



# TSA Activities Newsletter

Volume 10, Issue 6

June 2006

## News & Notes

### TSA Affairs:

#### 2006 TSA Spring Convention Wrap-Up

The 2006 Spring Convention is over and done. Good feed, good presentations, and a good time was had by all. 110 cavers attended from all over the state and beyond. For those that missed it, here's a list of the talks that were given:

*Recent Explorations in Blowhole Cave, TX* by John Brooks & Jerry Atkinson — photographic history of the ongoing survey project in a classic Carta Valley cave.

*Recent Advances in Our Understanding of Central Texas Eurycea* by Andy Glusenkamp—discover the secret life of Texas cave salamanders!

*Texas Classics Revisited* by Travis Scott — photos of largely forgotten classic Texas caves you've visited way-back-when you were a young whippersnapper.

*The Most Action Packed 25 Minutes of Armchair Caving in Your Life: Caves of Guatemala, Chihuahua, Sonora, Wyoming, Washington, Querétaro and more* by Phillip Rykwalder.

*Caves of Mt. Roraima, Venezuela* by Peter Sprouse — hear about cave exploration in the tallest table mountain in southeastern Venezuela; this region was the inspiration for Arthur Conan Doyle's *Lost World*.

*Caving in Belize: 1973-2006* by Logan McNatt — more than thirty years of exploration in Belize described in thirty minutes.

*The TCMA/TBEG/TPWD LIDAR Mapping project of Devil's Sinkhole* by Geary Schindel & Allan Cobb — hear about the TCMA cooperative project with the Texas Parks and Wildlife and the Bureau of Economic Geology to create a full 3-D reconstruction of the Devil's Sinkhole using non-invasive LIDAR (Light Detection And Ranging) mapping.

*Grotto and Fish and Wildlife Service Cooperation in Cave Conservation in Eastern Oklahoma* by Steve Hensley — the Refuge Manager of the Ozark Plateau National Wildlife Refuge and Fish & Wildlife Biologist describes conservation efforts in concert with the Tulsa Regional Oklahoma Grotto.

*Digital Photography: Demystifying RAW Files* by Kevin McGowan — find out how to improve your photographic results by working with unaltered digital files.

*An Introduction to the International Union of Speleology* by Jose Labegalini and George Veni by George Veni — the UIS is the governing body for the upcoming International Congress of Speleology, to be held in Kerrville in the summer of 2009.

*Gómez Farías, Taumaulipas Mexico....Cave Discoveries November 2005* by Aimee Beveridge — the Reserva de la Biósfera El Cielo is the northernmost cloud forest in the

Northern Hemisphere and is characterized by deep multi-level pits ending at the water table as well as some very large horizontal caves.

*The Journey Back to Snowy River (Ft. Stanton Cave)* by John Corcoran & Wayne Walker — a talk about the project, the discovery, and the continued efforts to explore the Snowy River Passage; the first National Cave Conservation Area.

*Searching for More Caves in the Purificación Region* by Bill Steele — cave discoveries from three years of expeditions during the Christmas/New Year's holidays are described.

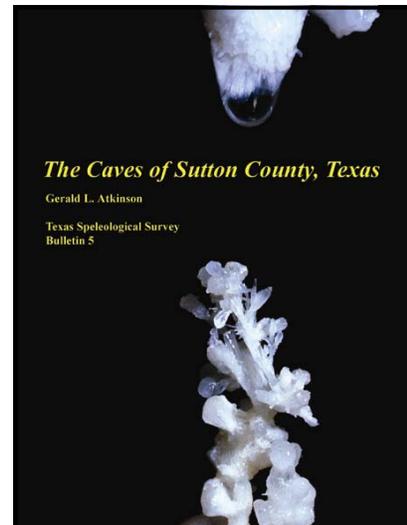
*Cavin' in San Saba County* by Dennis Welch — description of the caving opportunities on private ranches in San Saba County.

*Latest News from the J2 Expedition and DepthX Project* by Bill Stone — breaking news from the exploration of the potentially deepest cave in the world located in Oaxaca, Mexico.

### TSS Affairs

#### Sutton County Publication Available

The TSS has released their Bulletin 5, *The Caves of Sutton County, Texas*. The report covers 49 known caves, 11 karst features, 14 rumored caves, and includes 35 maps. Read about the forgotten corridors of Felton Cave; marvel at the borehole dimensions and beauty of Harrison Cave, once one of the most secret caves in the state; and admire the



extraordinary delicacy of the famous Helictite Room in the Caverns of Sonora. History, geology, biology, archeology, and descriptions of the area caves. Includes 36 B&W photos and a 4 pp. color gallery. Cost is \$10 plus \$3 S&H. Orders can be placed with:

TEXAS SPELEOLOGICAL SURVEY  
 PRC 176/R4000  
 The University of Texas at Austin  
 Austin, TX 78712-1100  
 Answering Machine: (512) 475 -8802

Or with: Ron Ralph  
 TSS Office Manager  
 13101 Wild Turkey Drive  
 Manchaca, Texas 78652  
 (512)-280-9648 <ronralph@austin.rr.com>

### June TSS Work Session

The TSS will hold an evening work session at the TSS office in Austin, June 14th from 5:00 to 8:00 p.m. Come help with the organization of Texas cave information. **Contacts:** Jim Kennedy (512)-663-2287 <jkennedy@batcon.org> or Ron Ralph <ronralph@austin.rr.com>

### TCMA Affairs

#### Robber Baron Cave Restoration Project

Cavers and Friends, We need your help! We are beginning the next phase at Robber Baron and it is labor intensive. We need people! We are moving gravel, pouring concrete, making retainer walls and steps into the sinkhole. We will be working June 24th and 25th. Bring wheel barrels, concrete working stuff, and general grounds maintenance stuff. I'll send out a note with more details as the date nears, but please put this on your calendar and in your newsletters. We are at the place where we need warm bodies and lots of expendable calories. If you need places to stay or camp, please let me know as soon as you can and we will work something out. Our plan is to work the last month of every month until the major work is finished. We can visit the cave any time we work. After the summer, the cave will be open again for general visitation. Please let me know if you are planning to attend. I'll make sure I have enough cold drinks to keep us hydrated during the work.

Linda Palit <lkipalit@sbcglobal.net>.

