CENTRAL
OKLAHOMA
GROTTO
OF THE NATIONAL
SPELEOLOGICAL SOCIETY,INC

C.O.G.nizance

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The April meeting of the Central Oklahoma Grotto will be held at 7:30, Friday, April 13, 2007 at the home of Dale and Lil Town.

Directions to The Town House:

From East: Go to Lawton, meet up with Duane and follow him here! If he's not coming, from Lawton take 62 west to Altus. Turn right at the first light. This is Veterans Drive. Continue north and stay on this road, it will merge into E. Tamarack about 2 miles. Continue going west on E. Tamarack and make a right on Gettysburg Dr.. We are at the north of end of the street on the left side of the road, 3208 Gettysburg Drive.

From interstate 40: come in on highway 283. Make a left at the first light, this is Tamarack. Go one mile and make a left at the 4-way stop on to Park Lane. Gettysburg is the 2nd street to the right, we are the 2nd house on the right side.

CENTRAL OKLAHOMA GROTTO
Minutes of the meeting of March 9, 2007

Host: The Lair of The Skillful Ogre, Steve Beleu
Other members present: Anne Ault, Sue Bozeman, John Talbot, John Van Dyke, and the Ogre

Treasurer Talbot began the meeting at 8:20

OLD BUSINESS

Summer Fun Trip Lead Officer Ault reported that she has been unable to make any type of contact with anyone in the NSS regarding our request to possibly visit Great X Cave this summer. COG may have contributed to the Great X fund, but it seems to remain a closed cave to us.

NEW BUSINESS

No one bitched too much when I formally submitted my plan to form a "COG Seniors Tour," so I suppose it now somewhat exists, kind-of. The problem is this: there are few members now who are *not* members of the Seniors Tour. We need to trick some of the youth into our grotto so they can carry our gear for us and help us get through caves without getting bruised up too badly. Fortunately Medicare Part D is here to help us!

TREASURER'S REPORT John Talbot read his report.

TRIP REPORT

We talked about the February bat count trips. John Talbot noted that all bat counts are up this year. He also noted that a traditional water passage in the main trunk of Jester Cave has dried up for reasons unknown, and reasons that should be investigated.

I reported on the precarious state of the central Washita Bat Cave—it evidenced much collapse from our visit there last year. In the future this entrance into the cave may be too dangerous to use; we may have to crawl into the cave through the other low and yucky entrance, whose formal name is "Low and Yucky Entrance".

MISC.

* Squeakbat and Squeakfrog put in a friendly appearance, but squeaked in fear and scampered away after they saw Sue, who has threatened them with GBH in the past.
* Lil almost wasn't late, and wouldn't have been if she hadn't made two left turns.
* The meeting was originally scheduled to be held at Dale Amlee's abode, but had to be changed that Friday morning to my wickiup-and-tar residence due to a death in the Amlee family, to whom go our thoughts.

As Sergeant-at-Underarms I concluded the meeting at 9:15.

ANNOUNCEMENTS

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

*The 7:30 April meeting will be, Friday, April 13, at the Town's house, 3208 Gettysburg Drive, Altus, OK ; phone: 580-477-4027

New Member:
Doug Cook, 1217 Mockingbird Road. Guthrie, OK. 7044
Home Phone: 405-282-8600
Cell Phone : 405-590-5373

MINUTES

The March Newsletter had gotten lost in the cyberspace and didn't get printed. It will be combined with the April newsletter. The editor.

CENTRAL OKLAHOMA GROTTO
Minutes of the February 9, 2007 meeting

The meeting was called to order at 8:10 p.m. by Chairman Roy Diehl. Besides Roy, in attendance were: Dale Amlee, Anne Ault, John and Sue Bozeman, Kelly Logan, Mark Miller, John Talbot, Lil Town, John VanDyke and Jon Woltz.

Roy introduced a prospective member, Doug Cook, from Guthrie. Doug told us a bit about himself: he has extensive caving experience in Oklahoma, especially with boy scout and girl scout troops and is interested in expanding his knowledge to include cave surveying. (By the end of the evening, Doug had paid a year's dues and we welcomed him into the club as its newest member!) Again, welcome to the group, Doug! .

