CENTRAL
OKLAHOMA
GROTTO
OF THE NATIONAL
SPELEOLOGICAL SOCIETY,INC

C.O.G.nizance

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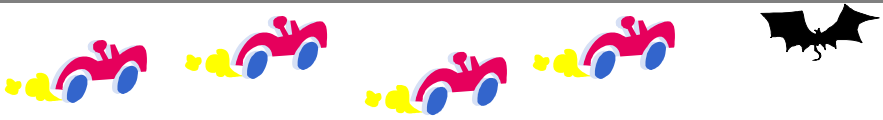


The January meeting of the
Central Oklahoma Grotto will be held at 7:30, Friday,
February 13, 2005, at the home of John Talbot.

Happy New Year!

ANNOUNCEMENTS

*Northwest trips are scheduled the third Saturday of every month. Contract Sue or John Bozeman for details.
*Southwest trips are scheduled the first Saturday of every month. Contact Lil Town for details.

*The 7:30 January meeting will be at John Talbot's, house. This will be the first meeting of the new year! Plans will be made for the February bat count.

MINUTES

Here are the November minutes. There weren't any minutes taken at the Christmas party that was at the Bozeman's house in lieu of a December meeting. Sorry if you weren't able to make it, a good time was had by all. Thanks again for your hospitality, Sue and John!

CENTRAL OKLAHOMA GROTTO
Minutes of the November 12, 2004 meeting

Members present: Nicole and Roy Diehl; Cassandra Diehl; Mark Miller; John Talbot: John VanDyke; Sue Bozeman; John Bozeman; Jon Woltz; 717 Town; Anne Ault.
Old Business:
C.O.G. needs to finish Cattle Cave.
Submissions to the UNDERGROUND are needed as of yesterday.
New Business:
Ways to recruit new members were discussed.
Treasurer's Report was given by John Talbot.
The 2006 Christmas Party will again be hosted by the Bozeman Team. We are most grateful to them for this gift of fun, food and camaraderie.
Elections were held for the 2006 C.O.G. officers. The 2006 slate of officers is as follows:
Chairman: Roy Diehl
Vice Chairman: Jon Woltz
Recording Secretary: Steve Beleu
Treasurer: John Talbot
Newsletter Editor: 717 Town
Many thanks to Jon Woltz and Duane DelVecchio for their most valuable and appreciated assistance with the newsletter.
The meeting began at 8:32 PM and ended at 9:17 PM.
Excellent, if deadly pepper hot, refreshments were provided by the Diehl family.

TREASURER'S REPORTS

INCOME		**EXPENSES**
DIVIDEND	$ 0.11	
CARBIDE SALES	$ 2.00	
DUES	$ 102.00	
TOTALS	**$ 104.11**	
CASH ON HAND	$ 82.92	PREPARED BY TREASURER
CHECKING	$ 587.04	JOHN TALBOT
SAVINGS	$ 2,607.42	

TOTAL FUNDS AS OF 12/7/05 $ 3,277.38

TRIP REPORTS

Cave: Greene's Cathedral
Date: December 17, 2005
Participants: Steve Beleu, Sue Bozeman, Roy Diehl, Jon Woltz
Report by Sue

The number of participants dwindled throughout the week. Phone call and emails came pouring in with declining indications rampant and incredulous inquiries apace.

"Have you SEEN the weather forecast? It could be a BLIZZARD out there!"

Yes, that's true, and yet if you look at the actual weather map, it could just be an unpleasant spit of snow or a tad of sleet. Quite often the area around Freedom just does not get much in the way of precipitation while the rest of the area floods.

Saturday dawned frosty and dreary. Jon had agreed to meet us at the ranch guest house at roughly 10:30; Roy and Steve have trooped in to the Bozeman home, willing to give it a go. We packed up the Bozemobile and headed out. Snow flurries started before Kingfisher and got heavier the farther west we drove. Not looking good, but we continued. The flurries stopped before we hit Seiling, although evidence of snow remained on the fields and dirt side roads. By the time we got to the guest house, weather was relegated to a non-issue. The trip continued smoothly and we were all glad to have made the 'correct' decision.