#### Results of the 3rd Annual TCMA Auction

I wanted to publicly thank Bill Steele, Marlina Cobb, Rob Bisset, Sara DuBose, and Joe Ranzau for their hard work organizing and running the TCMA Auction. I also want to thank all of you who made donations and purchased items at the auction. As a result of the auction, the TCMA Cave Acquisition Fund grew by \$1775. On Sunday morning, the TCMA breakfast also raised about \$200. This money all goes into the Cave Acquisition Fund that is used to pay off the Punkin and Deep Cave Preserve Loan and to purchase more caves. Thanks for your support.

Allan Cobb  
 TCMA Fundraising Chairman

### TCC Affairs

#### TCC Acquires Second Cave

On May 16, 2006, Standard Pacific Homes donated the Dies Ranch Treasure Cave to the Texas Cave Conservancy. This is the second cave donated to the TCC this year. The other

cave, Avery Ranch Cave, is being developed as an educational show cave. We will be using the Dies Ranch Cave as a vertical training site available to both cavers and to the City of Cedar Park Fire department. We have cleaned up the site, installed stairs, and have made other improvements. We will also be managing five other caves in the Deer Creek properties.

The entrance to Dies Ranch Treasure Cave is a sinkhole approximately fifteen feet across with a drop of eight to ten foot to a grate that covers the pit built by Mike Warton. The first cave gate allows access to the bottom of the twenty-foot pit through a series of climbdowns. The second gate is located in the center of the grate and allows a twenty-foot rappel. The cave is cool throughout the year and will make a great place to learn rope work.

Mike "Tiny" Manke

### NSS Affairs

#### Final NSS Convention Salon Callout

Each year, at its annual convention, the NSS hosts juried salons of art related to caves and caving. The salons provide an outlet for members' talents and showcase the world of caves. Some are judged at the convention; others must be judged beforehand. This year's NSS Convention will be in Bellingham, Washington on 7-11 August. The salon evening program on Thursday night is a major attraction for attendees; in addition to announcing the salon awards, the show features spectacular slide, multi-media, and video programs. The other salons are on exhibit throughout the convention week.

There's still time to consider entering your work in many of the salons, but deadlines are fast approaching. Here are the salons and their deadlines:

CARTOGRAPHIC SALON (cave maps) -- **July 1st.**

CAVE BALLAD SALON (recorded music) -- May 15th.

COVER ART SALON (newsletters and publications) --

**April 1st (but probably can be extended)**

FINE ARTS SALON (drawings, paintings, sculpture, other) - **July 15th.**

MULTI-IMAGE SALON (multi-media and PowerPoint) -- **July 1st.**

PRINT SALON (photographic prints) -- **August 6th.**

SLIDE SALON (photographic slides & digital images) -- April 15th.

SYMBOLIC EMBLEM SALON (patches, decals, pins) - **July 29th.**

T-SHIRT SALON (caving T-shirts) -- **August 7th.**

VIDEO SALON (films and videos) -- May 1st.

Information concerning each salon, rules for entry, and contact info can be found on the NSS website at: <<http://www.caves.org/committee/salons/>>. The website also features images of last year's winners, including sound recordings (mp3) and video clips (mpg). Be sure your fine work is included in the 2006 NSS Salons.

Alex Sproul, NSS 8086RL/FE  
 NSS Salons Committee



### National News

#### Mammoth Cave to be Featured on New Postage Stamp

**Cave City, Ky.** – Officials at Mammoth Cave National Park this month will be celebrating a new postage stamp that features the cave. The cave appears on one of 40 stamps called "Wonders of America -- Land of Superlatives." In addition, the post master at Mammoth Cave says his office is offering a special post mark on the day the stamps get released. On May 27th, visitors can have the stamp canceled in the cave. The post mark will read "140 feet below 42259," which is the Mammoth Cave zip code.

(<http://www.wkyt.com/Global/story.asp?S=4885565&nav=4CAL>)



(**Editor's note:** That's one ugly stamp for a Wonder of America – Land of Superlatives' winner.)

#### Divers Break Record at Wakulla Springs

**Wakulla Springs, Florida** — Cave divers broke their own world record over the weekend at Wakulla Springs State Park, discovering a new passageway and venturing more than 20,000 feet from the spring opening. Wearing rebreathers and carrying underwater scooters and spare air tanks, Jarrod Jablonski and Casey McKinlay spent nearly seven hours at a maximum depth of 300 feet, surveying 3,000 feet of previously unexplored cave passage, which they named "Q" Tunnel. They entered the cave at Wakulla Springs State Park just before 9 a.m. Saturday and emerged at 6 a.m. Sunday following 14 hours of decompression. The pair, leaders of the all-volunteer Woodville Karst Plain Project, got to the end of a guideline set in 2000 by Jablonski and Fort Lauderdale's George Irvine, then ventured into an opening that Jablonski and Irvine had seen, but did not have

time to explore. The opening led to a larger tunnel, which they videotaped and extended guidelines approximately 3,000 feet. "We've got a huge cave heading south-southwest, probably headed into the Gulf of Mexico," McKinlay said Sunday. Park officials say the dives help scientists and planners understand and protect the spring against water-quality threats. The divers were assisted by a support team of 25 onshore and in the water. McKinlay says if the weather stays dry, they might try for another push in about two weeks.

(Excerpted from: Ritchie, Bruce. 2006. <http://www.tallahassee.com/apps/pbcs.dll/article?AID=/20060522/BREAKINGNEWS/605220326>) and Cocking, Susan. 2006. <http://www.miami.com/mld/miamiherald/sports/14637266.htm>).

(**Note:** For an interesting virtual tour of the spring, see the Interactive Spring Feature at <http://www.floridasprings.org/exploration/featured/wakulla/>).



Wakulla Springs, Florida. Photo by Wes Skiles.

### Cave Biology

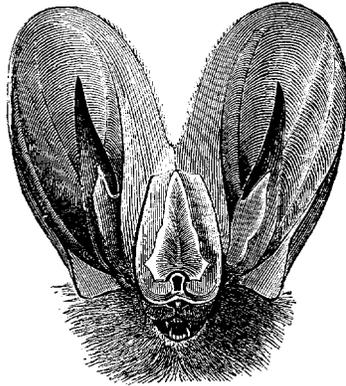
#### Bats Use Guided Missile Strategy to Capture Prey

When it comes to rocket science, it looks like bats had it worked out before the scientists did. A new University of Maryland study finds that echolocating bats use a strategy to track and catch erratically moving insects that is much like the system used by some guided missiles to intercept evasive targets and different from the way humans and some animals track moving objects. Using infrared video cameras and an array of microphones in their bat lab, the University of Maryland research team discovered that the big brown bat solves a rather complex geometrical problem to minimize the time it takes to intercept flying insects. The pursuit strategy is different from that reported in earlier studies of target pursuit in humans and other animals. This study also demonstrates, for the first time, that bats work out ahead of time how they will catch an insect. Evolutionary pressure to catch flying insects as fast as possible, the researchers speculate, may have pushed the bat to adopt this technique to catch a meal on the go as quickly as possible. Their paper appears in the May issue of PLoS Biology.

