remote presenters but also for remote attendees. GSM members have attended from North Dakota, Illinois, Florida, and California. And as GSM lectures have always been free and open to the public, we wanted to keep that option for our Zoom lectures, as public education is part of our charter. Thus, we developed a method for non-members to register via the GSM website and receive the Zoom link prior to each lecture. We have gotten numerous attendees from all over the country that way (up to 25 at one lecture!). A few have decided to become GSM members. All told, our lecture attendance numbers have not suffered. This past fall, our average attendance was 69 persons for 7 lectures, including around 4 nonmembers for each lecture. Our spring numbers have been much higher, with 97 attending on average (with a whopping 129 on March 29), including about 13 nonmembers on average. For the entire year, our total attendance was 1164 persons over 14 lectures, for an average attendance of 83. This compares with average attendance of 86 for 2019-2020 and 91 for 2018-2019. Among those who found us online were members of the Rochester [NY] Academy of Science, the Georgia

<u>Mineral Society</u>, the <u>State Microscopical Society of</u> <u>Illinois</u> and the <u>Georgia Microscopical Society</u>. In

particular, the Rochester group invited us to remotely attend two of their lectures on geological subjects (drumlins and fossil crinoids). It has been great to find like-minded organizations with whom to collaborate and share opportunities.

Zoom provides the opportunity to record lectures. We have used that capability for every presenter who has given us permission and have emailed links of these recordings to all GSM members and to non-members who had registered. These are temporary recordings that will expire after a year. Not to fear, at the February Board meeting Patrick Pfundstein volunteered to create the <u>GSM YouTube channel</u>, and he is transferring the recorded lectures to that channel where they will live indefinitely. Check this channel to view lectures you might have missed originally or want to see again. You can either subscribe to this channel or "ring the bell" (click the bell icon) to get notices for new postings. Or just search for "Geological Society of Minnesota" on YouTube.

While the pandemic has greatly reduced in-person opportunities, it has greatly increased online opportunities. GSM members started suggesting opportunities last year, and I decided to share those with all our members. So you have been getting e-mails, sometimes a few a week, informing of webinars and websites. Most have been at least loosely related to geology, but I have included opportunities in other sciences, as our members' interests vary. And some are just for fun—like <u>Chocolate Geodes</u>. Organizations whose presentations have been suggested include U of MN Dept. of Earth and Environmental Sciences, St. Anthony Falls Lab, Freshwater Society, America's Geoheritage Workshop, Cape Perpetua Collaborative (Oregon), Ghost Ranch (New Mexico), Geologists of Jackson Hole (Wyoming), Minnesota Astronomical Society, Nobel Conference, U of MN Headliners, U of MN's Cedar Creek Science Reserve, International Owl Center and FutureLearn. Many of these presentations were recorded, so check out the websites to see what is there. Some of the webinars allow you to see the attendees' names, and I have recognized over a dozen names from GSM at some of these. Thank you for sending in many wonderful suggestions! I and others have learned a lot through them. I won't try to name all who have submitted ideas as I would surely miss some, but keep the suggestions coming as I intend to continue this practice.

BTW, you might have noticed —I now sign many of my e-mails: "GSM Liaison Officer." I started sending the "opportunities" e-mails last year while I was GSM President. When I continued doing that after Joe Newberg became President, I was not sure how to identify myself in this capacity. Looking through the GSM Bylaws, I saw mention of the role "Liaison Officer", a position that had not been filled in my memory. I suggested at the February Board meeting that the title fit what I was doing, so the Board was happy to appoint me to that position.

One other way we communicate interesting websites and opportunities to both our members and the general public is the <u>GSM Facebook page</u>. Theresa Tweet, Mark Ryan and I continue to post many items there (far more than I include in the e-mails). So, I encourage you to check it out occasionally.

