CENTRAL
OKLAHOMA
GROTTO
OF THE NATIONAL
SPELEOLOGICAL SOCIETY,INC

C.O.G.nizance

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Google Meet
Friday, March 11, 2020
At 8:00 p.m. central time
Becky will send you an invitation

Stalagmites trace climate history and impact from volcanic eruptions

March 9, 2022
Source University of Göttingen
http://www.sciencedaily.com/releases/2022/03/220309131853.hml

The soils and vegetation of Patagonia's fjord regions form a unique and highly sensitive ecosystem that is closely linked to marine ecosystems, sediment deposition and carbon storage in the ocean. A research team, including the University of Göttingen, has been working on reconstructing the climate history of this region in this extremely wet, rainy and inaccessible fjord and island zone of the Patagonian Andes in southern Chile. Due to its location, the area is a key region for understanding the history of the southern westerly wind belt within the global climate system. The results were published in the journal *Nature Communications Earth & Environment*.

The research, in collaboration with the University of Trier, is based on extensive soil analyses and, above all, the detailed geochemical analyses of a stalagmite that is around 4,500 years old, which was recovered from an almost inaccessible cave. "This stalagmite is the southernmost limestone deposit of its kind ever found," says Professor Gerhard Wörner of the Geoscience Center at Göttingen University. "Its fine and detailed stratification enables us to document the chemical composition of the stalagmite at high temporal resolution." Since the stalagmite formed over a long time from surface waters that seeped into the cave, this geological "archive" makes it possible to reconstruct the climate-driven chemical processes in the peaty soils at the Earth's surface above the cave.

It turns out that the transport of chemical compounds from the peatlands to the fjords in southern Patagonian fjords are particularly closely coupled with natural processes in the delicate soil ecosystems, which react highly sensitively to climate fluctuations and the input of volcanic ash from nearby active volcanoes. "It was a surprise to discover actual remnants of volcanic dust from eruptions of nearby volcanoes in the soil. In fact, tiny volcanic particles were detected embedded in the stalagmite from the cave," Wörner explains. The effect of volcanic depositions can also be documented from geochemical anomalies in the stalagmite -- such as the high presence of sulphur -- and can even be attributed to individual volcanic eruptions by dating the stalagmite layers. These volcanic deposits are of fundamental importance for the chemical processes in the peatlands of Patagonia and have a particularly strong effect under the influence of the extreme precipitation in the region. "These effects range from substantial destruction of vegetation after large eruptions to a possible fertilizing effect on the ocean as a result of nutrients released after smaller eruptions," Wörner adds.

ANNOUNCEMENTS

*No trips planned at the present time.

*Next meeting may be March 11, 2022 on Google Meet. Becky will send out invitations.

WHITE-NOSE SYNDROME DECONTAMINATION PROTOCOL, Oct 2020

This is the latest formal revision of the national decontamination protocol to prevent spread of the fungus that causes white-nose syndrome. This document is the product of a collaborative effort with multiple federal and state agencies and several non-governmental organizations. Go to this website to view the detailed suggestions listed to help stop the spreading of WNS.
https://www.whitenosesyndrome.org/static-page/decontamination-information

Wildlife Health Bulletin 2022-01
National Wildlife Health Center
Jonathan Sleeman, Center Director
January 31, 2022

Winter 2021/2022 Bat Submission Guidelines and Highlights of the 202/2021 White-Nose Syndrome Surveillance Season

Summary

The USGS National Wildlife Health Center has released updated guidance for bat diagnostic submissions for the 2021/2022 white-nose syndrome (WNS) surveillance season. During the 2020/2021 surveillance season, WNS was detected for the first time in Wyoming and Montana, increasing the number of states where WNS has been confirmed to 37. Field testing of several vaccine candidates to prevent WNS in susceptible bat species is ongoing, and field vaccination has proven to be safe in WNS susceptible animals. Updated guidance from the USGS National Wildlife Health Center (NWHC) is now available for bat diagnostic submissions for the 2021/2022 white-nose syndrome (WNS) surveillance season. These guidelines are posted on the NWHC WNS web page and replace all previous NWHC bat submission criteria.