This study is one of several published by the Moss lab in recent months that have uncovered new information about how bats use sound to probe their environment and process information. This finding contributes to our growing

discoveries about the bat's exquisite adaptive behaviors in response to rapidly changing echo 'pictures' of the world, says psychology professor Cynthia Moss, a co-author of the study and director of the lab. These adaptive behaviors include agile flight and head-aim control, as well as adjustments in the timing patterns of sonar vocalizations, all finely coordinated to allow the bat to capture a free-flying insect in complete darkness and in the snap of a finger.

One way to intercept a target moving at fixed speed in a straight line is with constant bearing, a technique used by humans and other animals such as fish and dogs. When a centerfielder runs for a fly ball, for instance, he uses constant bearing, keeping the angle between him and the ball constant, and moving in a straight line as he closes in on his target. He uses his eyesight to track the ball's movement, moving, essentially, in a collision course with the ball. Constant bearing is a simple, intuitive way of doing complicated mathematical calculations, says, lead author Kaushik Ghose, Ph.D. It's the quickest way to get to a predictably moving target.



Enter the bat, which uses sound rather than sight, to track its prey. The bat emits a series of ultrasonic pulses through its mouth to search its environment. When the pulses hit upon an insect that could be dinner, they bounce back to the bat to alert it to the insect's presence. But insects don't move in a predictable straight trajectory like a baseball. They fly about erratically and may be in the open for only seconds at a time. The bat has a fleeting time window to detect, localize, and capture highly maneuverable and unpredictable prey, says Ghose. A complete insect chase, from detection to capture, typically takes the bat less than a second.

To see just what methods a bat uses to make the lightning fast interception, the team took infrared video and sound recordings of eight big brown bats intercepting both free flying and tethered insects in Moss's specially designed bat lab. By slowing the video, the team reconstructed the bats' flight and tracking maneuvers to reveal that bats don't use the constant bearing method the baseball player does. Instead, the bat constantly changed its bearing angle and speed in response to the insect's rapid movements. The bat locks its head on its target, much like the baseball player who keeps his eyes on the ball, and maintains the lock-on throughout the interception maneuver, even as its flight direction changes. The bat keeps the compass direction to the target a constant, but it changes its flight direction at the

same time, says Ghose. So, when the bat chases an insect, if the insect is initially located to the northwest, the bat maneuvers to always keep the target to the northwest while closing distance. This strategy is called parallel navigation after the parallel nature of the bearing lines. Interestingly, in the late 1940s engineers working on the problem of how to program guided missiles to hit their targets implemented a similar strategy.

On first glance, the bat's strategy doesn't appear to be the easiest. After all it's easiest to just head straight for a target. As long as you've moving faster, you will catch it, Ghose says. The next easier thing is to maintain a fixed angle between yourself and the target. But the bat has done one better. It's worked out ahead of time where it thinks the insect will end up and leads its flight to do that. It turns out the bat's strategy is time-optimal for catching erratically moving targets. It suggests that the bat adopted this strategy in response to evolutionary pressures of having to capture erratic and fast moving insects. You could say that the need to intercept unpredictably moving targets as quickly as possible has driven both nature and engineers who design missiles to adopt the same strategy.

Other researchers were Maryland faculty Timothy Horiuchi, and P.S. Krishnaprasad, professors of electrical and computer engineering. They, along with Ghose, also work in the university's Program in Neuroscience and Cognitive Science. The study was funded by grants from the National Science Foundation and the National Institutes of Health. See an animation of a bat tracking and capturing an insect at: [http://biology.plosjournals.org/archive/1545-7885/4/5/supinfo/10.1371\\_journal.pbio.0040108.sv002.wmv](http://biology.plosjournals.org/archive/1545-7885/4/5/supinfo/10.1371_journal.pbio.0040108.sv002.wmv).

(Excerpted from:

<http://www.tmcnet.com/usubmit/2006/05/03/1637238.htm>)

### **Devils Hole Pupfish Moved to Hatchery**

**Devils Hole, Nevada** — Biologists have moved some of the few remaining endangered Devils Hole pupfish from their secluded desert hot spring in an effort to help grow the species' population. A total of nine pupfish were moved to a Las Vegas Strip casino aquarium and a federal fish hatchery on the Colorado River. "This is the first time in our efforts to propagate the fish that we've moved actual Devils Hole fish," said Bob Williams, a U.S. Fish & Wildlife Service field supervisor. Williams is a spokesman for a state and federal team trying to save one of the first species listed as endangered in the United States. Two male adult pupfish were captured in their spring at Death Valley National Park along the Nevada-California border and moved Thursday to the Shark Reef aquarium and exhibit at the Mandalay Bay hotel-casino, Williams said Friday. Two female adult pupfish were brought to the Shark Reef exhibit from a refugium at Hoover Dam, where biologists have been trying to raise a backup population of the fish. Five younger pupfish also were moved from Devils Hole to the Willow Beach National Fish Hatchery in Arizona as part of a plan to establish Devils Hole pupfish in aquaria. After the moves, an estimated 36 adult pupfish remain in the species' only known natural home, a water-filled subterranean cavern about 100 miles west of Las Vegas, Williams said. For more than 50

years, scientists have been trying to save the species, which once numbered more than 500. Since the late 1990s, federal biologists have been tracking falling numbers. An accident wiped out as much as half the population in 2004. The species has not made the comeback experts had hoped. They have bred hybrid pupfish at several facilities, including the Shark Reef. Williams said the next step is to breed pure pupfish to stem the decline of a genetically unique species distinguished by the lack of pelvic fin common to other pupfish species. To safeguard what he called a "peculiar fish," President Harry S. Truman in 1952 designated 40 acres around the hole as part of Death Valley National Monument. In 1967, the Devils Hole pupfish was listed as endangered. The U.S. Supreme Court ruled that year that the site could be protected, and sided with the fish again in 1976 when developers and farmers challenged conservation efforts.