Of course, GSM is not just about science; we also like to socialize. We can't really do that at Zoom webinars, but we have used Zoom for this purpose on Mondays when we don't have lectures: Randy has set up GSM "social hours" over Zoom, where we informally chat with each other. Typically, around a dozen or more join these. While no substitute for meeting in person, they have been lots of fun. But I do look forward to meeting again over dinner at <u>U Garden</u>.

Finally, one area where we haven't fared so well during the pandemic is field trips. (Although Kate did lead two great sessions of "Platteville Limestone in the Twin Cities" last fall, and plans to repeat it again this year.) The field trip team—Joe Newberg, Nancy Jannik and I hope to arrange local trips this year, for those who can now gather more safely. We would love to hear your suggestions. Either e-mail me at

<u>dewilhelm53@msn.com</u>, or submit your suggestions through "<u>Ask GSM</u>" on our website.

Dave Wilhelm

The GSM YouTube Channel

A number of lectures have been added to the GSM YouTube channel. These recordings will remain there indefinitely.

• *Mesozoic Vertebrates of Antarctica* by Peter Makovicky (lecture: Nov. 30, 2020)

• *Minnesota's Geologist: the Life of Newton Horace Winchell* by author by Sue Leaf (lecture: Nov. 16, 2020)

• *Geological and Tectonic Evolution of the Transantarctic Mountains* by John Goodge (lecture: Nov. 2, 2020)

• *Minerals are the Future* by Brian Lentz (lecture: Oct. 5, 2020)

• *How Ancient Iron-Rich Rocks Tell the Story of Minnesota's Oceans* by Latisha Brengman (lecture: Sept. 21, 2020)

Look for the following lectures to be up-loaded in May and June 2021:

• *Glacial History of Iowa* by Phillip Kerr (lecture: Dec. 14, 2020)

• *Glaciation and the Great Lakes* by Andrew Breckenridge (lecture: Feb. 1, 2021)

To get notices of new postings, either subscribe to the YouTube channel or "ring the bell" (click the bell icon). Thanks to Patrick Pfundstein for uploading these lectures.

A Platteville Formation Chimney and Wall and WPA History in Mendota, Minnesota

On a number of occasions, I've stopped at the overlook at the Big River Regional Trailhead in Mendota, MN and just taken in the beauty of the vista over the Minnesota River. I've also admired the stone wall constructed from Platteville Formation (limestone). On a late winter walk 2021, I parked at the trailhead and walked the trail back toward Mendota. Through the brush along the trail, I spotted an old chimney with beautiful masonry. Obviously, the remains of a

significant structure, I wondered, from what structure and when was this built? The chimney was the only visible sign of any former building. It turns out, the Works Progress Administration (WPA) Mendota Work Camp #1, dating to the mid-1930s, was located here, next to Highway 13 on the bluff

overlooking the river, about a mile west of the Mendota Bridge. The article, "*The WPA in Dakota County*, *Work Camp No. 1*" published by the Dakota County Historical Society explains the history of the camp which, at the time, had a population of 171.

The site's resources included uncultivated land, timber for fuel, and natural rock for building purposes. The rock resource mentioned

was the hard, blue-colored Platteville Formation (limestone), which camp workers guarried at the east end

of the camp between the parking lot and Highway 13; evidence of the quarry is hard to find today. The article notes that WPA workers quarried huge slabs of limestone for construction projects around the area with the most notable project being the stone wall at the overlook near the camp.

The wall, renovated, repaired and cleaned in 1986 once formed the perimeter of the overlook's parking lot. Today, a new parking lot is located outside of the walled area, and the former parking lot has picnic tables and offers a great view over the river valley. Paved bike and walking trails also go in both direction from this point.

Today, all that remains of the WPA camp is the beautiful Platteville limestone fireplace/chimney which was part of the camp's recreation hall. The Dakota County article notes, "one of the camp's employees





Chimney/fireplace from the WPA's Camp Recreation Hall.



