



# C.O.G.nizance

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The February meeting will be Friday, February 9, 2018 at 7:30 p.m. at the home of John VanDyke.



**BAT HANGING AROUND IN JESTER!**  
Photos by Duane Del Vecchio



**ANDREWS FIRST TRIP: THIS COULD BE A START TO A SCIENCE PROJECT!**



## MINUTES

### CENTRAL OKLAHOMA GROTTO

Minutes of the meeting of January 12, 2018

Host: the home of Chilimaster John Talbot,  
House of Fine Chili

**Attendees:** Dale Amlee, John and Sue Bozeman, John Talbot, John Van Dyke, Jon and Kelley Woltz, Carol and Dale Town, S. Beleu

The Honorable Quartermaster-General Dale Amlee began the meeting at 8:02.

#### OLD BUSINESS

Sue noted that Jason Vogt, landowner of the caves that we are now beginning to work in, had asked her if any of his caves contain endangered species, about bones and archeological artifacts in them, about the soils in them, etc. We can't answer these questions yet.

#### NEW BUSINESS

- The following Saturday, January 20, was bat count in Greene's Cathedral.
- John Bozeman reported that he had renewed the service contract on the emergency beacon that we use when caving by setting it up outside a cave entrance and activating it.
- Sue passed around the memorial flyer from Jay Rankin's funeral.

#### TREASURER'S REPORT

John Talbot presented reports for November and December. He then brought great sorrow to the hearts of some of us when he told us that our annual membership fees are due.

We concluded the meeting at 8:44



## TRIP REPORT

January 20, 2018

**Bat Count: Greene's Cathedral, Woodward County, OK and Exploration at Prospect Cave**

**Counters: Steve Beleu, Sue Bozeman and Jon Woltz**

We met Jon at the Selman East House/ aka Foreman's House and headed for Greene's. Not much traffic on that ranch road anymore, so we bumped our way along, straddling the center hump lane. We entered Greene's at 11:47. External temperature was 48.

We did not hear much squeaking from the back of the entry hall until we got within 20 feet of it. *Myotis velifer* were squished into the horizontal ledges, usually 3 or 4 deep. Steve took notes while Jon and I divided up the room and started counting.

Air temperature inside declined to 46 and the number of *velifer* rose, but it seemed like there were fewer than last year. The drought in the state was bad this whole past year and the effect of the fires of 2016 seemed to have an impact on all wildlife in the area. Mud temperature past the entry room was 39 and the rock temp was 40.

Only when we got to the largest bat clusters did the temperature rise to 58 and the mud to 51 degrees. Not suggesting that their presence caused the rise; rather, that is where many chose to group. Beyond the large clusters, we started seeing tri-colors (Pips) and there the temperature was 62! The air flow is at a minimum because the back of the cave is truncated at the top of the cave with breakdown. Air flow I s felt going out the floor channel some 25 feet below and temperatures return to the 40's at that point.

The total count for *M. velifer* is 3,808. The total for tricolor/pips is 6. Survey ended at 12:50.

We had planned to continue what remained of our available caving day at Prospect Cave, several miles south. Steve had not had the pleasure of doing much internal exploration in it, so we wanted to show him some of the clean white selenite and popcorn walls in the upper areas and begin the debris removal in the lower water track.

Jon led the way into the cave and zoomed into the lower track while I positioned myself in the middle, ferrying long branches totally denuded of greenery back to Steve, who stuffed it out of our way to the sides and in back of him. When Jon was able to squirrel through to beyond the choke, I moved up and took out the remaining debris while Jon did a bit of reconnoitering ahead of us. He reports he got to walking height passage at times 15 feet high and 5 to 8 feet wide, an occasional belly crawl to continue and then further walking height passage. He built a cairn where he stopped and returned to my plaintive "Hello, Jon!?!?" bleats – Jon's 'few minutes' has the quality of 'infinite variability' to it.

When he returned, I wanted him to locate from his side where our tie-in marker had been placed on the trip prior in the upper passage. So I went high, encouraging Steve to come up and see the pretties. Scooting ahead, Jon and I made contact at the marker site, only to find that 'something' had removed our marker tape! (Probably packrats) I suggested Jon and I track upper and lower passage as I thought maybe the whole cave was just a crawl through breakdown – upper and lower passages not truly separate. Ha. Within 20 feet, I lost the sound of Jon's voice. Gone again.