Devils Hole Pupfish (*Cyprinodon diabolis*)

The Devils Hole Pupfish (*Cyprinodon diabolis*) is a short-lived species (approximately one year) and exhibits an annual population flux, with the population in the fall being larger than that in the spring due to natural die-off during the winter months. The population of pupfish has never exceeded 553 individuals since surveys began in 1972. From the late 1970s through 1996, the population appeared to be relatively stable with an average size of 324 individuals. The population from 1997 to 2004 declined from an average of 275 individuals to 171 fish for unknown reasons. In August and September 2004, two separate rainfall events deposited 1.66 cubic meters of sediment on the main spawning shelf, causing a loss of approximately half of the pupfish spawning habitat. Subsequent multi-agency restoration efforts are believed to have restored much of the pupfish's habitat on the shelf. Unfortunately, the population continues to decline for unknown reasons. The adult population count conducted in November 2005 indicated only 84 individuals, and an April 2006 survey indicated an adult population of 38 individuals, the lowest count on record.

(Excerpted from: Ritter, Ken. 2006.

<http://abcnews.go.com/Technology/wireStory?id=1984033>  
and [http://www.fws.gov/nevada/protected\\_species/fish/species/dhp/dhp.html](http://www.fws.gov/nevada/protected_species/fish/species/dhp/dhp.html)).

### New Species of Dipluran Discovered in Vancouver Cave

**Vancouver Island, Canada** — Craig Wagnell was actually trying to take a picture of something very, very old when he accidentally snapped a shot of something he believes is

completely new. The Port Alberni caver thinks he has discovered a new species of insect inside a cave in the karst formations above Sproat Lake, and one of the top experts in the field believes he's right. Wagnell, who heads up the Central Island Caving Club, says he found the insect, a unique form of two-pronged bristletail cave insect called campodeid diplurans in 2004, but only now is revealing its existence after receiving strong support for his contention that he is on to something entirely new.

The cave, the exact location of which he's keeping under wraps, is a treasure trove of fossils that literally stick out of the walls, with the soft limestone worn away around them. "They were perfect shells extruded out of the rock," he says. "I was taking pictures of some of the ammonites and I noticed a little white bug running across my field." The creature was nothing more than a minor annoyance until Wagnell blew up his photos on his computer and realized he had never seen anything quite like it in his over 20 years of caving experience. After searching on the Internet and networking with various experts, he got in touch with Dr. Lynn Ferguson, who is professor emeritus of Biology and Earth Sciences at Virginia's Longwood University. He sent a photo of the creature to Dr. Ferguson, who expressed keen interest in the find and urged him to capture a live specimen.

"He told me to use blue cheese in live traps, because diplurans eat organic matter that washes into the caves," Wagnell says. "None of my traps worked, but while I was checking I looked to the side and noticed another white thing running around." Wagnell was able to collect a total of six specimens, which he carefully prepared and sent to Virginia. The response was even more encouraging.

"After mounting the specimens on microscope slides and examining them, I determined that Mr. Wagnell had discovered a previously undescribed new species of dipluran, belonging to the genus *Haplocampa*," Dr. Ferguson says. "It is probably safe to consider the species as a troglobite, or true cavernicole, an animal adapted to live only in caves." Currently, he says, there are two species of *Haplocampa* known on Vancouver Island, although others can be found in Banff National Park in Alberta, which Ferguson says served as a refuge for small arthropods during the last glacial period. Species of *Haplocampa* also exist in caves and lava tubes in Washington, Oregon, Idaho and northern California. "Mister Wagnell's discovery is an important new addition to our knowledge of the cave fauna of North America," he says.

(Excerpted from: Horner, Neil. 2006.

<http://www.pqbnews.com/portals-code/list.cgi?paper=50&cat=46&id=642465&more=>>).

### Unique Ecosystem Discovered in Israeli Cave near Jerusalem

**Jerusalem, Israel** — Israeli scientists said on Wednesday they had discovered a prehistoric ecosystem dating back millions of years. The discovery was made in a cave near the central Israeli city of Ramle between Jerusalem and Tel Aviv, during rock drilling at a cement quarry. A small opening was uncovered at the quarry, leading to the cave, which extends more than 300 feet below the surface. The

newly named Ayalon Cave stretches for about 1.5 miles and is "unique in the world," said Amos Frumkin of the Hebrew University Department of Geography. The limestone cave has long been sealed off from its surroundings — even outside water cannot seep through an overlying layer of impermeable chalk — and it contains an entire ecosystem unlike anything known.

Soon after the cave was uncovered, scientists were called in and discovered eight previously unknown species of seawater and freshwater crustaceans in underground lakes, as well as a terrestrial scorpion that, owing to the eternal darkness in the cave, is blind. The new species were all found alive except the scorpion, but live scorpions will be found in further expeditions, said university researcher Hanan Dimantman, a biologist at the Hebrew University of Jerusalem. He said the cave's ecosystem probably dates back around five million years when the Mediterranean Sea covered parts of Israel. The underground lake in which the crustaceans were found is part of the Yarkon-Taninim aquifer, one of Israel's two aquifers, yet is different in temperature and chemical composition from the main waters of the aquifer. The lake's temperature and salinity indicates that its source is deep underground.



Crustacean found in Ayalon Cave, Israel. Photo by Sasson Tiram.

Scientists who discovered the cave believe it has been intact for millions of years. "Every species we examined had no eyes which means they lost their sight due to evolution," said Dimantman. Samples of the animals discovered in the cave were sent for DNA tests which found they were unique, he said. The cave has been closed off as scientists conduct a more detailed survey. "This is a cave of fantastic biodiversity," Dimantman said.

(Excerpted from: Britt, Robert Roy. 2006.

<<http://www.foxnews.com/story/0,2933,197667,00.html>>

and <[http://news.yahoo.com/s/nm/20060531/ts\\_nm/science\\_israel\\_cave\\_dc](http://news.yahoo.com/s/nm/20060531/ts_nm/science_israel_cave_dc)> and <<http://www.sciencedaily.com/releases/2006/05/060531094605.htm>>).