MINUTES

CENTRAL OKLAHOMA GROTTO MEETING, FEBRUARY 11, 2022

In attendance: Becky Hunsinger, meeting facilitator; Sue Bozeman, Duane Del Vecchio, John Talbot, Lil Town, Dale and Carol Town, John Van Dyke, Jon and Kelley Woltz, Steve Beleu

Presiding: His Imperial Majesty Jon Woltz
Start time: 8:00

OLD BUSINESS

1. We clarified that Jon is indeed this year's Emperor. At our prior meeting we had a wee bit of confusion about who our current Emperor is.
2. Duane reported that he has received no update about the upcoming proposed regulation to be published in the *Federal Register* concerning cavers getting the approval of appropriate federal agencies before entering any cave, public or private, containing endangered species. Let me note that as of the day of our meeting nothing had appeared in the *Federal Register* about this proposed regulation; I checked as someone who used to teach this resource and its website.
3. We discussed a possible new COG publication, with Sue leading the conversation. One point of discussion is whether it should appear in paper, online, or both. Those in attendance favored online publication.

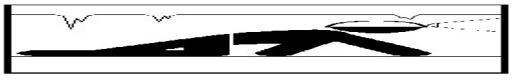
NEW BUSINESS

Sue discussed the completed survey and ongoing mapping of Prospect Cave by Jon. She noted that it is 831 feet long, and also noted the number of hours each caver worked on its survey.

TREASURER'S REPORT

Treasurer Emeritus John Talbot gave his January 2022 report.
A note from me: 5 of our attendees were from Oklahoma; 4 of them were from other states. This is a percentage of 44.4444444% with a Margin of Error of +/- 0 of our members who can attend a virtual meeting such as this who live in other states. If we return to in-person meetings that have no virtual component we will lose this accomplishment of democracy.

Meeting ended 9:03
Report by S. Beleu,
Secretary and Sergeant at Underarms



TREASURER'S REPORT

February 8, 2021 TREASURERS'S REPORT

	INCOME		EXPENSES
Dividends	$	.02	
TOTAL	**$**	**.02**	
12/31/2021			
CASH	$	103.05	
CHECKING	$	561.39	
SAVINGS	$	1,417.64	
CHECKING	$		
TOTAL	**$**	**2,082.08**	

1/14/2022 **PREPARED BY TREASURER JOHN TALBOY NSS #30254**

TRIP REPORTS

SORRY NO TRIP REPORTS BECAUSE THERE HAVEN'T BEEN ANY TRIPS!

POTPOURRI

Dear Colleague in Karst: Below please find a link to the website for a new Oklahoma Geological Survey (OGS) publication: OGS Circular 113, "Evaporite Karst in the Greater Permian Evaporite Basin (GPEB) of Texas, New Mexico, Oklahoma, Kansas, and Colorado." Evaporites underlie a vast region of southwestern United States that is herein named the Greater Permian Evaporite Basin, and both natural and human-induced evaporite-karst features are present in much of the region. The publication is released on-line only, and it is free.

Circular 113 link: https://www.ou.edu/content/dam/ogs/documents/circulars/OGS_C113.pdf

Additionally, one can go to https://www.ou.edu/ogs/ , open "Publications," then open "Circulars," then open "View Circulars by Year," and finally open "2010-present Circulars."

Please feel free to call this to the attention of other colleagues and co-workers that may have an interest in karst.