Greene's Whitetail entrance had been flooded the last time we'd been there. Our carefully scooped out dirt track had filled in again, but with easy fill and debris this time. Jon did a bit of scoping and with a flat piece of rock began scooping his way through in a modified breaststroke. He turned around and helped scoop a larger, deeper trough for the manly man to follow and then I went on through the low spot and turned around, calling for Steve to come on down from the high hot house dome and join in the fun.

Barrel-chested Steve started through, dug some at the tight spot, and pushed dirt left, right, back and ahead. I hauled the 'ahead' part off to a free space and then got Steve's pack. Soon, we were able to call for slim-boy Roy, who had a cruise-through, and joined us in the Porcupine room, absent the porcupine.

From there, it is a half hour crawl and walk to the last survey point in this arm. The starting point is on a sandbar where a watery and very muddy side arm joins the main passage. The tape team of Jon and Steve headed into the side passage, loving every minute of the 50 degree water on their hands and knees. Roy would pop in after tape readings were complete and do the necessaries with the compass.

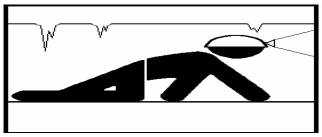
This lower passage had captured the current inflow water from an upper, parallel passage that was popcorn covered and vertical. When Jon and Steve came to a halt because of a sump, Roy and I pursued the upper lead. The passage was only wide enough for sideways progress, but about 4 feet tall. Catching clothing on the dry popcorn at every move, Roy pushed the passage in a strenuous series of maneuvers that looked downright hairy! We estimated the distance of the dry upper passage, which had several connections to the guys in the lower passage, and took a compass reading. Roy considered the place way too small to survey safely and surely inaccessible to Steve, so I drew in the details and we all retreated to the main passage.

We rested for a bit and then began the slog into the watery crawl. At this point, the passage is 8 ft. wide, but only 15 inches tall. You have a choice of rolling over rocks in the water or clinging to soupy, sandy muds. We only did two shots for less than 20 feet total, when Jon announced that we'd be immersing if we went further. Complete immersion -- in winter -- to survey? Hmm. Doesn't seem smart since we were NOT in water gear enough for THAT purpose. We called a halt to the survey and Roy played 'go look'.

What Roy found was that after a 6-foot ear-in-the-water stint, one got to a "Lil Room" -- namely, a slight rise in the ceiling that allowed you to get your chest out of the water. Ahead, however, was breakdown that would require reconnoitering. It was not going to be easy finding one's way through this, especially at the pace of a survey with gear in hand. "Another day," we all agreed.

It took us 30 minutes to boogie out of there into the chill winter air. No more snow had fallen, so the ride home would not be bad. We cleaned up at the guest house and then went over to share some homemade cookies and hot cider that Betty had prepared for us as a Christmas repast. We all talked for a bit, I talked with Barbara, and Roy showed Betty how to Google for information on the internet -- our gift to her for Christmas.

The ride home was on wet, but not ice-slick, roads and uneventful. Glad we went, even if we didn't accomplish much in the way of survey. We now know that we should do other areas until the summer heat and perhaps pursue future surveys from the Resurgence upstream rather than continue from the Whitetail section.



POTPOURRI

Cave salamanders find bats make tasty treats

By Karen Klinka, Staff Writer
Copied from the Dec. 5, 2005 *Daily Oklahoman*
Page 1A-2A

FOR Jim Stout, donning a wet suit to stand in chest-deep, frigid water inside a dark, bat-filled cave is just as good as playing golf. Stout, supervisor of the Herpetarium at the Oklahoma City Zoo, said the countless weekends he and colleague Dante Fenolio spent in an isolated cave in northeast Oklahoma during the past two years has resulted in the publication of a scientific article in one of the world's leading scholarly journals, the Proceedings of the Royal Society of London: Biological Sciences.

The paper deals with Fenolio's discovery that a rare species of blind, cave-dwelling grotto salamander has switched from its customary carnivorous diet of bugs and shrimp to eating nutritious bat guano, Stout said in a recent interview.