## Cave Archeology

### Experts Uncover Rare Finds in French Cave

**Vilhonneur, France** — A 27,000-year-old human skeleton laid out in a room decorated with ancient art was among the rare finds at a cave in western France whose subterranean art predates that of the famed Lascaux caves, officials said on Friday. It was only the second time that a human body from the upper Paleolithic period had been found placed in a cave with decorations, the Culture Ministry said. The state took over ownership of the cave in the Vilhonneur forest on May 12, according to a ministry statement. A crude representation of a human face found in the cave could be among the oldest ever discovered, said Jean-Yves Baratin, archaeology curator for the Poitou-Charentes region. The face is "represented in the most elementary way, using an anomaly of the wall," Baratin said. Two pieces of calcite that split are used to form the hair with two black horizontal strokes depicting the eyes. A vertical stroke forms the nose and another horizontal stroke the mouth.



Hand print from Vilhonneur Cave, France.

Cavers exploring part of a grotto once used to dispose of animal carcasses discovered the cave in December. It dates to the upper Paleolithic period roughly 25,000 years ago, like the skeleton. It's discovery was announced in February but it was not until Friday that precise information about some of the finds was divulged. Baratin underscored the significance of the human skeleton, a young male, placed on the ground inside a decorated room. The only other instance in which a body was known to have been found in a decorated room of a cave is in the hamlet of Cussac, a grotto that experts have said was as important for engravings as paintings are for the famed Lascaux caves. The archaeologist said two rib bones were analyzed at a laboratory in Miami, Florida, dating the skeleton at 27,000 years. The Vilhonneur cave features a series of decorations, including a negative imprint of a right hand, surrounded in black, on a wall, made by blowing color onto the area once the hand has been placed there, experts said. Five skeletons of young hyenas were found in another room.

The famed Lascaux Cave in Montignac, in the south west

Dordogne region, has long been considered one of the finest examples of cave paintings. However, that art dates to 13,000 years, making the Vilhonneur art much older. Another cave, Chauvet, discovered in the mid-1990s in south east France, features some 300 examples of Paleolithic animal art, some dating back 31,000 years. Experts plan to secure the Vilhonneur cave and carry out research likely to last several years.

(Excerpted from: <<http://breakingnews.iol.ie/news/story.asp?j=184746080&p=y84746786>>).

### **Fungus Invades Lascaux Prehistoric Art Caves**

A pernicious white fungus has spread "like snow" in the caves of Lascaux in France where the fabulous rock art has been described as the "Sistine Chapel of prehistory". The fungus is believed to have been introduced after contractors began to install a new air conditioning system that was meant to preserve the precious 17,000-year-old cave paintings from the heat and humidity generated by their many visitors. The historical importance of Lascaux is immeasurable and any damage to its art would have serious repercussions given the cave's status as an evolutionary icon for the development of human art and consciousness.

Some experts who have seen the damage claimed that the French authorities had deliberately played down the scale of the problem because of their embarrassment at allowing it to happen to a World Heritage Site. At one time, the fungus covered the floors of the entire cave system near Perigueux in the Dordogne in central France, although the curator of Lascaux insisted yesterday that the infestation had now been brought under control. "The fungus appeared very suddenly. All the floor was covered as if in snow, but only the floor, not the paintings on the walls," said Dr Jean-Michel Geneste, director of the French government's National Centre for Prehistory. "We think that now there is no risk to the paintings. A few years ago we thought there would be a risk to them because of this fungus."

However, other visitors to the caves are not convinced that the fight against the fungus, which first appeared in 2001 just months after a new air-conditioning system was installed, has been won. "They tell us the cave's condition is stable. But that's what they say about Ariel Sharon," said one anonymous expert quoted in a special report by Time magazine. The magazine also claims that French officials last month admitted for the first time that the fungus had spread from the floor to the wall paintings. One photograph published by Time shows the fungus apparently attacking a prehistoric horse painted on one of the walls of the cave's main gallery.

Teams of scientists are working in shifts to carefully remove visible filaments of the fungus - a species identified as *Fusarium solani* - by meticulously plucking them from the wall of the cave by hand, the magazine says. "One knowledgeable visitor to the cave last month not only saw *Fusarium* on the paintings, but noticed a greyish tinge to formerly black surfaces where growths had been removed," the magazine says. The archaeologist Paul Bahn, an expert on cave art, said: "This is extremely worrying. If the fungus is reaching the paintings, it's potentially catastrophic." But

Dr Geneste denied that there had been any damage to the painted figures of prehistoric bulls, horses and reindeer which are depicted running across the cave's walls and ceilings. "The paintings are really fresh. There is no damage to the paintings, although there was a danger if the fungus was allowed to develop over many years," Dr Geneste said yesterday.

The fungus first appeared in 2001 and its sudden growth coincided with work to install a new active method of conditioning the internal atmosphere of the cave using fans to draw air through the underground cavern. To accommodate the machinery, the contractors removed a roof over the entrance but a torrential downpour caused rainwater and mud to be washed into the cave, possibly introducing fungal spores in the process. "The construction site was run like someone redoing a bathroom. The entrance to the cave was like a swamp and there was construction waste all over the place. It was like an apocalyptic vision," Rosalie Godin, a local art restorer, told Time. Eventually the fans were taken out and the cave's curators were faced with the difficult job of trying to fight the fungus with antibiotic chemicals applied to the walls and quicklime spread on the floor, neither of which proved a success.



Panel from the Great Hall of The Bulls, Lascaux Cave, France.

In the end Dr Geneste said that the best method turned out to be the mechanical removal of fungal filaments by hand, with the help of a special vacuum cleaner. The device directs a high-pressure spray at the fungus which is then immediately sucked into sealed bottles that are removed from the cave.

(Excerpted from: Connor, Steve. 2006.

<<http://news.independent.co.uk/europe/article363120.ece>>).

**Note:** To learn more about Lascaux Cave, and take a virtual tour of the prehistoric art, see the extraordinarily well-done website by the French Ministry of Culture and Communication at <<http://www.culture.gouv.fr/culture/arnat/lascaux/en/>>.

### **Tales of the Sinkhole:**

#### **Charleston Sinkhole Becomes Avant-Garde Art**

**Charleston, SC.** — The Spoleto Festival USA arts extravaganza is still a couple of weeks away in Charleston, but some city residents are turning a sinkhole on St. Phillip Street into an outdoor art installation. Initially, a potted plant was placed in the two-foot deep sinkhole by someone with a sense of humor. That was followed by a white plastic lawn chair. There's also been bricks, broken asphalt, a beer bottle and an empty bottle of fluorescent dye added to the piece.

Unfortunately, crews from the Charleston Water System ended the display Tuesday by placing traffic cones around the sinkhole and later covering it with a large steel plate.

(Excerpted from:

<http://www.wistv.com/Global/story.asp?S=4884643>>).

