



CENTRAL OKLAHOMA GROTTTO OF THE NATIONAL SPELEOLOGICAL SOCIETY, INC

C.O.G.nizance

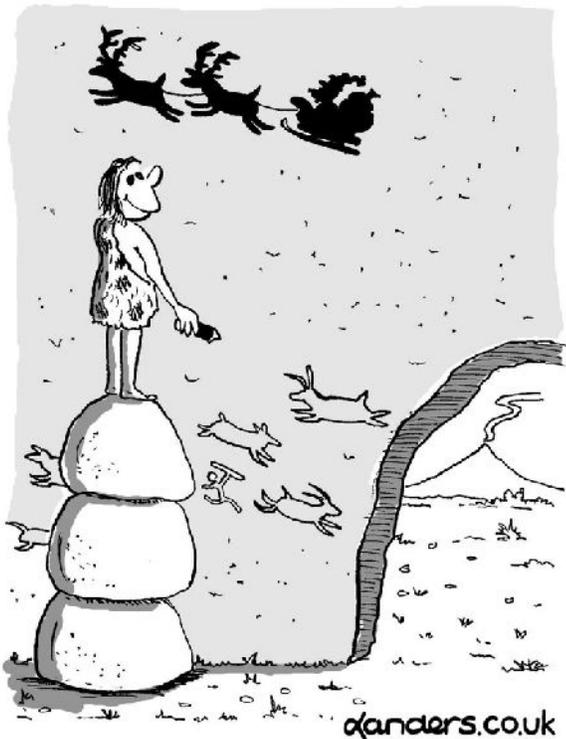
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The December meeting of the Central Oklahoma Grotto will be held Friday, December 11, 2015 at 8:00 p.m. The meeting will be at the home of John and Sue Bozeman.



The December meeting is at the Bozeman's and it's the annual grotto Christmas Party. Be sure to bring a goodie to share!



Past Expiry by Johnny Ancich 941



ANNOUNCEMENTS

*Northwest trips are scheduled the third Saturday of every month. Contact Sue or John Bozeman for details.

*The December meeting of the Central Oklahoma Grotto will be held at the Bozeman's, Friday, Dec, 11, 2015.

National White-Nose Syndrome Decontamination Protocol - Version 06.25.2012

The fungus *Geomyces destructans* (*G.d.*) is the cause of white-nose syndrome (WNS), a disease that has devastated populations of hibernating bats in eastern North America. Since its discovery in New York in 2007, WNS has spread rapidly through northeastern, mid-Atlantic, and Midwest states and eastern Canada. It continues to threaten bat populations across the continent. For the protection of bats and their habitats, comply with all current cave and mine closures, advisories, and regulations on the federal, state, tribal, and private lands you plan to visit. In the absence of cave and mine closure policy, or when planned activities involve close/direct contact with bats, their environments, and/or associated materials, the following decontamination procedures should be implemented to **reduce the risk of transmission** of the fungus to other bats and/or habitats. For the purposes of clarification, the use of the word "decontamination," or any similar root, in this document entails both the 1) cleaning and 2) treatment to disinfect exposed materials.

Under no circumstances should clothing, footwear, or equipment that was used in a confirmed or suspect WNS-affected state or region be used in a WNS-unaffected state or region. Some state/federal regulatory or land management agencies have supplemental documents¹ that provide additional requirements or exemptions on lands under their jurisdiction.

I. TREATMENTS TO REDUCE RISK OF TRANSFERRING *GEOMYCES DESTRUCTANS*2:

Applications/Products: The most universally available option for treatment of submersible gear is:

Submersion in Hot Water: Effective at sustained temperatures 50°C (122°F) for 20 minutes

Secondary or non-submersible treatment options (for a minimum of 10 min.) include:

PRODUCTS: Clorox® (6% HOCl) Bleach : Lysol® IC Quaternary Disinfectant Cleaner; Professional Lysol® Antibacterial All-purpose Clean



MINUTES

CENTRAL OKLAHOMA GROTTTO

Minutes of the meeting of November 13, 2015

Host: the home of Matt Brasher

Attendees: Dale Amlee, Anne Ault, John and Sue Bozeman, Jason and John Talbot, John Van Dyke, Jon and Kelley Woltz, prospective member Ali Brasher (Matt's sister), and The Skillful Ogre

The Honorable Jon Woltz began the meeting at 7:55

OLD BUSINESS

Sue successfully forwarded her request about caves in Mayes County to Bill Puckett.