(Continued on page 4)

So no, the passages are separate as when he finally did return, he said the ceiling and walls are solid – not just carved in fallen breakdown! So, we have separate passages! Good to know.

Steve indicated a desire to 'try the resurgence' and see what's in there. So we left this side for future survey and climbed over the hill to the resurgence. Jon and I explored while Steve stood guard inside the entrance. The cliff face is retreating into the passage and we are left with trailer-sized breakdown blocks. There is lots of scrambling, but most of it is stable. The walls are encrusted with popcorn and gypsum crystals, secondarily deposited. And there is NO graffiti!

Jon went low; I scrambled high and we rejoined where the continuation looked to be a bellycrawl in the water path – currently dry. Time was getting long and we stopped the exploration for the day, hoping to return to do the survey before the spring rains, which we desperately need, make the low areas mucky!

### **Trip Report: Jester Bat Count 2018**

**February 3, 2018**

**Participants: Duane Del Vecchio, Melynda Hickman, Andrew VanDyke, John VanDyke**

**Report by: Duane**

The gang decided to meet at the T-intersection parking lot for Jester at 11 a.m. We had obtained permission to get on the properties, received the WNS swab test kit for testing, and were ready to count noses (or ears divided by two). I had arrived quite early (10:20) and was settling in for a nice nap when John and Andrew pull up at 10:30. They had just spent the night at Jason Talbot's house literally just down the road. This was Andrews first bat count. John has introduced all three of his kiddos to this cave over the years with JT (his oldest) being a regular until this year... alas... you grow up and have to get a job. <grin>

We decided to knock out Train Tunnel before our guest showed up at 11. We made our way into the gully and discovered the entrance almost barred by a giant tree that was broken over it and at least three feet of debris piled up as the tree became a dam for the de-



bris. We went in and still in the twilight zone found a couple of big ears. The floor was extremely muddy as we continued toward the back. At the back we had standing water (something I don't think we've had in decades) ... there was a lot of evidence in lots of the cave of a giant flood since we were last here. But it hadn't rained here in months the locals say. Hummmm..... Overall, Train got us what we came for .... 2 big ears, 5 myotis, 7 pips.

We exited and met our newbie to Jester, Melynda Hickman. Mel works for the Oklahoma Dept. of Wildlife Conservation in the non-game department and is assigned the western half of Oklahoma. One of her primary areas in the western part of the state is bats. Duane works with her with the Selman Bat Watch and the Oklahoma Bat Committee (which COG is a member). As we didn't have many people counting this year, Duane figured we needed another set of eyes to help with the count and invited her out. We signed the release from liability from the landowner and got on our way.

We headed down to the resurgence. The day was sunny with about a 15-20 mph wind from the south... it was cool but not cold. We got to the entrance set up temp and humidity readings and started to look for bats. John had been briefing Andrew on what to look for and the distinct types of bats we'd see but now he actually got to associate what he had been told with what was actually out here. Our first mat of bats was just past the twilight zone. Though we usually find them kinda scrunched into some cracks, this year they outdid themselves with finding every little nook and cranny and wedging themselves into them very snugly. (See webpages for some pictures). Saw bats in areas we haven't in the past because of that behavior. There was water and we couldn't help but get into it early. We finally made it down to what we call Pip Hall. Usually you can get to the side sand/mud bar and crawl and stay out of the water... not this year. One had to wade at least knee deep just to get to the bar. Duane waded all the way out and it was upper thighs and COLD! Started going numb after about 3 minutes. But the room was full of pips (actually Tri-colors) and most of them were dew covered so we all got to see a lot of sparkly jeweled bats. Temp and humidity was up in this room too (as it usually is). We finished and went down the tube that by passes the water. Lots warmer here and even more humid. We found tricolors further down the hall than we usually have in the past. We took a small breather at the rest room (no... not a potty place but a place to rest) then came back and took 10 swab samples of tricolors in this area. There are these small vials that have ionized water in them. You open them and put a 12-inch sterile wood q-tip into it and let it absorb the water. You then find a sleeping bat and roll it over their mouth and nose and over their arms. If they have any of the fungus that causes WNS then it will come off on the swab. The swab is then returned to the vial where it is snapped off at the lid and the vial is sealed with swab contained within.

the vial is recorded with facts such as Solitaire or cluster, Adult, Juvenile, or pup (all of ours are adults), entrance, twilight, inside cave, and facts such as those

*(continued on page 5)*

for the scientists. Mel and John and Andrew took samples while Duane kept the paperwork straight. We then came back past pip hall and the water and into the main passage again and before exiting took 15 samples of myotis. All of that done we finally exited the cave having spent 2 hours inside. We didn't feel like there were as many bats this year here. Our count: Myotis - 3,388, Tri-Color - 29.