A portion of the WPA stone wall at the Big River Regional Trailhead in Mendota, MN. The MSP airport is located across the river.

expected to be completed by the end of 2021. This included the parking lot and parts of the trail near the trailhead.

References:

http://www.cityofmendota.org/ DCHS WPA CAMPS.PDF https://www.co.dakota.mn.us/parks/parksTrails/ **BigRivers**

Kate Clover

southeastern Jemez

Mountains of New

Mexico, the area was

impacted by intense

episodes of volcanic

Volcanic tephra, ash,

activity about 7

million years ago.

pyroclastic flows,

surge deposits, and

sedimentary layers

(sometimes called "hoodoos"). The top

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The Mendota

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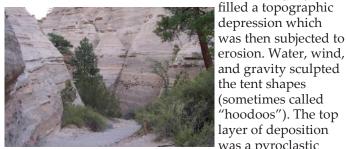
discussed here, is

Kasha-Katuwe Tent Rocks National Monument, New Mexico

Spectacular tent-like structures are the signature rock formations in the Kasha-Katuwe Tent Rocks National Monument. Located on Cochiti Pueblo lands in the



View from the approach road



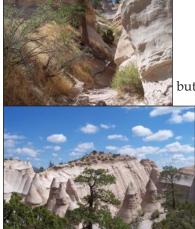
The trail begins

resistant to weathering than the layers below, and this now forms the "hat" on the towers of eroded rock. Visitors may hike through the formations by following a 2-mile long trail that eventually leads to the top where broad, scenic vistas can be seen. Part of the trail is a slot

canyon where the masonry skills to going gets tight, but for the most part the fireplace." Indeed trail is wide enough solid, it still stands and meeting and passing others on later. The rest of the the trail is not a camp was razed problem. The trail ends at a steep climb up to the top – no PLEASE NOTE: steps or handrails Late breaking news: here.

> The walls of the canyon clearly show the layers of the volcanic deposits, and although the surface looks crumbly, attempts to pick a small rock from the surface will not be successful.

The surface is very hard, and thoroughly cemented. Eroding these tent rocks took a very long time. As older tent rocks are worn down, they gradually disappear,



Climb to the top and View from the top

of Albuquerque. The Cochiti collect a small fee for each car, and a parking lot is available at the entrance to the trail. If you go, take lots of water and use sunscreen. Katy Paul

Joseph W. Zalusky, longtime GSM member, and his 1952 descent into the Loop Cave

"We will all no doubt agree that one of the most colorful characters in our Society is our faithful and very genial Treasurer, JOSEPH W. ZALUSKY," wrote Syme (1944). Zalusky held this post for years, ever since the incorporation of the Geological Society of Minnesota (GSM) by Edward P. Burch in 1939.

Back then, GSM met for lectures every Monday night at



Looking up





View on the trail and narrow crawl

out new ones start and begin the process again.

> Kasha-Katuwe means "white cliffs" in Keres or Keresan language which is spoken by the Cochiti people and a few other pueblos. Access to this site is via a gravel road off I-25, about 25 miles north

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the Minneapolis Public Library (now part of the Hennepin County Library (HCL) system). That's most likely where Zalusky, an amateur historian, became aware of GSM. So, it's appropriate that the library's James K. Hosmer Special Collections is the repository for many of Zalusky's papers, which fill several boxes. On their website, the Hennepin County Library states: "Joseph W. Zalusky was a director of the Hennepin History Museum, the author of several articles on Minnesota history, and a lifelong advocate for local history and the preservation of historical sites. Zalusky made this photographic survey of downtown Minneapolis intersections in the early 1940s. These photographs, along with hundreds of books, pamphlets and other historical documents, were donated to the Library by Zalusky's children". They can be viewed at https://digitalcollections.hclib.org/digital/collection/JZalusky. Indeed, his legacy continues to attract attention (Roper 2015).