For years, cave biologists thought that bat droppings were the food supply for the fungus, small shrimp and insects living in the cave, and that those creatures were what the predatory salamanders ate, Stout said.

"Because bats don't fully digest their food, their guano was pretty nutritious, and actually had more calories than the tiny shrimp," Stout said. "In effect, by eating the bat droppings, the salamanders have cut out the middle man."

The finding is the first report of "poop-eating" among salamanders or any amphibian, Stout said.

At the time of the study, Fenolio, an expert in salamanders, was working on his master's degree at the University of Oklahoma in Norman, Stout said.

Fenolio is now at the University of Miami, Fla., where he is working on his doctorate.

In addition to Stout, Fenolio's co-authors on the journal article are G.O. Graening, a cave biologist with the Nature Conservancy in Arkansas, and Bret A. Collier of Texas A&M University's department of wildlife and fisheries sciences in College Station, Texas.

Stout said the group's original mission was a two-year population ecology study of a federally protected cave in Delaware County.

The cave research made a nice change from his "day job" working with captive animals at the zoo, Stout said.

"For me, studying and working with reptiles and amphibians is as good as playing golf," he said. "It's an enjoyable pastime."

Stout said about 15,000 grey bats live in the cave, from May to October.

"Except for the bats, the cave is a pretty sterile environment, and the grotto salamander population was larger than we thought the cave could support," Stout said. "Things didn't add up at first."

The researchers also noticed a significant drop in the grotto salamander population when the migrating bats were not there.

"We suspect when the bats are gone, the salamanders either move to find another food source, or they're staying there and eating something else that we don't know about, or maybe they just don't feed for those bat-free months," Stout said.

Stout said the study group tested the bat guano to determine its nutritional content.

"I'm really a snake guy, and I learned more about bats than I ever wanted to know," he said.

For comparison purposes, the researchers also tested the nutritional content of the tiny fresh-water shrimp from the cave and Big Mac burgers from McDonald's, Stout said.

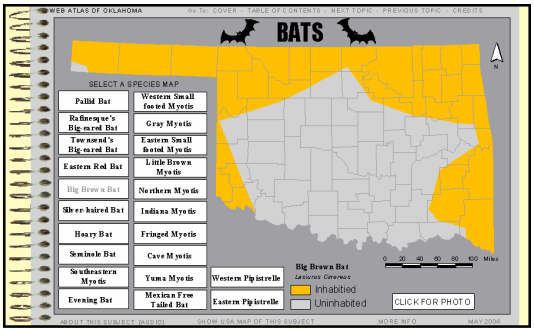
The nutritional tests showed the bat droppings contained 54 percent protein, compared with 44 percent for the shrimp and 23 percent for the Big Mac.

Fat content was 1 percent for the guano, 8 percent for the shrimp and 33 percent for the Big Mac.

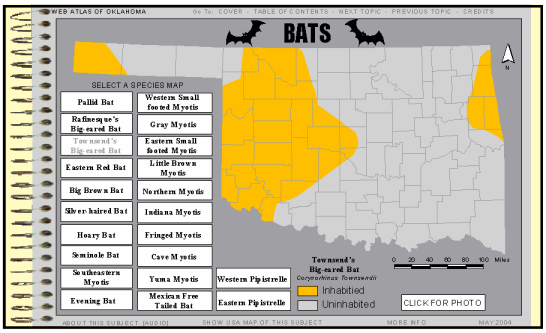
"For the record, the guys who did the nutrition testing ate what was left of the Big Macs, and they didn't eat the bat guano," Stout said.