We then ate some power bars (or other junk food) and got ready for our final section down the road. Duane gave the entire testing kit and info to Mel to take back where she will put with the other samples from across the state and send it in for testing all in one group. We then piled in the cars and drove the 1/4 or so mile down to the gate for Glade/Homestead entrances.

John went in Glade to take temps and humidity levels while Duane took Mel and Andrew down the dirt slide into the Homestead entrance. We always find a few big ears in this area so we make the extra effort to come down here. We found three big ears among lots of fresh breakdown at the back... there is a lot of light coming in now at the entrance where there used to be just small holes. That done we used the connecting tunnel to meet up with John.

John, meanwhile, was standing under the first mat of bats when CRASH! Right next to him (1 foot away) a section of rock fell to the ground. He looked up and saw a space about 12 inches long in a mat with no bats in it. They were on the ground (about 60 of them) being attached to the rock. We showed up just after that and, futilely, tried to return them back to the rock wall... sadly, if they all don't wake up on their own, some raccoon is going to eat really well! The cave here was much colder than the resurgence. As we counted we also saw more mats. Though it was cold in the cave by the end of the count there were more and more flyers buzzing around. John did find a lot of pips in what we're now calling the new pip hallway on one of the side passages where it was much warmer. The guano room was really thick this year (and goopy!) We trudged through water and mud and got to our exit (Stovepipe) and left

the cave after being in this section for 1 hr. 50 mins. Our count for this area was: Myotis: 15,713, Tri-Color: 28 and BE Brown: 3.

Just as we were exiting the cave my phone was pinging as I was getting a message. It was Dale & Carole Town wondering if we were out of the cave yet and if we were going to Lugi's? Heck yeah! Mel got a text and had to head home and miss opportunity to have the worlds best calzone. John & Andrew went by Jason's and clean up and Duane went on to Blair. We all met at Lugi's and shared Calzones and talked cave talk. Great day and thanks gang for all the help!!

Final Counts: Myotis: 19,106, Tri-Color: 64, BE Brown: 6. Total count is up 3,100 from last year.

Data sheets (counts, temps, humidity readings) and pictures available on our website:

<http://www.okcavers.com/bat%20counts/2018/jester18/index.htm>



Mel coming out of Stove Pipe exit in Jester cave

## POTPOURRI

### Divers Found The World's Largest Underwater Cave, And It's Full of Maya Secrets

The photos are spectacular.

PETER DOCKRILL

<https://www.sciencealert.com/world-s-largest-flooded-cave-discovered-under-mexico-yucatan-sac-actun>

18 JAN 2018

After 10 months of intensive exploration, scientists in Mexico have discovered the world's largest flooded cave system – and it's truly an underwater wonderland.

Spanning an incredible 347 kilometres (216 miles) of subterranean caverns, this branching, sunken labyrinth isn't just a natural spectacle – it's also an important archaeological find that could reveal lost secrets of the ancient Maya civilization.

"This immense cave represents the most important submerged archaeological site in the world," says underwater archaeologist Guillermo de Anda from Mexico's National Institute of Anthropology and History.

"It has more than a hundred archaeological contexts, among which are evidence of the first settlers of America, as well as extinct fauna and, of course, the Maya culture."

Herbert Meyrl/GAM

De Anda heads up the Great Maya Aquifer Project (GAM), a research effort which for decades has explored underwater caves in the Mexican state of Quintana Roo, located on the Caribbean coastline of the Yucatán Peninsula. *(Continued on page 6)*

The region hosts a stunning 358 submerged cave systems, representing some 1,400 kilometres

(870 miles) of flooded freshwater tunnels hidden under the surface.

Jan Arild Aaserud/GAM

Amongst this sprawling network, a new leader emerged last week. Called the Sac Actun System, this gargantuan passage is so big it was actually thought to be two different cave systems.