## **International News**

### **To the Depths of Zacaton and Beyond**

The search for life beneath the icy crust of Europa, one of Jupiter's moons, is beginning in an unlikely place – 1,140 feet below the Earth's surface. On a private cattle ranch in the coastal plains of northeast Mexico lies the one of the world's deepest sinkholes. The sinkhole is called El Zacaton, named for the islands of tall, floating grass, or zacate, drifting across its sulfury waters. Carnegie Mellon University engineers are working on a new robot they hope will unlock the ancient secrets of Zacaton during a three-month field expedition planned for December.

What they learn from the sinkhole could help scientists unravel one of the greatest mysteries of the cosmos: Is there life beyond Earth? "We're not just going down to explore caves but to show that this could have applications far beyond that," said Marcus Gary, a doctoral student in hydrogeology at the University of Texas at Austin and the project's logistics coordinator. Scientists hypothesize that the sinkhole -- or cenote, in Spanish – began forming about 330,000 years ago when volcanic activity changed the water chemistry and rapidly dissolved limestone rocks deposited during the age of the dinosaurs. Divers have explored Zacaton for decades, but a turning point came on April 6, 1994, when cave-diving pioneers Jim Bowden and Shek Exley strapped on scuba tanks and tried to reach Zacaton's elusive bottom. Bowden made it to a depth of -925 feet – a world record for deep-water diving since broken – but tragedy overshadowed his feat. Exley did not return to the surface.

Understanding this strange, upside-down Everest would require more than traditional cave-diving methods, said Gary, who served as Bowden's engineer during his record-breaking dive. The Deep Phreatic Thermal Explorer – or DepthX – project was launched two years ago with the goal of building a fully autonomous robot to find the bottom of Zacaton, construct 3D maps of the cenote and sniff out microbial life in its 90-degree waters. "We thought it would be really cool if we had a robot that could not only map the geometry of the cenote, but also do some other things," Gary said. Researchers from five institutions – including CMU – are working on the project, which is being paid for by a three-year, \$5.3 million grant from the Astrobiology Science and Technology for Exploring Planets program under the National Aeronautics and Space Administration.

It might seem unusual that the federal agency dedicated to exploring the heavens would show interest in a sinkhole deep in the Earth. The technologies used to explore Zacaton could have applications on Europa, one of Jupiter's largest moons. Where there is water, there is a chance of life, even if it is just the extraterrestrial version of pond scum. Scientists do not have concrete evidence that an ocean exists beneath Europa's crust. Yet data from NASA's Galileo

spacecraft show near-surface melting and movements of large blocks of ice, suggesting subterranean water. Upping the ante are signs of volcanic activity on Europa, which could keep the water from freezing and supply dissolved chemicals needed to support life.

Similarly, underwater volcanoes and hydrothermal springs on Earth – like those suspected to have formed Zacaton – create environments that sustain rich colonies of chemical-eating microbes. "Whether there's life beyond Earth or not -- that's every kind of question," said David Wettergreen, a research scientist at CMU's Robotics Institute, who is overseeing the university's involvement in the DepthX project. "It's philosophical, it's religious, it's scientific, it's statistical. What better kind of question is there?" Wettergreen was project leader for the team that built the four-wheeled, solar-powered robot named Zoe that recently completed its search-for-life mission in Chile's Atacama desert, the driest place on Earth and an analogue for Mars. He and his CMU colleagues are developing software to give the DepthX robot a brain so it can map the underwater cave.



El Zacaton, Mexico. Photo by Art Palmer.

DepthX represents an even bigger challenge than Zoe, just as a mission to Europa's oceans would be tougher than exploring Mars, said Michael Wagner, a senior research programmer at CMU involved with both projects. "Zoe explored the Atacama desert, but people had seen the Atacama desert before," Wagner said. "This is really one step further. No one has seen the bottom of the cenote. It's like a space mission, but on Earth." The battery-powered DepthX vehicle must be able to monitor its own health and troubleshoot problems, decide where to collect samples for testing, and navigate for hours on its own, Wagner said. The result is a robot that looks like a cross between the Death Star from "Star Wars" and an orange M&M as big as a Volkswagen Beetle. The flattened, leakproof sphere is lined with sonar panels for mapping and navigation. It also houses microscopes and cameras needed to search for bacteria and other forms of life in the cenote.

Early field trials in May 2005 allowed scientists to map the sinkhole to about -918 feet using a stripped-down sonar system lowered into the water with a winch. On the last day, they caught a tantalizing glimpse of what could be a tunnel extending from the western side of the cenote, Wagner said. "It was like the perfect cliffhanger," Wagner said. "With DepthX, we hope to influence the way a Europa mission would work, and because we are doing it early, I think we could really have an impact."

(Excerpted from: Bails, Jennifer. 2006. [http://www.pittsburghlive.com/x/pittsburghtrib/news/cityregion/s\\_451536.html](http://www.pittsburghlive.com/x/pittsburghtrib/news/cityregion/s_451536.html))

**Note:** For more information on Sistema Zacaton and the ongoing studies being conducted there, see Marcus Gary's website at <<http://www.geo.utexas.edu/zacaton/main.htm>>.

**Techniques and Gear**

**More on the Potential Hazards of the Petzl Ascender**

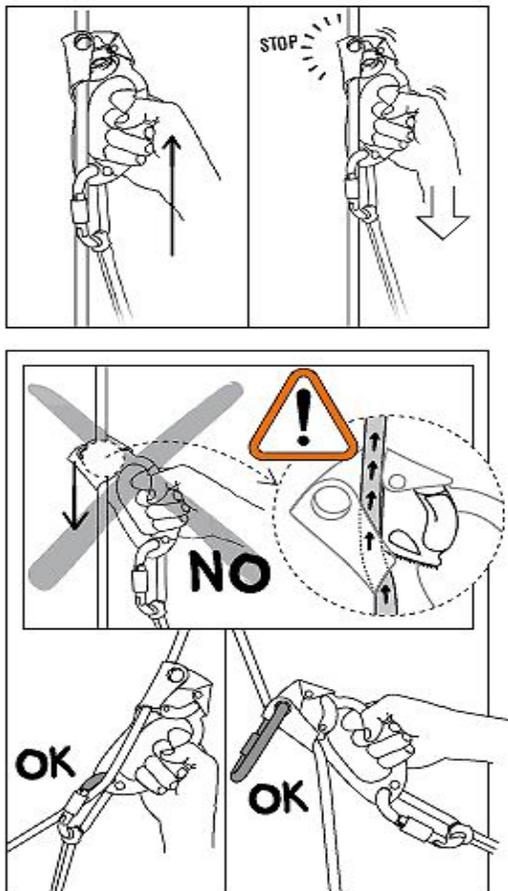
**Design**

Recently, Petzl placed the following technical notice on their website, apparently in response to the growing concerns regarding the potential of their ascender to detach from the rope under load:

**ASCENSION / BASIC B17 / B18**  
**Improper loading can prevent the ascender from**  
**grabbing the rope**

The ASCENSION and BASIC ascenders are designed to be loaded in a direction parallel to the rope; if loaded at an angle to the rope, the cam may not correctly engage the rope and slippage can occur (See the diagram).