On another page the website states, "Joseph W. Zalusky served for nearly 25 years in the Minneapolis City Planning Department. Upon retirement in 1946, Zalusky became executive secretary of the Hennepin County Historical Society (now Hennepin History Museum (HHM)). He continued to work with the society until his death on November 7, 1970 at age 89" (<u>https://</u> <u>archives.hclib.org/repositories/2/resources/310</u>).

Zalusky came to geology by way of his interest in history, which is why he is more remembered as an historian than a geologist nowadays. Syme (1944) goes on to say "His large map depicting Earth History throughout its ages is a masterpiece, and we are still hoping he will make it available to our members. His



Joseph W Zalusky (courtesy of the Star Tribune)

time clock arrangement for mineral identification is likewise unusual." During the Covid pandemic, when this article was in preparation, neither HCL nor HHM allowed direct access to their collections. But their respective archivists were willing to undertake research on my behalf. Specifically, I requested Zalusky's geological "masterpiece" so that I could reproduce it as an illustration in this newsletter, but both archivists assured me that after extensive search, nothing like

that was found. I suspect that if it still exists, a Zalusky descendant might have it framed on their wall.

Zalusky's greatest geological adventure was his trip to what he called the "Loop Cave," located deep under the Minneapolis loop (whence the name) on November 19, 1952. He got the call from the city engineer the previous day, making for a worry-filled, sleepless night as he contemplated a harrowing descent. It seems that owing to the short notice there was no way he could announce it as an advertised GSM trip, supposing more people could have been allowed on the trip anyway.

I did not find a write-up or even mention of this remarkable cave trip in the GSM News of the day. Instead, it appears in *Hennepin County History* magazine in 1953, in two successive issues (Zalusky 1953a, 1953b). Here's a brief summary.

Zalusky was lowered down through the manhole directly in front of what was until recently the Schieks nightclub, on 4th Street South, "my tin hat hitting nearly all the iron rings



Greg Brick inspects the hexagonal manhole lid through which Zalusky entered the Loop Cave in 1952 (courtesy W.R. Halliday, 2009)

in the wall of the shaft during the descent" Upon reaching the bottom, 75 feet below street level, the main attraction in the cave was "Little Minnehaha Falls," a ceiling spring, which created a reverberation inside the

cave . "This tour reminded me," he continued somewhat mysteriously, "of Carlsbad Cavern because it was so different." He drew a crude sketch map of

the cave in



The ceiling spring known as "Little Minnehaha Falls" inside the Loop Cave (author's collection, 2000)

relation to the streets above, showing it underlying a half city block (Zalusky 1953a).

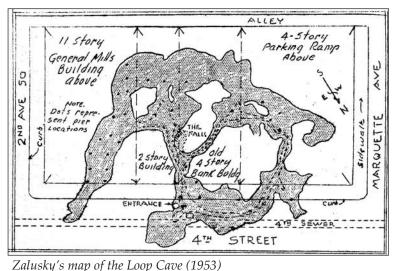
In the second installment, Zalusky (1953b) described the geology, showing the layers logged when the access shaft was dug. He sketched 38 feet of glacial drift, 15 feet of hard clay, atop 16 feet of Platteville Limestone, below which is one foot of Glenwood Shale, and then the St. Peter Sandstone, in which the cave is found. He implies that the cave is natural in origin, rather than a sewer washout, which is the alternative explanation (Brick 2009, pp 199-200).

Strangely enough, the Twin Cities Grotto, a local chapter of the National Speleological Society (NSS), had visited this same cave on October 24, 1952—several weeks before Zalusky's descent (Gebhard 1952). Perhaps a big sewer project was underway in that area, necessitating multiple descents.

More on the Loop Cave (now known as Schieks Cave) can be found in the chapter titled "Lost World" in my 2009 book, Subterranean Twin Cities. For further biographical details about Zalusky, see Thorstenson (1971).

References

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Greg Brick



P.O. Box 141065, Minneapolis, MN 55414-6065

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