Ken Johnson Retired Geologist, OGS

Following are excerpts of articles found in this publications I think you'll enjoy.
See the web page for pictures and other articles.
The Editor

Evaporite Karst in the Greater Permian Evaporite Basin (GPEB) of Texas, New Mexico, Oklahoma, Kansas, and Colorado

Kenneth S. Johnson, Lewis Land, and David D. Decker; Editors 2021

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OKLAHOMA AND TEXAS PANHANDLE

247 **Permian Blaine and San Andres Formations of Western Oklahoma and Palo Duro Basin of Texas: Their Correlation and Evaporite Karst** ...Kenneth S. Johnson

279 **Delhi Sinkhole and Watonga Sinkhole Caused by Gypsum Karst in the Permian Blaine Formation of Western Oklahoma** … Kenneth S. Johnson

Page 247-248

Gypsum karst is widespread in the Blaine Formation of Western Oklahoma and north-central Texas: it is best developed where the Blaine consists mainly of thick gypsum beds interbedded with thin shales. Western Oklahoma and north-central Texas are among the best areas in the United States for the study of gypsum karst, including caves, sinkholes, springs, disappearing streams, and karst aquifers. Oklahoma has a total of 201 recorded gypsum caves in the Blaine, with 152 in northwest Oklahoma and 49 in southwest Oklahoma. In just the Palo Duro Basin portion of north-central Texas, the "Blaine of Texas: has a total of 106 recorded gypsum caves. Extensive karst in the gypsum and dolomite of the Blain Formation has produced an important aquifer, where sulfate-rich ground water is produced for irrigation in both southwest Oklahoma and north-central Texas. *(Continued on page 4)*

Excerpt from page 264 from karst publication

Discussions of gypsum caves in the Blaine of western Oklahoma are by Myers and others (1969), S. Bozeman (1987, 2002), Johnson (1989, 1990b, 2003a, 2011, 2018), Bozeman and Bozeman (2002), J. Bozeman (2003), Christenson and others (2003), Miller and others (2003), and Tarhule and others (2003). Most studies of gypsum caves in the Blaine Formation in Oklahoma have been carried out by members of the Central Oklahoma Grotto (COG), chiefly by members John and Sue Bozeman of Oklahoma City. The major outlet for COG research is in 21 volumes of Oklahoma Underground, a journal they publish intermittently (see "Publications/ News" and then "Oklahoma Underground Publications" on their website: http://okcavers.com/). In addition, on the COG website is an interesting movie/slide show on "Western Oklahoma Gypsum Caves" that gives tours and discussions of several major caves, including Alabaster Caverns and D.C. Jester Cave.

Excerpt from page 266 from karst publication

Selman Cave. The Selman Cave System (Fig. 22) became an outdoor living laboratory and field station in 1998 when about 130 ha (325 acres) of land was acquired, through donation and purchase, by the University of Central Oklahoma (UCO) to establish the Selman Living Laboratory (SLL). Located in northwest Oklahoma, about 16 km southwest of the town of Freedom, it has been used for UCO classes and research on ecology, mammalogy, ornithology, plant taxonomy, freshwater biology, entomology, mycology, and herpetology. The website for the SLL is: https://sites.uco.edu/cms/sll/

Geologic data on the Selman Cave System, summarized by Bozeman (2002, 2003), shows that cave development is nearly restricted to the thick Medicine Lodge and Nescatunga Gypsum Beds and the intervening shale. The main passageway consists of wide, high tunnels with a meandering stream underfoot. It contains a breakdown boulder room 18 m tall, and several domes up to 12 m high, along with some passages that require stooping or crawling. With a length of 4,794 m (Table 2), it is the 19th longest gypsum cave in the world and the 3rd longest gypsum cave in the United States (after D.C. Jester Cave [below], and Parks' Ranch Cave in New Mexico); there are more than 25 separate entrances to the cave system.

D.C. Jester Cave. Jester Cave, located in Greer County, southwest Oklahoma (Figs. 22, 25, 26), is the longest gypsum cave in the United States, and also the 8th longest gypsum cave in the world (Table 2). The main passage is 2,413 m long, but its many known side passages are a total of 7,652 m long: thus, the total length of cave system is 10,065 m. This brief discussion is based largely on the comprehensive report by Bozeman (1987), and shorter reports on the geology by Johnson (1989, 1990b, 2003a, 2018).