Anne Ault mentioned that Great X cave has now been paid for (!) and that another piece of property -- this one in Cherokee County, OK -- was donated to the NSS. Here are a few details: Potter Brothers Unit Management Plan: This is a management plan for approximately 189 acres of land, containing Crystal Cave and Blue Moon Cave. Dennis and Kenneth Potter donated the land to the National Speleological Society (NSS) in 2003. The preserve is managed with assistance from the U.S. Fish and Wildlife Service (FWS) as part of the Ozark Plateau National Wildlife Refuge (OPNWR) in Cherokee County, Oklahoma. The complete document may be viewed at: http://www.caves.org/preserves/punp/mp-punp.html

Dale Amlee promised to have a detailed proposal on the mesh net for Carlsbad Caverns by the March meeting (we refused to see his fingers crossed behind his back).

Lil Town mentioned that a boy scout leader had contacted her to ask about touring Jester. She did not have the details, but it might have been Doug Cook's troop that had requested it. We're looking at an April trip If landowner permission can be obtained. Joe Looney has offered to lead a trip to Spavinaw Bat Cave and several other Delaware County caves to any of our group who wishes it. The only requirement is that you must provide him transportation from Bartlesville AND back!

Bat Count will be held February 17th. All three areas have adequate person coverage (after some shifting of personnel from SW to NW!) Roy will contact Dr. Caire (UCO) and Ron Harris (S. Jester) for cave permissions; John Talbot will handle the northern half of Jester -- landowners have changed there recently.

June 30th is the deadline for material on Cattle Cave for the next issue of the Oklahma Underground. A masterful article was completed by Dale Amlee (yeah!!!) on protecting bats, titled, "Proposed for a Method to Reduce Bat Deaths by Windmills" . Lil will have the map completed by March. Jon Woltz was given several choices on topics to write about and has promised to work diligently on it John Talbot will do a crossword 0nce provided with cave names which awaits Sue's doing! Otherwise, were well on our way.

John Talbot read the Treasurer's Report.

The meeting was adjourned at 9:13 p.m. Excellent refreshements proided by hosts: Tammy and John Van Dyke.

Changes:

- Jason Talbot bought a new house! Congratulations! New address: 170 Blackburn, Elk City, OK 73644 H: 580-5-225-4158; C: 580-303-8023; email: reddirt-gymnastics@yahoo.com

- Mew Member: Doug Cook—We only have an email gor him at the moment—(he and his wife are both eye docs): email:Two-eyedox@aol.com

- Jon Woltz has a new cell phone number: 580-650-9580; and an alternate email: woltzj@gmail.com.

TREASURER'S REPORTS

February, 2007
INCOME

DIVIDEND	$	.13
DUES	$	15.00
TOTALS	**$**	**15.30**
CASH ON HAND	$	32.30
CHECKING	$	614.95
SAVINGS	$	2,641.26

TOTAL FUNDS AS OF 2/05/07 $ 3,288.51

PREPARED BY TREASURER

NOTE: IN FEBRUARY THRE WERE 11 MEMBERS WHOSE DUES ARE DUE IN DECEMBER 2006, JANUARY 2007, AND FEBRUARY 2007. CHECK WITH JOHN TALBOT IF YOU ARE NOT SURE OF YOUR DATE.

Treasurer's Report for March, 2007
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PREPARED BY TREASURER

JOHN TALBOT

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TRIP REPORTS

BROKEN HORN CAVE

MARCH 17, 2007
Written by Steve Beleu

Walls of green crystal reflect our lamps
Shining and glowing back at us like
10,000 eyes from every direction.
*
So this crystal resembles a bit of geography,
The political boundaries we live within?
Better to not belittle the world below the world
By comparing it to the human.
*
After walls of green crystal, white walls.
Then we return to brown stone again
And the same grey, overcast skies again.

Trip Report: Expedition report, Selman Cave Bat Count
C.O.G. Personnel: John and Sue Bozeman, Dale Amlee, Anne Ault, Lil Town, and Mark Miller
February 17, 2007
Written by Mark Miller

08:20 hrs. Feb. 17.

Expedition disembarked from the capital, Katmandu. Weather clear, cool, light S.E. wind. Unable to procure Sherpas, decided to try again as we approached base camp. Expedition leaders had difficulties bartering for supplies prior to departure but eventually food stocks were located and procured from the Sonic Depot and we departed. Multi vehicle journey to base camp was uneventful.