Oklahoma Bat Populations

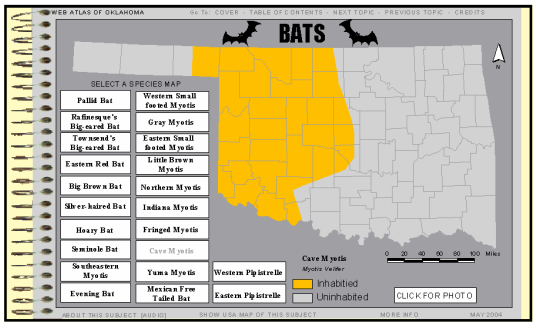
Steve found the following NATIONAL GEOGRAPHIC SOCIETY site on the internet that shows the location of different bat populations in Oklahoma. I've printed the maps of the species we count at bat count and thought it was interesting where their main areas are located. This site was developed and maintained through the NATIONAL GEOGRAPHIC SOCIETY 'S OKLAHOMA GEOGRAPHY EDUCATION FUND, OKLAHOMA NASA SPACE GRANT CONSORTIUM, AND EAST CENTRAL UNIVERSITY. Its web address is: http://www.okatlas.org/okatlas/biotic/bats/western-pipistrelle.htm



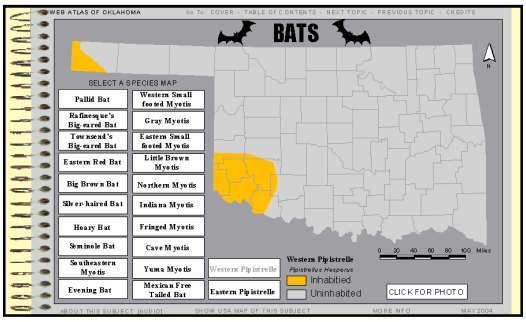
The dark gray (or yellow) area shows the location of the big brown bat.



The dark gray (or yellow) area shows the location of the townsends-big-eared bat.



The dark gray (or yellow) area shows the location of the cave-myotis.



The dark gray (or yellow) area shows the location of the western-pipistrelle.

Alabaster Cavern Entrance Roof Collapse, Woodward, County, Oklahoma

Written by Stanley T. Krukowski
Copied from Oklahoma Geology Notes
V 65, no. 3, Fall 2005: page 70

During the weekend of December 25, 2004, a portion of the rock ledge above the entrance to Alabaster Cavern collapsed into the sink that formed part of the cave entrance (cover photo). Figure 1 shows the entrance as it appeared before the roof of the cave entrance collapsed.

The entrance to Alabaster Cavern is about 60 ft wide and about 11.5 ft high towards the center of the entrance (Fig. 1). The roof collapse occurred across the entire width of the entrance, and the resulting debris pile filled it to just over half its height (Fig. 2). The debris contained particles ranging in size to about 13 ft in length and about 5 ft wide. The largest amount of material appeared to have fallen from the center of the ledge.

Damage to the entrance includes: (1) the rock ledge or overhang directly above the paved concrete entrance collapsed and impaired entry into the cavern; (2) the cast-iron railing at the cavern entrance was crushed; (3) loose blocks of gypsum rock in the remaining rock ledge of the Nescatunga Gypsum at the cave entrance appeared unstable; and (4) loose rock and soil debris draped the sides of the sink at the cave entrance.

In the cover photo and Figure 2, soil material is observed on top of the debris pile. The reasons for this are (1) the block of gypsum rock and soil directly above the entrance collapsed as one unit; (2) the block of collapse debris did not move far, preventing the soil and rock from mixing; or (3) most soil movement occurred after the rock ledge collapsed.

(Continued on page 6)

Figure 3 shows portions of the fracture surface at the rock ledge after the collapse. Mud, soil, and organic material are present along the fracture surfaces. Observation of the newly formed rock ledge provided little evidence of freshly broken rock surfaces, indicating failure most likely occurred along preexisting fractures.

According to Alabaster Caverns State Park officials, the area had recently received a high amount of precipitation beforehand. Rain water or snow and ice melt percolated into vertical and near-vertical fractures in the Nescatunga. Mud, soil, and organic material absorbed and retained a good deal of the moisture. Northern Oklahoma experienced sub-freezing temperatures at the time the collapse occurred. When water in the fractures froze, it expanded causing frost wedging of the gypsum blocks above the cave entrance. This frost wedging probably was responsible for the rock ledge collapse. Figure 4 shows that icicles had formed below some of the rock ledge fractures where water had percolated through them.