Before now, another system called Dos Ojos ('two eyes') spanning 93 kilometres (57.8 miles) was thought to be distinct from Sac Actun, but an exhaustive 10 months of underwater probing proved the two were actually one giant continuous cavity.

"We came really close a few times. On a couple of occasions, we were a metre from making a connection between the two large cave systems," GAM exploration director Robert Schmittner told Mexican newspaper *El Pais*.

"It was like trying to follow the veins within a body. It was a labyrinth of paths that sometimes came together and sometimes separated. We had to be very careful."

That effort paid off, and under the rules of caving, Sac Actun now absorbs Dos Ojos (and its former length), meaning at 347 kilometres long Sac Actun is now the world's largest known underwater cave – beating out the former frontrunner, the Ox Bel Ha System, also in Quintana Roo, which stretches for 270 kilometres.

But the search isn't over yet. Sac Actun stands to grow even larger, with the researchers saying it could be connected to three other underwater cave systems – provided further dives can show the caverns do indeed link up.

Herbert Meyrl/GAM

Those dives won't just shed light on how deep the fish hole goes, either.

As footage in the researchers' video and photos show – untold volumes of preserved Maya artefacts and human remains are just waiting to be discovered and analysed from within this unprecedented cave system.

Ultimately, the scientific implications could be just as massive as the cave itself.

"We've recorded more than 100 archaeological elements: the remains of extinct fauna, early humans, Maya archaeology, ceramics, and Maya graves," de Anda told the Mexican media.

"It's a tunnel of time that transports you to a place 10,000 to 12,000 years ago."



**EDITOR: BE SURE TO GO TO THE WEBSITE AND SEE SOME OUTSTANDING PHOTOS!**

**Student deciphers 'cave art': 'Stone age art' in Upper Franconian**

**cave not an archaeological sensation after all**

<https://www.sciencedaily.com/releases/2016/05/160512130201.htm>

May 12, 2016

University of Erlangen-Nuremberg

One of the caverns in the 75-metre long cave is full of spherical deposits of minerals known as cave clouds that form on rocks in a similar way to stalactites and stalagmites. In 2005, cave researchers discovered a large number of lines that looked like they could have been made by humans on the rock-hard surface of these cave clouds. An archaeologist studied these lines several years later and published his interpretation of them in a preliminary report, in which he said that the between 14,000 and 16,000 year-old lines were made by humans and probably depicted a phallus and abstract female figures.

Two new explorations produced clear results

'The preliminary report required further scientific investigation,' says Julia Blumenröther. Together with her project partner from the Neanderthal Museum in Mettmann and with support from the Bavarian State Office for the Preservation of Historical Monuments, she examined 138 lines that were presumed to have been made by humans over the course of two explorations. 'If these lines were made by humans, there would be clear evidence that Stone Age tools were used, as well as similar depictions in other locations,' explains PD Dr. Andreas Pastoors, an expert on Stone Age art from the Neanderthal museum.

Julia Blumenröther, who was a student at the time she conducted her research, used a wide range of archaeological methods to document and analyse the lines in the Upper Franconian cave. She also used new technologies such as digital microscopy and structure-light 3D scans to examine the depth and shape of the lines. The young researcher compared the digital images showing cross-sections and the course of the lines with carved lines in other examples of cave art, as well as with lines created in the laboratory. To do so she had lines carved into samples of the rock taken from the cave using specially designed engraving tools.

A detailed examination led to the conclusion that humans most likely did not play a role in creating the lines in the Mäanderhöhle cave. 'The scientific analysis showed that the courses and cross-sections of all of the lines contradict the hypothesis that they were carved by humans using a hard, sharp object. Furthermore, none of the 138 lines depict any kind of known Stone Age motif,' Julia Blumenröther says. 'The Mäanderhöhle with its cave clouds is certainly of great interest for cave research, but it cannot be regarded as containing the oldest Stone Age cave art in Germany,' she concludes.



**Extreme sensitivity to ultraviolet light in the fungal pathogen**

**causing white-nose syndrome of bats**

Jonathan M. Palmer, Kevin P. Drees, Jeffrey T.