The main passage is 2,413 m long, but its many known side passages are a total of 7,652 m long:

Almost all parts of the main cave are formed in the 5-m-thick gypsum unit 1 of the Van Vacter Member (Figs. 23E, 25). Instead of the passages being mainly long and straight, they typically are angulate, with sharp bends and some broad, sweeping curves (Fig. 26). Many of the passages are elliptical in cross section, although they are quite variable. The main passage typically is 6–15 m wide and 1.5–6 m high; side passages typically are 1.5–3 m wide and 0.6–3 m high. The alignment of various segments of Jester Cave suggests the cave's flow may be controlled by several sets of joints or fractures; the main segments are oriented between N10ºW and N30ºW, with other cave segments oriented N60ºE, N30ºE, and N60ºW. Karst in the area is extensive, and there are more than 70 separate known entrances to Jester Cave.

Cartoon contributed by Anne's sister in Houston, Mary Beth Coffey

Pennsylvania's Unique Dining Experience 43-Feet Underground

ROBIN O'NEAL SMITH
NOV.7.2021
http://www.travelawaits.com/2716283/ohiopyle-state-park-things-to-do/

The Catacombs restaurant is an upscale eatery 43-feet underground and the most unique eatery I've ever visited. When in the Lancaster/Mount Joy, Pennsylvania area, I wanted to take a tour of the Catacombs. I had read about it and even mentioned it in a few articles, so I wanted to tour it and see what it was like for myself.

Several stories below street level, The Catacombs is in the aging cellars of Bube's Brewery in Mount Joy.

The Brewery itself is a fun place to enjoy excellent food, live music, and a variety of options and events to please the most finicky visitor. But the Catacombs is an enchanting experience you won't want to miss.

Bube's Brewery provided a hosted dinner in the Catacombs and tour during our visit. All opinions are my own.

The History

Alois Bube, a young German immigrant who was a brewing apprentice before coming to America, secured a job at the small brewery in Mount Joy. German-style lager beer was all the rage at the time, and there was enormous ***(Continued on page 5)***

demand. Alois saw an excellent business opportunity and, with a neighbor's financing help, purchased the brewery in 1876.

He expanded Bube's Brewery and added the Victorian Central Hotel to provide lodging for guests and use as his family residence. His excellent reputation as a brewer and businessman helped him build a very successful business. Until one day, tragedy struck, and Mr. Bube died at the age of 57.

Even though his Brewery closed before Prohibition, the wealth he had accumulated made it possible for his family to continue to live on the property for over 40 years. But they did little upkeep to the building.

When the family sold the property, it needed repair, and restoration began in 1968.

After an 84-year break, Bube's started brewing beer once again in 2001.

Today, Bube's Brewery, including the Catacombs, is thought to be the only one of hundreds of breweries from the "lager era" still in usable condition in the United States.

The Experience

When entering Bube's, you are greeted by a host. When visiting the bar area or one of the street-level eating areas, you are escorted to your table. If you have a reservation for the Catacombs, you are led on a pre-meal tour of the historic Brewery. (Others may have a tour upon request.)

During your tour, the guide explains what the various rooms and equipment were used for. In the brewery area, you will find artifacts, including gigantic wooden barrels once used to age the brew. There are also original Bube's beer bottles, antique butter churns, and stoves.

The old brewery was created with a "vertical design." The hot beer was pumped out of the kettle to the top level where it would cool and then ferment in the room below, then down a level for conditioning, and down to the Catacombs for aging.

As you descend into the Catacombs, you are surrounded by stone-lined walls on your way to the unique upscale dining area. An evening here enjoying the tour and the Catacombs is an unforgettable experience.

The Catacombs

When you arrive at the Catacombs, you are 43 feet below the street level and in a series of stone-lined

When you arrive at the Catacombs, you are 43 feet below the street level and in a series of stone-lined vaults.

vaults. The 19th-century cellar nestled beneath the historic brewery provides a unique candlelight atmosphere.

The dimly lit cellars have strings of lights draped across the dining areas in addition to the candles. Stone walls surround you, and some of the protruding stones have candles sitting on them.

It is an intimate, romantic atmosphere with tables elegantly set for two and four people.