11:00 hrs. Feb 17.

Arrival at base camp area was greeted with great anticipation and excitement by expedition members. Although expedition leaders John "Big John" and Sue Bozeman were unable to procure Sherpa porters (reportedly, many local sherpas had traveled to Katmandu for the yearly, "Monster Truck Playoff"), they did conduct expedition members on a sacred pilgrimage to receive blessings from Betty Selman, patron saint of the Selman system and owner/operator of the Selman Gasthaus and Coffee Bar. With much fanfare, blessings were bestowed and the expedition members set off to establish base camp. After a short, meandering journey, the expedition reached base camp, elevation 1791 ft. Amid howling winds (or was that howling oil field equipment, I can't remember), expedition members provisioned, and set off to traverse the undulating and treacherous "prairie," a sherpa word meaning undulating and treacherous. Strung out single file, expedition members carefully worked their way generally northeasterly. Relying on teamwork, the unerring navigational skills of the expedition leaders, and sheer grit, the expedition reached Ooh-Aah entrance following a grueling, treacherous, eighteen minute trek. Carefully navigating the entrance, the expedition reached Junction room, elevation 1659 feet where we divided into two teams, checked our hi-tech, automated census equipment, and split up, each group heading deep into the unforgiving wilderness. The group

(Continued on page 4)

composed of Dale, Sue and Anne carefully traversed to White Mountain, while the second group, composed of myself, John and Lil, (exceptional wilderness trekkers all), made for the challenges of the Square Sink. Following several hours of careful observation and recording, we proceeded back to the Campfire Room and the welcoming twilight of the Skylight Entrance where we met back up with the battered but intrepid members of the other group.

14:30 Hours Feb. 17

Following a lengthy recuperation period, both groups set off again, scaling the terrifying and challenging heights of the Skylight Entrance and then embarking on the most hazardous part of the expedition yet: another harrowing, frigid traverse of the prairie between the Skylight Entrance and the Don't Know entrance. Sliding and slithering over the ice (and excavating) through that entrance, (It was at this point that I secretly renamed this entrance the "Don't Want to Go (Mommy!!!) Entrance") the group proceeded as far as the base of Hot House Dome and the Sexit connection where we parted company yet again. Our group carefully searched and recorded at Hothouse Dome, the Overflow Corridor, and the cavernous, slick, guano encrusted precipices of the Spring Bat Room. After successfully concluding our journey we backtracked and fled the confines of the cave back through the (now enlarged) Don't Want to Go Entrance, and emerged into the gentle hues of the setting sun. Meanwhile, Anne, Sue and Dale worked their way judiciously towards the bat room between Cedar Shaft and the Resurgence. Their expedition too, was successful and they too retraced their path to and out of the Don't Want to Go entrance into gathering darkness where both groups happily disrobed (don't you wish you were there too!?!?) and proceeded back to the Selman Gasthaus and Coffee Bar for warm beverages and baked goods. All in all, it was a splendid, heartwarming adventure for our entire caving family.

POTPOURRI

Below the Surface

By Amy Leinbach Marquis
Reprinted from **National Parks**: Winter 2007: pages 58-59
Contributed by Jeri Ptacek

Centuries ago, Kentucky slaves interpreted Mammoth Cave's history. And in the process, they became a part of it.

In the depths of Mammoth Cave National Park, visitors walk with heads lowered, feeling their way along a crooked path that winds through dark, narrow passageways. The air is cool and moist, and the ranger's last story hangs in the air, sustained, like notes, in the previous chamber. Famous people have walked this path: Ralph Waldo Emerson, Jenny Lind, Elton John, and others whose names are written in soot on smooth, sandstone ceilings.

Suddenly the tunnel opens up into a grand rotunda reaching heights of 60 feet, where massive walls echo with memories of elaborate banquets, dancehalls, weddings, and the first ever "air-conditioned" Methodist church service. Years ago, musicians fresh out of school and desperate for work hauled clunky instruments through the same tiny spaces to perform for visitors, in hopes of being discovered and touring with *the* wealthy. Nineteenth-century women—without husbands in tow—crawled through cave dirt to reach this spot, finding liberation from a stifling society in a most unlikely way.

But perhaps the most fascinating story belongs to the early cave guides: slaves. "Mammoth Cave doesn't jump into your mind as an African-American park, but it's a primary story here," says Joy Medley Lyons, chief of program services at the park.