**To limit the risk of slippage due to improper loading,** attach yourself to the rope with two ascenders, each with its own lanyard, load the ascender in a direction parallel to the rope, if you cannot load the ascender in a direction parallel to the rope, clip a carabiner through the two top holes of the ascender, making sure the rope is captured inside the carabiner, or pass the rope through the lanyard carabiner (see diagrams opposite).



**Product information:**

Even though slippage can occur with any ASCENSION or BASIC ascender, it is more likely to happen with the first series of ascenders having a polycarbonate trigger, introduced in 1998. Specifically, those with the following serial numbers:

**B17 R** from 97206 to 99109

**B17 L** from 97253 to 99091

**B18** from 97308 to 99112

The serial number is stamped on back of the product, near the top. In 1999, modifications were made to the trigger and return spring to help reduce the risk of slippage. But the downside of these modifications is greater difficulty in opening the cam and sliding the ascender down the rope. If you would like, we will make these modifications free of charge to any ascender having a serial number within the ranges listed above. To have this done, send the ascender(s) to Petzl SAV, ZI Crolles, 38920 Crolles, France, or to the distributor in your country. Petzl reserves the right to refuse to modify worn-out product.

(From: <<http://en.petzl.com/petzl/SportNews?News=142>>).

**Caving Philosophy**

**The Results of Last Month's Poll of "What If ?"**

You may recall from last month's newsletter that a large group of people were asked the following question:

"An enormous rock falls and blocks the exit of a sea cave you and five other tourists have been exploring. Fortunately, you spot a hole elsewhere and decide to let "Big Jack" out first. But Big Jack, a man of generous proportions, gets stuck in the hole. He cannot be moved and there is no other way out.

The high tide is rising and, unless you get out soon, everyone but Big Jack (whose head is sticking out of the cave) will inevitably drown. Searching through your backpack, you find a stick of dynamite. It will not move the rock, but will certainly blast Big Jack out of the hole. Big Jack, anticipating your thoughts, pleads for his life. He does not want to die, but neither do you and your four companions. Should you blast Big Jack out?"

The results: 75 percent said yes, blow Big Jack out of the hole with dynamite; 25 percent said no of 51,107 votes cast in a recent poll conducted by the BBC's *Magazine*. It's expected but nonetheless puzzling that the majority of those polled were not willing to push a fat man off a bridge, but were willing to blast him out of a cave to save five people. What are the relevant differences, if any, between the previous case and this one? Is it that you are trapped and self-preservation prevails?

(Excerpted from: Sokol, Daniel. 2006. <[http://news.bbc.co.uk/2/hi/uk\\_news/magazine/4971902.stm](http://news.bbc.co.uk/2/hi/uk_news/magazine/4971902.stm)>).

### Announcements

#### Bracken Bat Cave Project

Starting on 3/4 June we hope to start a resource management project on the 696+ acres at Bracken Bat cave. Help will be needed to hike control areas of the natural area. We need untrained folks, folks with GPS's, people with digital cameras (bring download cable if you don't have a removable chip), and some with compasses. Anyone just wishing to go hiking for a half day welcome (temperature dependent). Hang around for the bat flight that evening. Fluids will be provided.!!! Recognition training for what we are looking for will be provided. Camping can be provided if needed. Start time 0800, yes 8AM (again the temp) The more folks we have the more areas we can cover. Any questions please feel free to contact Bob Cowell <bcow911@aol.com>, Fran Hutchins <hutchins@texas.net> or Kurt Menking <kmenking@bcad.org>.

#### Twelfth International Symposium on Vulcanospeleology

The Twelfth International Symposium on Vulcanospeleology will be held in Tepoztlán, Mexico, just south of Mexico City, July 3-8, 2006. The Association for Mexican Cave Studies is helping sponsor this event; it will publish the proceedings as an AMCS Bulletin and provide copies to the registrants after the event (sometime this fall). Further information on the Symposium is at <www.saudicaves.com/symp06>. I have just sent to the printer an AMCS Bulletin on lava tubes in the area of the symposium. The author is Ramón Espinasa, co-chairman of the symposium. The publication is a joint one with the Sociedad Mexicana de Exploraciones Subterráneas and will be for sale at the symposium. If you are driving from the U.S. down to the symposium and can take a couple of boxes of books with you, please contact me and I'll have the printer ship some directly to you.

Bill Mixon, AMCS Editor

<editor@amcs-pubs.org or bmixon@alumni.uchicago.edu>



#### EspeleoCoahuila 2006

The Asociación Coahuilense de Espeleología, AC (ACEAC) is pleased to announce EspeleoCoahuila 2006, to be held 19-20 August 2006. This event will be held in Saltillo, Coahuila at the auditorium of the Secretaria de Seguridad Pública y Protección Civil. This is the third consecutive year of EspeleoCoahuila, and this year will feature conferences on a wide variety of themes relating to cave exploration and rescue. Registration for EspeleoCoahuila will be 350 pesos

(about \$32). Details will be posted at <http://www.oztotl.com/ps/EC/>, (English) and <http://scintilena.clarence.com/permalink/219095.html> (Spanish). Contacts: Monica Ponce <mgpg7@yahoo.com>, or Peter Sprouse <petersprouse@yahoo.com>.

#### Strickland Pond Party, Austin, Texas

The POND PARTY (the big event of the summer) will be Saturday July 15th, 2006. Sunday Swims (smaller events with no organized food or drinks) will be June 11th, 18th, 25th, July 2nd, 9th, 23rd, and 30th. For more information call Pete Strickland at (512)-258-8384.