Foster & Daniel L. Lindner

Nature Communications volume 9, Article

number: 35 (2018)

doi:10.1038/s41467-017-02441-z

January 2, 2018

Bat white-nose syndrome (WNS), caused by the fungal pathogen *Pseudogymnoascus destructans*, has decimated North American hibernating bats since its emergence in 2006. Here, we utilize comparative genomics to examine the evolutionary history of this pathogen in comparison to six closely related nonpathogenic species. *P. destructans* displays a large reduction in carbohydrate-utilizing enzymes (CAZymes) and in the predicted secretome (~50%), and an increase in lineage-specific genes. The pathogen has lost a key enzyme, UVE1, in the alternate excision repair (AER) pathway, which is known to contribute to repair of DNA lesions induced by ultraviolet (UV) light. Consistent with a nonfunctional AER pathway, *P. destructans* is extremely sensitive to UV light, as well as the DNA alkylating agent methyl methanesulfonate (MMS). The differential susceptibility of *P. destructans* to UV light in comparison to other hibernacula-inhabiting fungi represents a potential "Achilles' heel" of *P. destructans* that might be exploited for treatment of bats with WNS.

### Jester Bat Count 2018 Totals

Myotis	Tri-Color	Big Ear Brown	Totals
19,106	64	6	19,176

### Greens Cathedral 2018 Totals

Myotis	Tri-Color	Big Ear Brown	Totals
3,808	6	0	3,814



Great Onyx Cave  
Hellhole  
Horse Lava Tube System

Howe Caverns  
Illinois Caverns  
Indian Echo Caverns  
Inner Space Caverns

#### NAMES OF MORE UNITED STATES CAVES

L	S	N	R	E	V	A	C	E	L	L	I	V	N	I	L	P	K	S	U
E	E	R	I	Y	L	C	V	I	C	V	E	D	I	S	G	A	L	M	I
V	P	W	Y	N	R	O	Z	I	K	T	K	O	N	G	R	V	E	L	N
A	G	J	I	L	N	E	H	A	A	W	U	R	R	T	V	T	S	A	D
C	S	L	W	S	N	E	D	L	Z	I	E	H	C	C	S	N	E	V	I
A	N	U	O	R	A	O	R	O	L	V	G	H	M	Y	R	L	V	A	A
L	R	R	F	C	F	N	V	S	A	E	N	P	S	E	J	E	A	R	N
L	E	A	Z	G	K	D	D	C	P	E	H	E	V	F	E	H	C	I	E
I	V	Y	C	K	P	P	E	C	R	A	B	A	K	N	W	M	X	V	C
U	A	C	P	P	N	W	O	C	L	U	C	A	L	J	E	A	Y	E	H
G	C	A	E	H	O	G	A	R	T	A	Z	E	R	K	L	N	N	R	O
U	D	V	F	H	A	V	R	A	T	U	R	H	C	R	C	C	O	C	C
H	L	E	G	V	E	X	V	S	M	C	T	K	B	A	A	A	T	A	A
C	R	R	D	R	P	A	A	U	Q	D	A	V	C	U	V	V	A	V	V
E	O	N	N	J	L	H	R	X	F	Z	L	V	U	A	E	E	E	E	E
L	W	S	O	E	S	A	Y	G	Y	D	N	E	E	V	V	S	R	X	R
K	T	V	S	E	C	P	R	N	W	N	L	P	O	O	F	E	G	N	N
F	S	R	K	A	S	A	L	A	U	R	E	L	C	A	V	E	R	N	S
A	O	A	V	B	I	L	L	I	N	O	I	S	C	A	V	E	R	N	S
H	L	E	Y	F	A	L	O	S	T	R	I	V	E	R	C	A	V	E	S

Jewel Cave  
Kartchner Caverns  
Kazumura Cave  
Lake Shasta Caverns  
Laurel Caverns  
Lava Beds National Monument  
Lava River Cave  
Lechuguilla Cave  
Lehman Caves  
Lewis and Clark Caverns  
Linville Caverns  
Lockport Cave  
Lookout Mountain Caverns  
Lost River Cave  
Lost World Caverns  
Luray Caverns

**TWO OF THE CAVES  
ARE NOT  
IN THE PUZZLE**

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: cave-moose@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 February meeting will b***  
At the home of John VanDyke  
Friday, February 9, 2018



**Central Oklahoma Grotto  
Bat Counting Experts**  
(along with other cave critters)  
2119 Holly Oaks Lane #283  
Weatherford, TX 76087