This cave system, spanning 350 miles (and counting), lies beneath Western Kentucky's karst landscape and formed hundreds of millions of years ago, well before dinosaurs ruled the earth. After the Woodland Indians, diere were few permanent residents in the area until the late 1700s when explorers like Daniel Boone pushed farther west. Settlers soon learned that the region offered a valuable commodity: nitrate-rich cave dire, or saltpeter, used to produce gunpowder and preserve meat before the dawn of refrigerators.

The first official owner of Mammoth Cave claimed a 200-acre federal land grant in 1798, like many Americans setting out to own a slice of the "American Dream." Small-scale saltpeter mining operations began and continued with subsequent owners. When England blocked America's ports before the War of 1812, production went into high gear, allowing the nation to defend itself despite being cut off from **the rest** of the **world.**

After the war, saltpeter operations slowed to a halt, but Mammoth Cave held promise as a tourist attraction. In 1839, Dr. John Croghan, a brilliant businessman with a medical degree and a hearty sense of adventure, purchased the cave — and with it, Stephen Bishop, a slave who was a cave guide under his previous owner. They quickly began converting the home that had housed the managers of the mining operation into the spacious Mammoth Cave Hotel, with plans to build on the entertainment appeal below ground, too.

But Croghan's push for fame came to a halt in 1842 when he decided to pursue a subterranean hospital for tuberculosis patients, hoping that constant cave temperatures and moist air would cure their disease. About a dozen patients moved underground, living there in huts built of stone and wood. The project failed after two years.

(Continued on page 5)

Bishop, along with two other slaves, continued leading tours in the cave, charming celebrities and rich European tourists who flocked to this spectacular place. Visitors often left as enthralled by their smart, gracious, well-spoken guide as they were by the cave. The guides, Bishop in particular, were quite observant and eager to learn. "They were hearing conversations about culture and government, food and clothing styles — things that my own white ancestors in Owensboro, Kentucky, weren't hearing a darn thing about," Lyons says.

In time, the guides began pushing the limits of exploration, seeking out new passageways with little more than a candle to light the way. One visitor challenged Bishop to take him calling a treacherous drop-off that he'd once encountered, Bishop lugged a ladder into the cave, positioned it over the gaping hole, and crossed to the other side with his visitor. That breakthrough opened up a whole new wing of the cave that had never been explored.

The deeper they pushed, the more bizarre their discoveries became: eyeless fish; translucent crickets; gypsum that took the form of flowers, cottony tufts, and delicate tendrils. Guides learned co identify these cave dwellers by inviting scientists on tours, sharing their newfound knowledge with the cave visitors that followed.

In 1849, Croghan died from tuberculosis, leaving the cave to his nieces and nephews. Seven years later, Bishop was given his freedom, as requested in Croghan's will. But Bishop had little time to savor it; he died the following year. Mat Bransford, another prominent slave guide, continued to lead tours—a family legacy that would last 101 years.

In 1941, Franklin D. Roosevelt signed legislation designating Mammoth Cave as a national park, but five years would pass before its dedication ceremony, delayed because of World War II. A few families from the original homesteads relocated nearby, and to this day their descendents keep close ties to the park.

"There's so much here," Lyons says. "It's not just cave mileage waiting to be discovered. There are *people* waiting to be rediscovered." NP Amy **Lainbach Marquis** is assistant editor for *National Parks* magazine.

New albino millipedes discovered

'Living fossils' will help researchers understand how life evolution

By Jeanna Bryner

Reprinted from Livescience.com

Two albino millipedes have come out of their cavernous hiding places to represent an entirely new genus of these leggy organisms.

Scientists spotted the millipedes in caves on opposite sides of the Grand Canyon. One species was found in a cave on the South Rim and the other in two caves on the North Rim.

"We knew the millipedes likely represented two distinct species because the two populations were separated by the Grand Canyon," said biologist J. Judson Wynne, a cave expert at Northern Arizona University who also works for the U.S. Geologic Survey. "The fact these two species belong to an entirely new genus was a great surprise to us."

Wynne made the discovery with Kyle Voyles, a cave expert with the Bureau of Land Management.

A genus is a major subdivision within a family of living things that typically includes more than one species.