The Nescatunga Gypsum at the cavern entrance also has bedding plane fractures, and one small-scale normal fault with an almost imperceptible amount of movement; but neither of these apparently contributed to the collapse of the rock ledge.

On December 26, 2004, the magnitude 9.0 Sumatra-Andaman Islands Earthquake occurred at 00:58:53 UTC (Coordinated Universal Time). There is no evidence to link the cavern entrance collapse with the earthquake. The quake was too distant and shock waves too diminished in Oklahoma to have any effect. The rock ledge failure and earthquake occurrence are only coincidental. Local circumstances associated with freeze-thaw phenomena were the major cause for the rock ledge collapse.

Editor's Note: Photos couldn't be reproduced for this publication. Photographs may be seen in a copy of the *Oklahoma Geology Notes*.

Meramec Caverns, Stanton MO

Copied from the National Cave Association Website at: http://cavern.com/

Beneath the fertile rolling hills of the Meramec Valley, lies a complex of mineral formations and color as rare and unique as they are beautiful. These jewels of nature which took thousands of years to grow, are preserved in the spectacular sights of Meramec Caverns.

Guided tours by trained rangers are conducted along well-lighted walkways. All cavern facilities are accessible to the disabled. Learn how Mother Nature built an ancient limestone "Wine Table" and an entire 7-story mansion... all underground. On tour you will see both the rarest and largest cave formations in the world.

Meramec Caverns is the largest commercial cave in the state of Missouri. Missouri is also known as the Cave state, hosting home to more than 6,000 surveyed caves. Meramec Caverns is open year round and offers a fun, affordable vacation for all its visitors. The well-trained rangers can accommodate groups of any size.

Nestled agelessly among the lush foothills of Missouri's rolling Ozark's, these magnificent caverns chronicle over 400-million years of history including: The formation of caves and stalactites, fossils and limestone, Indians of Missouri, European miners and explorers, dramas of the Civil War, train robberies and great escapes, ballroom dances around the 1900's, the Great Depression, World War II, Hollywood movies, and the list goes on.

The history of Meramec Caverns is rich with the treasures of time. Going back through the centuries, local tribes of Indians used the cave as shelter. Later in the 1700's, a French miner, Jacques Renault, founded one of the Cavern's greatest natural resources, saltpeter. This substance was used exclusively for the manufacture of gunpowder.

During the Civil War, a Federal powder mill in the cave was blown up by Confederate guerrillas of whom Jesse James was a member. Local legend also says that the cave was used as a station on the "Underground Railroad" to hide escaping slaves. In the early 1870's, Jesse James and his band returned to the Cavern on numerous occasions because it afforded a complete hideout for men and horses after train and bank robberies.

In 1933, Lester B. Dill, noted caveologist, discovered the seven upper levels of the Caverns. Further exploration revealed 26 miles of underground passages. Meramec Caverns was opened to the public in 1935 as a tourist attraction.

A well-trained ranger takes you along a one mile tour. Tours last one hour and twenty minutes and leave every 20-30 minutes. The tour is accessible to the disabled and features concrete walkways and dual steel hand railings for your safety and convenience. The tour begins in the huge ballroom and ends at the magnificent stage curtains with a light and sound show.

Directions to Meramec Caverns: I-44 West, Exit 230 Stanton Missouri 1-800-676-6105

Gypsum Caving Bagatelles – 6

By Steve Beleu

$CaSO_4\ 2H_2O = Ca^{2+} + SO_4^{2-} + 2H_2$

Without this process that dissolves gypsum
We'd go caving and find only erosion,
Nothing to crawl into through water, through mud,
Over gravel, over quills and mesquite and cactus buds

That we notice only after we're already impaled
And curses to our fellow cavers we've yelled
As our introduction and warning to a new cave.
Without gypsum dissolution this much fun we can't have!

So remember this formula well, for we gypsum cavers
Salivate when we find a sinkhole that opens into new wonders
That we push ourselves into and crawl and dig through
Even if we exit wet and mud-encased and frozen blue.