NEW BUSINESS

Tulsa Community College – Northeast bought an issue of the *Oklahoma Underground* from us. We will raise the price of our postage to mail COG products in the future.

We had our annual "elections" with these predictable results –

Dale Amlee – Chair

Jon Woltz – Vice Chair

John Talbot – Treasurer

Steve Beleu – Secretary and Sergeant at Underarms

Members requested that I tell Lil Town via this monthly report that every COG meeting in 2016 will begin at 8:00 central time. *HEY LIL...*

Ali Brasher joined COG. Most important event of the meeting.

TREASURER'S REPORT

John Talbot gave his report.

We concluded the meeting at 8:32

TREASURER'S REPORTS

INCOME		EXPENSES	
Publication sales	\$ 07.00	Postage	\$ 2.52
Dividends	\$ 00.02		
TOTAL	\$ 07.02	TOTAL	\$ 2.52
CASH ON HAND	\$ 110.57		
CHECKING	\$ 606.74		
SAVINGS	\$ 2,137.47		
TOTAL	\$ 2,854.78		

TOTAL FUNDS AS OF 12/9/2015
PREPARED BY TREASURER JOHN TALBOT NSS #30254RE

TRIP REPORT

Trip Report: Cherylbad Cave
Date: 22 November 2015
Personnel: Dale Amlee, Sue Bozeman, Jon Woltz
Report by Dale Amlee

21 November turned out to be a relative cool day in Oklahoma. The temperature in the morning was below freezing. Sue and I gathered at her house for the trip north, only to discover that her car had a dead battery. We transferred our gear to my car and drove north. Our previous trips into this cave had ended with the discovery of a long, water-filled passage. The cold weather made us hesitant to plunge into the survey of that passage, so we decided to spend time on surface observations, small side passage clean-up surveys, and try to push the long (dry) arm into the large room discovered a few weeks prior. Hopefully we would be able to fill our day with relatively dry work, thus saving the wet stuff for a possible future date with possibly warmer conditions.

We met Jon at the ranch house and geared up for the trip. Since my car could not navigate the rough ranch roads, we all piled into Jon's vehicle for the trip to the wellpad near the cave entrance. At the cave, we spent about 1/2 hour on the surface looking at potential sink / exit locations, based on map measurements that Sue had taken from the Compass program. According to the calculations, our most recent mapping of the NW arm should be bringing us closer to another pair of sinkholes on the surface. We investigated them, and did not see any obvious entrances, but there was one possible opening that was still dubious enough as to make us hesitant to crawl in unless we knew from surveys that we could also get out.

We then entered the cave itself. Our first survey was just to clean up a small dry arm that gradually tapered down to a non-human size, but we were pretty sure it connected to the aforementioned wet passage. Sue was doing book duty, and Jon and I did the measurements. Jon and I crawled in, surveying as far as we could, then left a small rock wrapped in marking string. Nobody had any real marking tape, so we had "borrowed" a small piece of gold glitter-encrusted string found in the ranch house. This lent a very christmas-sy air to the rock. Setting the rock as the final point, this made for the almost

obvious name of "point-settia passage" for this short connecting arm.

We then proceeded to the location where we had ended our last survey trip, at the entrance to a relatively large room at the tip of the NW passage. We had not explored this room before, so after surveying up and into it, Jon and I went off to explore the perimeter and gage the size of the space. It was around 60 feet long, maybe 25 feet wide, about 25 feet high. For gypsum caves, this was a very large room. As we explored, Jon discovered another passage splitting off from the room and heading roughly west-southwest. Jon and I pushed this passage roughly 200 feet? before stopping and returning to where Sue had been doing her book sketching. We tied in with the previous measurements and started surveying down this long arm. We did not finish the arm, but as the clock was approaching our normal quitting time, we decided to call a halt fore the day and return to the surface. We had mapped roughly 121 feet down this side passage, and this added to our earlier measurements to give us about 251 of total passage mapped on this trip.