Before they ever ended up in the caves, these millipedes were ready for a life of constant darkness, high humidity and scarce food. They lack functional eyes, which would be useless in the blackout conditions, and have no pigment since there is no need for protection from the sun's rays. Instead the cave critters have lots of legs and feelers for finding the rare speck of food washed into the cave from above.

Blind beauties

Wynne said these eyeless albino millipedes are "essentially living fossils" and will help researchers understand how life evolved in cave ecosystems.

Thousands of years ago, when northern Arizona was warmer and wetter, millipedes basked in moist leaf litter. But as temperatures changed, they sought refuge in caves, where the subterranean realm provided stable,

climate conditions. Now they are restricted to this environment.

The eighth pair of legs on the millipedes are called gonopods. These modified legs are not for walking but rather transfer packets of sperm to the females during mating. The scientists, along with William Shear at Hampton-Sydney College in Virgina, found the gonopods were distinct and similar only to these two new species.

The discovery of the North Rim species will result in the two home caves becoming listed as "significant" under the Federal Cave Resource Protection Act of 1988.climate conditions. Now they are restricted to this environment.

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Cave life

During their field research to make an inventory of cave life, the scientists have explored 30 caves in northern Arizona. In addition to the new millipede species, they have discovered new species of spider, barklouse, beetle, and possibly two springtails. Plus, they found a new genus of cave cricket.

There's still more to uncover, the scientists say. "With 170 known caves [along a strip of land in Arizona's BLM], there is no doubt that there is more to find. The research we have conducted here is just the tip of the proverbial iceberg," Voyles said

The new millipede genus will be named after ecologist John Prather of Northern Arizona University, who passed away last year.

Giant crystals enjoyed perfection

With lengths over 11m, the giant gypsum crystals found in Mexico's Cueva de los Cristales are a great natural wonder.

Reprint from BBC
http://news.bbc.co.uk/go/em/fr/-/2/hi/science/nature/6518161.stm

Now, a Spanish-Mexican team thinks it can explain how these marvels acquired their immense form.

The scientists studied tiny pockets of fluid trapped in the crystals and conducted back-up lab experiments.

They report in the journal Geology that the solution from which the crystals grew must have been kept in a very narrow, stable temperature range.

The researchers' analysis leads them to believe there are other dramatic caves waiting to be discovered in the Naica mine complex south-east of Chihuahua city.

"If the theory we propose for the 'genetic' mechanisms of the crystals is right, then I would not be surprised if miners find more of these caves in the next few years," Juan Manuel Garcia-Ruiz, from the University of Granada, Spain, told BBC News.

Bigger than 'swords'

Already two remarkable caves are known at Naica, which has yielded some of the world's most significant deposits of silver and lead.

The 120m-deep Cueva de las Espadas (Cave of Swords), discovered in 1912, is named for its metre-long shafts of gypsum (a calcium sulphate mineral that incorporates water molecules into its chemical formula).

And although individually there are fewer crystals in the 290m-deep Cueva de los Cristales, its beams are considerably bigger.

Professor Garcia-Ruiz and colleagues believe they can now show how these differences emerged.

The team studied tiny fluid samples embedded inside the crystals themselves.

These watery inclusions record tell-tale chemical details of the saline and temperature conditions of the saturated solution from which the mammoth structures developed.

'Perfect conditions'

Both caves owe their origin to the volcanism which laid down the metal sulphides - the ores - that have proved so valuable.

Copious amounts of calcium sulphate would also have been created towards the end of this mineralisation process more than 20 million years ago - but in the hot fluids that infused the cracks and cavities in the rock, this calcium sulphate would have taken the form of anhydrite.

Anhydrite has the same chemical formula as gypsum, except that it excludes water. Only as the magma chamber deep under the Naica mountain cooled did the hot fluids above start to fall to a temperature at which anhydrite could switch to gypsum.

Professor Garcia-Ruiz and colleagues say their

must have been kept just below the transition temperature for many hundreds of thousands of years.

Studies indicate that the deeper of the two caves - Cueva de los Cristales - must have been kept just below the transition temperature for many hundreds of thousands of years.

"The conditions were perfect. By maintaining the temperature just below 58 degrees for a very long time you get a few, very big crystals," said Professor Garcia-Ruiz.