Servers were assigned to the Catacomb area. I found it particularly interesting that there were no dumb waiters, and the kitchen was on the street level, so the staff had to go up the stairs to get the food and carry it down 43 feet to Catacombs for each order.

The Menu

The fine dining menu includes a variety of gourmet entrées as well as a few traditional German and American dishes. The menu is written in both German and English. When we visited, our host ordered several appetizers to share. My favorite was roasted asparagus.

I ordered the tasty grilled pork chops with an apple cider vinaigrette glaze served with tender green beans and a baked potato. My husband ordered a seafood pasta entrée that included linguini pasta tossed with lobster tail, sea scallops, shrimp, crab, and mussels in an alfredo sauce that he reported was superb.

We shared a decadent piece of chocolate cake with a hot fudge glaze drizzled on it for dessert.

Dining area at Bube's Brewery

The other areas of Bube's have a shared menu that is different from the fine dining menu in the Catacombs. I've eaten in both the Catacombs and the Bottling Works and both were delicious.

Beer and soft drinks were once bottled in the current Bottling Works restaurant and tavern.

An outdoor drinking garden, the Biergarten, is adjacent to the Bottling Works. The vast original boiler and smokestack used to create steam power for the old brewery sit in the middle of the Biergarten. Meals and drinks are served in the garden under the shade trees.

The original barrel repair room is now known as the Cooper Shed. It is an extension of the Bottling Works restaurant best suited for large parties or groups and provides a quieter atmosphere.

Once the original dining rooms and bar of the Victorian Hotel portion of Bube's Brewery, the Alois is home to special events such as Murder Mystery Dinners and private events.

The Hotel

The Central Hotel, built in the 1880s, was a state-of-the-art lodging facility. The hotel was said to have the first flush toilet in Mount Joy.

The hotel is still open, with eight of the original rooms decorated in a unique theme.

Special Events

Bube's has something going on all the time. Some of the events are its famous Murder Mystery Dinners, karaoke, and Trivia Nights.

Theatrical feasts are often hosted in the Catacombs. The enchanted storybook environment is perfect for the special dinner with live actors creating a memorable evening for attendees.

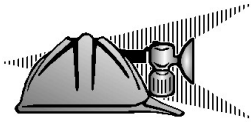
The Brewery and Catacombs are supposedly haunted, and they host ghost tours and paranormal investigations. Ghosthunters have visited Bube's and confirmed there is paranormal activity. When I visited, I didn't see anything spooky, but certainly could understand why it might be haunted.

If a visit to a unique eatery is on your bucket list, Catacombs is perfect. A charming place for a special occasion dinner or a romantic date night, the Catacombs will be one of the most unique eateries you will ever experience.

Pro Tip: There are no elevators. To get to the Catacombs, you must be able to climb up and down steps, and once in the Catacombs, the lighting is dimmed. (remember, your phone has a flashlight to help you read the menu.)

Central Oklahoma Grotto is a non-profit organization and a chapter of the NSS (National Speleological Society), Cave Avenue, Huntsville, AL., 35810. Dedicated to cave conservation and safety, C.O.G. published general information in a monthly newsletter ($6.00/year) and detailed cave surveys and related Speleological items in a yearly publication, *The Oklahoma Underground* ($3-$8/ issue) Membership is by sponsor and is $12 per year for adults, $6 for spouses and students, and $3 if under 18. Central Oklahoma Grotto meets once a month on the second Friday of each month. For information, write Lil Town, 25692 Mosier Circle, Conifer, CO 80433: All submissions to the newsletter should be sent to the editor: Lil Town, 25692 Mosier Circle, Conifer, CO 80433: Telephone: (580)471-1238: E-mail: cavemoose@gmail.com. The deadline for submissions for any particular month's issue is the 20th day of the previous month. If you wish material returned. Please include a SASE with submission. All materials in this newsletter is available for reproduction, provided proper credit is given with the article when you print it. Trade publications are welcomed.
Cave softly and safely! **Website: http://www.okcavers.com**

March 11, 2022
There will be a virtual meeting.
See you online!



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