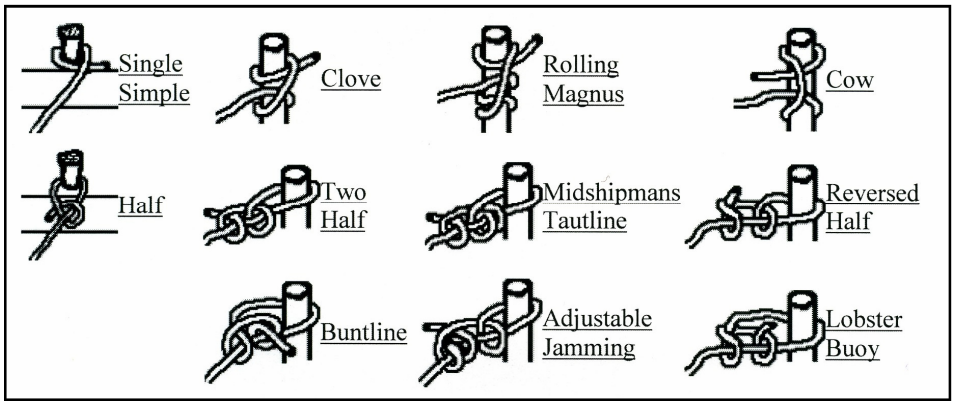
"You found a new sinkhole? Let's go!" And we do!

As I pondered what else to put in to fill space, I remembered that we had talked about knots at one time or another. With this in mind, I found the website Roper's Knot Page at http:www.realknots.com and decided to copy different knots when space allowed. There are many categories of knots, but I choose hitches, the different kinds are listed below.

'Elementary' Hitches

Knots to tie a rope on...something.

In this table you find the most elementary hitches. The hitches in each column are closely related. The top hitch is tied round a pole or other object. I will refer to them as primary-elementary Hitches. The hitches there under are 'the same' but tied round the standing part of the rope. I will refer to them as secondary-elementary Hitches. But beware, the application of the variants are very different. The primary-elementary Hitches will spill if the object is removed. The secondary-elementary hitches will not. Some of the secondary-elementary hitches are 'capsized' bindery knots. As for all knots working the knot well is for these knots extremely important. Work it wrong and you might end up with another (probably unwanted) knot. For example, capsizing the two half hitches might end up in a granny knot, one of the worst of all knots. On the other hand if you know what you are doing, you might tie the wrong knot on purpose and capsize it to the hitch you want. Take care

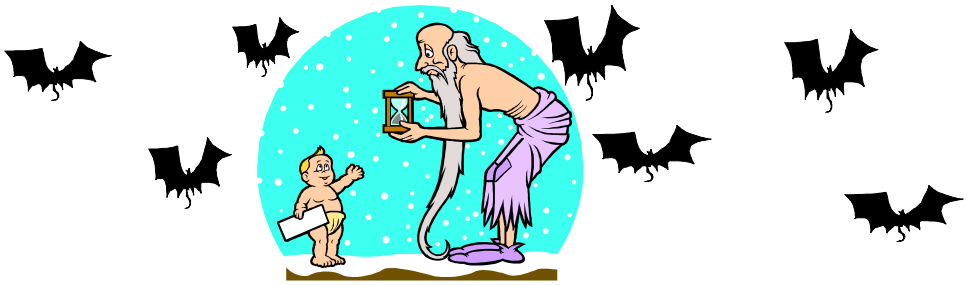


The Half Hitch

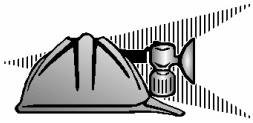
This is the capsized overhand knot. It is very useful to carry light loads which have to be removed easily. It can also be used to hang items you want to keep high away from mice.

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 3208 Gettysburg Dr., Altus, Oklahoma, 73521. All submissions to the newsletter should be sent to the editor: Lil or Dale Town, 3208 Gettysburg Dr., Altus, OK 73521: Telephone: (580)477-4027: E-mail: oklmt@cableone.net. 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!*

The January meeting will be at John Talbot's house, Friday, January 13!



Happy New Year!



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