"You can see that many areas on the cave's walls are empty; they have no crystals. The walls are red because of the iron oxide. The reason we know this happened for many years is because we studied the fluid inclusions inside the crystals."

It is likely the upper cave - Cueva de las Espadas - fell below the transition temperature much more rapidly and consequently grew many, smaller crystals.

Heritage future?

The particular crystalline form taken by the gypsum is selenite which is known for its translucency.

Their future will be dependent on the fate of the mine.

At the moment, access is restricted to prevent damage to the soft crystals.

And the only reason humans can get in the caves at all is because of the ongoing pumping operations that keep them clear of water.

If, when Naica's ores are no longer viable, the mine is closed and the pumping is stopped, then the caves will be submerged - and the crystals will start growing again.

"I've recommended to the mining company that they try to preserve them and I would like to see Unesco get involved," explained Professor Garcia-Ruiz.

"Later on we should decide whether to keep them available for people to visit and enjoy, or let the natural scenario return."

Gypsum Primer

Written by Steve Beleu

No rock at all
But a mineral,
Gypsum's no rock aggregate
But a sulfate
Formed by inorganic processes
And deposited in thin traces
Of strata 1,500 meters thick
In the Permian Basin
Where an shallow ocean
Of water's transforming magic
Created caves in it
10 to 20 times faster
Than caves of limestone,
Sculpting passage and dome
Beneath arid dirt.

If you break gypsum apart
It splits into four planes,
One of them perfect.
Its softness ranks 2 out of 10
And its color depends—
Though crystals are transparent
Stone can be white, grey, pink, red,
Brown, blue, pale yellow, or rare black.

Cavers who don't respect gypsum
Cave in their own ignorance.
The short-lived gypsum cave
Is a blossom in spring's grove
Suddenly come and soon gone.

Gypsum caves are phreatic—
Water dissolving up from below—
Or vadose—water dissolving
Soft gypsum from high to low.

Gypsum spleothems are numerous,
Created through miniscule cracks
Or deposited across the stone surface.
Crystals, coral, powder, popcorn,
Drapery, rimstone dams, flowers—
All these and more, and more
Not yet found, and many never
To be found. Passages can be
Round and smooth as a canvas
Not yet painted by the force of water
That shapes every form on this planet—
For only by water are caves born
And by water their speleothems
That decorate the world below the world.

Though limestone's millions of years
Allows for vast, massive development
That perseveres for eons, gypsum caves
Are short-lived, and 100,000 years is old.
But beauty unexpected and sudden can gleam
From gypsum caves more astonishing!

The depth of gypsum caves is less
And their length is less
Than long and deep limestone.
But a sudden gleaming, luminous
For only a moment is also rapturous
Next to the stone beside it, impressive
In its sudden brief beauty.

Gypsum caves have many entrances
Unlike the one or two of limestone.
So we enter and leave them as easily
As the winds that blow into and through them
And easily as the rains that can flood them—
But not while we're there, entranced,
Exploring, surveying, mapping, eyes agape
At every foot of gypsum sulfate.

Cavers who don't love gypsum
Cave in the abysmal chasms
Not of limestone but of their hearts
Closed to the simple beauty of the blossoms
Brief and soon gone of gypsum.

S Beleu, February 23, 2007

FRANK AND ERNEST

Cavespawn

Written by Steve Beleu

A young girl sat down beside a cave entrance
And upon her thin knee sat a babe new born.
Though the mother was almost a child herself
She was not too young to know the scorn

Of the man who'd used and abandoned her.
But it was no man who'd bred her young.
She had returned to where she'd met
The creature from the cave who had sung

Of a winding world below deep and hidden,
And she had fallen in love with that vision,
And wonder led to embrace, and embrace
To a babe born too soon for the human race—

But not too soon for a creature half-human
And half- what do we call it? A wonder
That seemed to be a salamander
But could shrink itself or expand

As it willed. Man-sized its father had embraced
The girl and now embraced his son,
And as the mother cursed and cried
Took its young and was gone

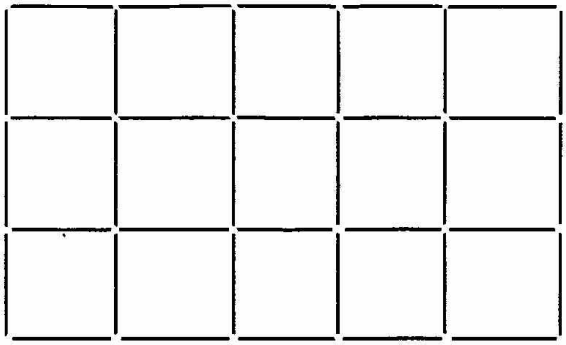
Down through The Bore of the Earth
To brag to its kind about the birth
Of his son who was half-man
And half-salamander: cavespawn.