The trip back started out as uneventful. There is one challenging point in the passage where a person has to essentially try to lay out over some rocks and stretch to make the next piece of dry ground. The ceiling in this area is sort of low, roughly 3 feet, and there is a pool of water about knee deep in this area. If a person is feeling up to it, it is possible to stay out of the water by laying down on one rock and stretching out to bridge over the water.

With some athletic ability it is possible to keep dry. As an alternate, just plonk down in the knee deep water and step through it. Jon and I stretched across. Sue did the stretch, but swore she was not sure it was worth the effort.

Once past this area we stopped for a break in an area where the passage grew more open. Sue had stopped behind us a short distance. I waited while she caught her breath. And waited... and waited. I heard her

(continue on page 4)

making deep sighing sounds, I could see that she was sitting on a rock leaning slightly forward. As time passed I began to worry. After several minutes she said... "Guys, I'm having some difficulty breathing."

Not entirely certain what the specific situation was, Jon and I continued to wait. Sue opened her cave pack and took out some aspirin to take. She continued to sit on the rock and worked on her carbide lamp a bit. After about twenty minutes Jon asked her if she wanted one of us to go for help. That's always a difficult decision to make. First, an obvious point to make, there is no cell phone reception deep inside of a cave. Sitting in the cave as we were, even if one of us left to go for help, we were still about 1/2 hour from the entrance, followed by 15 minutes to the truck at the wellpad, another 10 minutes to the ranch house telephone. Calling for an ambulance from the nearest town would entail another hour wait while the ambulance made it to the road nearest to the wellpad. And even after that, we would still have Sue deep in a cave and rescue personnel on a distant road. Jon and I had both been through basic underground search and rescue training several years ago (thanks, Tom!), and one of the clear lessons learned was that getting rescue personnel into the cave was very very difficult, often very time consuming, and if at all possible it was better if the caver (patient) could be brought out of the cave by any means possible. If Sue could not move under her own power, getting a stretcher into and out of a cave is generally a six-person task due to the challenges posed by moving through a cave. Large boulders to crawl over, under, and between all lay between us and the exit to this cave. The rescue personnel would need specialized cav-

ing equipment (at a minimum headlights, helmets) in order to even try to accomplish this difficult task. Standard stretchers found in ambulances may be physically too large to get into a cave, and for that there are specialized low-profile stretchers made for this specific type of situation. My general feeling was that if we tried to get rescue personnel into the cave to extract Sue, we would not get out before midnight.

After we had been sitting in the cave for about 45 minutes, Sue eventually gathered her gear together, stood up carefully, and said "Ok, let's go." With that, Jon took one of her hands, and we slowly started to the entrance. The narrow passage barely allowed Jon to move alongside Sue, trying to help where he could. Often the passage only allowed single-file movement, so in those areas Sue was on her own to make the steps/ climbs/ crawls as we went to the exit. Eventually, we made it to the surface, and saw that the sun had just gone down. The land was deep in shadow, and our vehicle was still about 1/4 mile away. We slowly made it across the landscape, but the darkness made it difficult because there were often thick thornbushes and dense stands of brush that we could barely see until we were essentially in the middle of it.

Finally, we reached the vehicle at the wellpad. We all climbed in, and headed towards the nearest town to find a hospital.

In final summary, Sue is fine now, it did turn out to be a mild heart attack, and Sue got to ride in a helicopter!



POTPOURRI

Only above-water microbes play a role in cave development

September 2, 2015

<http://www.sciencedaily.com/releases/2015/09/150902140810.htm>

Only the microbes located above the water's surface contribute to the development of hydrogen-sulfide-rich caves, suggests an international team of researchers. Since 2004, researchers have been studying the Frasassi cave system, an actively developing limestone cave system located 1500 feet underground in central Italy.

Limestone caves can form when solid limestone dissolves after coming in contact with certain types of acids. The resulting void is the cave system.

"We knew from previous research that microbes do play a role in cave development," said Jennifer Macalady, associate professor of geosciences, Penn State and co-author of a paper published today (Sept. 2) in *Chemical Geology*. "What we were trying to assess was the extent of that contribution, which would help us understand how caves all over the world, as well as on other worlds, form."

In hydrogen-sulfide-rich caves, microbes "eat" the hydrogen sulfide through a process known as aerobic respiration, Macalady said. The byproduct of this process is

the creation of sulfuric acid, which has the potential to dissolve limestone and contribute to cave growth.