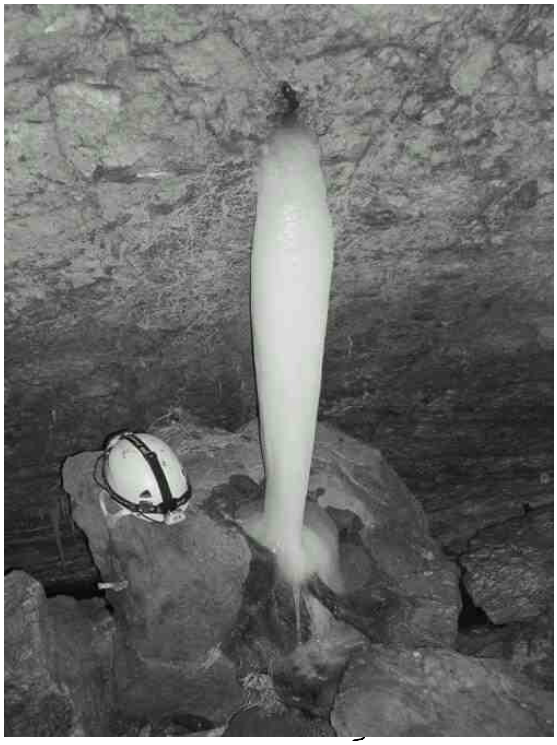
For This Bat's tongue, Size Matters

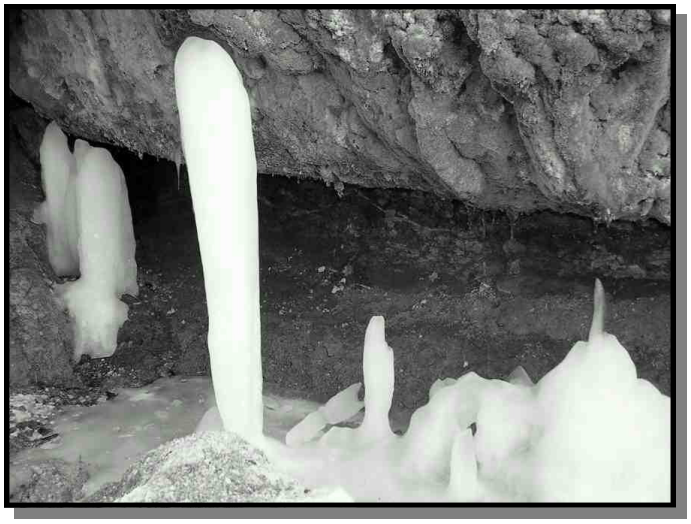
Reprinted

Bats use the Earth's magnetic field to navigate, and one species has a tongue that is longer than its entire body, studies in today's Nature reveal. One study shows that the homing devices of the brown bats can be altered by artificially shifting the magnetic field indicating the animals depend on a "compass" to travel, abilities possessed by the animal for navigation in the dark, researchers say/ In the other study, researchers taught the nectar bat, Anoura fistulata, to drink from a modified straw wo they could measure its 3-4 inch tongue, which is 1 1/2 times longer than its body. The bat, which stows its tongue in its rib cage, pollinates a plant with tube-like flowers of the same length. Researchers suggest the bat's tongue coo-evolved with the long flowers of the plant.

Puzzle to do during those cold rainy days. Use tooth pictures to set up the following diagram. Take away 14 sticks to leave 9 equal squares.







Pictures taken by Jon Woltz during the Washita bat count!

BAT COUNT 2003-2007 CENTRAL OKLAHOMA GROTTO

MYOTIS VELIFER (Cave Bat)

CAVE NAME	CAVE NUMBER	2/8&16 2003	2/5 2004	2/12 2005	2/11 2006	2/17 2007
Jester	GR-011	17844	25970	17839	15572	15660
Selman: C.O.G.*	WD-041	12118	9207	64882	72695	100380
Selman: U.C.O.	WD-041	52565	68103	45296		
Washita Bat: North	WA-039	173	83	369	196	9377
Washita Bat: Center	WA-038	2304	6322	1113	2798	198
Washita Bat: South	WA-040	7420	1460	546	416	101
Wired	GR-020	0	nc	nc	nc	nc
TOTALS		92424	111145	130045	91677	125716

* Combined cave section count from 2006 forward

CORYNORHINUS TOWNSENDII PALESCENS (Big-eared)

CAVE NAME	CAVE NUMBER	2/8&16 2003	2/5 2004	2/12 2005	2/11 2006	2/17 2007
Jester	GR-011	13	9	17	2	4
Selman: C.O.G.	WD-041	0	0	0	0	0
Selman: U.C.O.	WD-041	0	0	0	0	
Washita Bat: North	WA-039	0	1	0	0	0
Washita Bat: Center	WA-038	0	0	0	0	0
Washita Bat: South	WA-040	0	0	0	0	0
Wired	GR-020	0	nc	nc	nc	nc
TOTALS		13	10	17	2	4

PIPISTRELLUS SUBFLAVUS (Pipistrel)

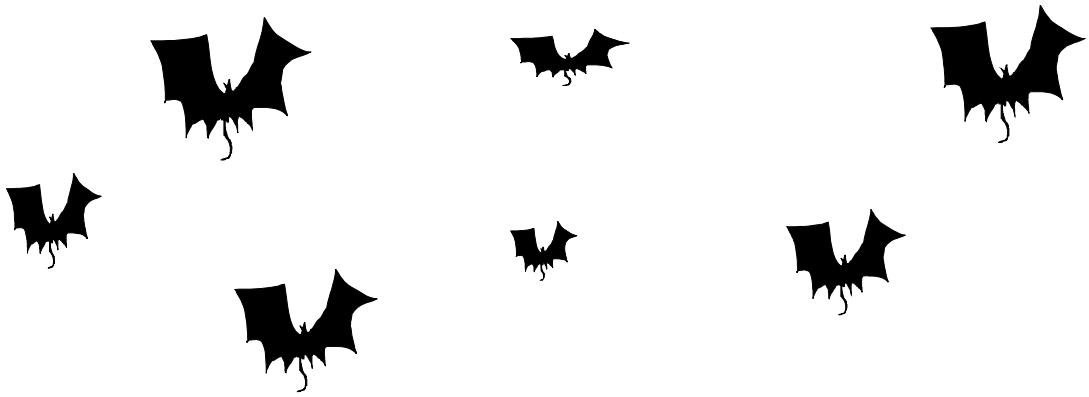
CAVE NAME	CAVE NUMBER	2/8&16 2003	2/5 2004	2/12 2005	2/11 2006	2/17 2007
Jester	GR-011	44	52	203	100	167
Selman: C.O.G. (area)	WD-041	22	47	35	62	33
Selman: U.C.O. (area)	WD-041	46	39	89		
Washita Bat: North	WA-039	39	42	0	1	0
Washita Bat: Center	WA-038	0	4	0	0	0
Washita Bat: South	WA-040	0	66	0	0	0
Wired	GR-020	0	nc	nc	nc	nc
TOTALS		151	184	327	163	200

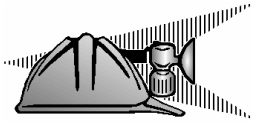
EPTESICUS FUSCUS (Big Brown)

CAVE NAME	CAVE NUMBER	2/8&16 2003	2/5 2004	2/12 2005	2/11 2006	2/17 2007
Jester	GR-011	0	0	0	0	0
Selman: C.O.G.	WD-041	0	1	1	1	2
Selman: U.C.O.	WD-041	0	1	0	0	
Washita Bat: North	WA-039	0	0	0	0	0
Washita Bat: Center	WA-038	0	0	0	0	0
Washita Bat: South	WA-040	0	0	0	0	0
Wired	GR-020	0	nc	nc	nc	nc
TOTALS		0	2	1	1	2

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!*

Don't forget to come to the April meeting at the Town's House, Friday, April 13th





Central Oklahoma Grotto
C/o 3208 Gettysburg Drive
Altus, Oklahoma 73521