"The main goal of our study was to investigate what happened to hydrogen sulfide in the cave, because when the microbes use hydrogen sulfide for energy, this, along with oxygen, leads to the production of sulfuric acid," said Macalady.

The researchers measured oxygen levels and the amount of chemicals degassing -- changing from liquid to gas state -- throughout several parts of the cave system. The Frasassi system has cave pathways that formed 10,000 to 100,000 years ago as well as currently actively forming cave pathways, allowing the researchers to compare their measurements and identify the factors contributing to active development.

"What we found is that in certain conditions, the hydrogen sulfide in the water escapes as a gas into the air above the water instead of being 'eaten' by microbes below the water surface," said Macalady. "As a result, the underwater microbes only partially burned hydrogen sulfide. Instead of creating a byproduct of sulfuric acid, they created pure sulfur as a byproduct, which is not corrosive to limestone."

(Continued on page 5)

In contrast, the microbes above the water's surface completely "ate" the hydrogen sulfide. This process results in the creation of sulfuric acid, which dissolves limestone and contributes to cave growth.

Macalady says that the results would apply to all limestone caves that are rich in hydrogen sulfide, which includes more well-known caves such as Carlsbad Caverns and Lechuguilla Cave in New Mexico and Kap-Kutan Cave in Turkmenistan.

Deepest cave-dwelling centipede discovered

<http://www.sciencedaily.com/releases/2015/06/150630121703.htm>

An international team of scientists has discovered the deepest underground dwelling centipede. The animal was found by members of the Croatian Biospeleological Society in three caves in Velebit Mts, Croatia. Recorded as deep as -1100 m the new species was named *Geophilus hadesi*, after Hades, the God of the Underworld in the Greek Mythology. The research was published in the open access journal *ZooKeys*.

Lurking in the dark vaults of some of the world's deepest caves, the Hades centipede has also had its name picked to pair another underground-dwelling relative named after Persephone, the queen of the underworld.

Centipedes are carnivores that feed on other invertebrate animals. They are common cave inhabitants but members of this particular order, called geophilomorphs, usually find shelter there only occasionally. Species with an entire life cycle confined to cave environments are exceptionally rare in the group.

In fact, so far the Hades and Persephone centipedes are the only two geophilomorphs that have adapted to live exclusively in caves, thus rightfully bearing the titles of a queen and king of the underworld.

The Hades centipede has 33 pairs of legs, and it ranges between 2.2 to 2.8 centimeters in length.*

Like most cave-dwellers, the newly discovered centipede shows unusual traits, some of which commonly found in cave-dwelling arthropods, including much elongated antennae, trunk segments and leg claws. Equipped with powerful jaws bearing poison glands and long curved claws allowing to grasp and tightly hold its prey, the Hades centipede is among the top predators crawling in the darkness of the cave.

The new species is yet another addition to the astonishing cave critters that live in the Velebit, a mountain that stretches over 145 km in the Croatian Dinaric Karst, which is as a whole considered a hot spot of subterranean diversity. The deepest record comes from the Lukina jama -- Trojama cave system, which is 1431 meters deep and is currently ranked the 15th deepest cave in the world.

Just like Hades who ruled over the kingdom of shadows, the new centipede dwells among an extraordinary number of pallid cavernicolous animals, some known to science and many yet to be discovered.

"When I first saw the animal and its striking appearance, I immediately realized that this is a new, hitherto unnamed and highly adapted to cave environment species. This finding comes to prove once again how little we know about the life in caves, where even in the best prospected areas, one can still find incredible animals" says the lead author Pavel Stoev, Pensoft Publishers and National Museum of Natural History, Sofia.

***taken from another source:**

<https://www.sciencenews.org/article/centipede-discovered-caves-1000-meters-belowground>

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CAVING TERMS BEGINNING WITH 'D'

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| DECORATION | DOLOMITE |
| DEFLATION | DOME |
| DENDRITIC | DRIPLINE |
| DESCENDER | DRIPSTONE |
| DETRITIVORES | |
| DIAGENESIS | |
| DIG | |



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>



*The December meeting will be
At the Bozeman's House
December 11, 2015*



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