#### Website for 15th International Congress of Speleology

The 15th International Congress of Speleology will be held in Kerrville, Texas, USA on 19-26 July 2009. Since it is never too early to begin preparing for a great event, the website for the Congress is now available with all of the latest information so you can start planning to attend. The goal of the website is to stay so up to date that if you don't find the information you need there, then it is likely that the information is not yet available (although you're always welcome to contact us and check).

The website is in English. Our summary leaflet is available as PDFs in French, German, and Spanish. The leaflet is currently being translated into Italian and will be posted as soon as it is ready. Later this summer, print-quality versions of the leaflets will be available on the web too. By the end of September, the entire website will be available in French, German, Italian, and Spanish.

We encourage you to visit the website and bookmark it for future reference: <www.ics2009.us>. If you want to be certain you receive all updates on the Congress or are interested in helping, contact us at <secretary@ics2009.us>.

We look forward to seeing you in Kerrville in 2009!

George Veni

Chairman, 15th International Congress of Speleology  
Adjunct Secretary, International Union of Speleology



## Caving Calendar

**Note: Effective May 23, 2006**, Lincoln National Forest in New Mexico is closed until further notice due to the exceptional fire danger. For details, see : <<http://www.fs.fed.us/r3/lincoln/>>.

**June 3-4, 2006 : Bracken Bat Cave Project.** Start-up of resource management project at Bracken Bat Cave. Begins at 8 AM Saturday morning. Fluids provided. See announcement in this newsletter. **Contacts:** Bob Cowell <[bcow911@aol.com](mailto:bcow911@aol.com)>, Fran Hutchins <[hutchins@texas.net](mailto:hutchins@texas.net)> or Kurt Menking <[kmenking@bcad.org](mailto:kmenking@bcad.org)>.

**June 14, 2006 : Texas Speleological Survey Work Session (Austin).** Held at the TSS office in Austin from 5:00 to 8:00 p.m. Come help with the organization of Texas cave information. **Contacts:** Jim Kennedy (512)-663-2287 <[jkennedy@batcon.org](mailto:jkennedy@batcon.org)> or Ron Ralph <[ronralph@austin.rr.com](mailto:ronralph@austin.rr.com)>.

**June 24-25, 2006 : Robber Baron Cave Restoration Project (San Antonio).** Final phase of TCMA's Robber Baron Cave entrance restoration project. For details, see announcement in this newsletter. **Contact:** Linda Palit <[lkpalit@sbcglobal.net](mailto:lkpalit@sbcglobal.net)>.

**July 3-8, 2006 : XII International Symposium on Vulcanospeleology (Tepoztlán, Mexico).** Sponsored by the UIS Commission on Volcanic Caves, SMES (Sociedad Mexicana de Exploraciones Subterráneas), and Grupo Espeleológico ZOTZ. Two days of formal presentations and three days of field trips including a trip to the longest lava tube in America (Iglesia Cave at ~6 km). For details, see: <[www.saudicaves.com](http://www.saudicaves.com)>.

**August 7-11, 2006 : NSS Convention (Bellingham, Washington).** The 2006 NSS Convention will be hosted at beautiful Western Washington University. The university is located between the Puget Sound and the Cascade Mountains, just outside of downtown Bellingham. Situated between Seattle, Washington and Vancouver, British Columbia, the spectacular surroundings of this region will make a stunning backdrop for the convention. For more information, visit the website at <[www.nss2006.org](http://www.nss2006.org)>. **Contact:** Michael McCormack (Chairman) <[michmcco@exchange.microsoft.com](mailto:michmcco@exchange.microsoft.com)>.

**August 18-20, 2006 : EspeleoCoahuila 2006 (Saltillo, Mexico).** This year's event will be held in Saltillo, Coahuila at the auditorium of the Secretaria de Seguridad Pública y Protección Civil. For details, see announcement in this newsletter and also the websites <<http://www.oztotl.com/ps/EC/>>, (English) and <<http://scintilena.clarence.com/permalink/219095.html>> (Spanish). **Contacts:** Monica Ponce <[mppg7@yahoo.com](mailto:mppg7@yahoo.com)>, Peter Sprouse <[petersprouse@yahoo.com](mailto:petersprouse@yahoo.com)>.

## 2007

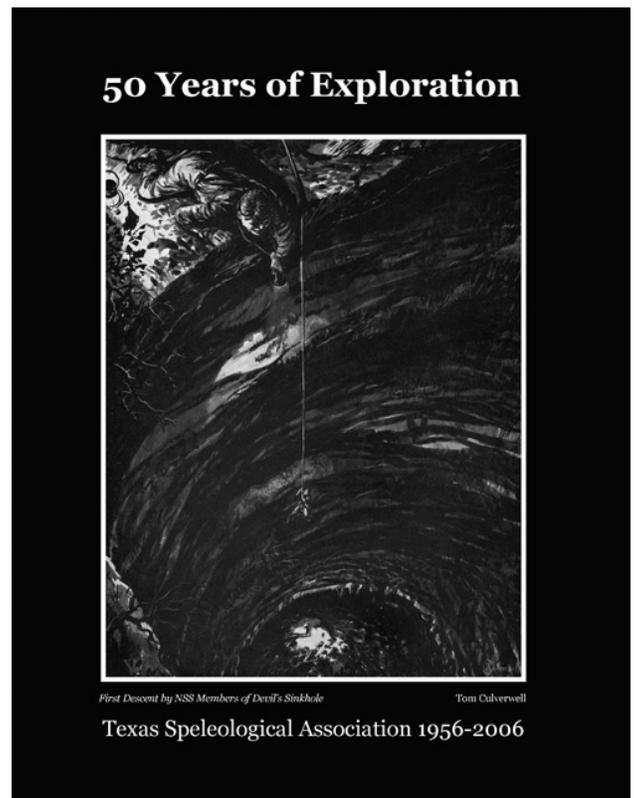
**August 13-19, 2007 : International Conference on Karst Hydrogeology and Ecosystems (Bowling Green, KY).** The conference will be held at Western Kentucky University in Bowling Green, Kentucky, August 13-15, followed by a four-day field trip (August 16-19) to the karst of the Cumberland Plateau and southern Appalachian Mountains of Kentucky and Tennessee. For details see : <<http://hoffman.wku.edu/karst2007/k2007.html>>.

## TSA 50th Anniversary Commemorative Poster

The Texas Region of the NSS came into being in March 1956 when 56 cavers from around the state met in Austin to elect officers for the newly formed organization. In September of that year, the first Regional Convention was held in Rocksprings, Texas. A field trip was made to the Devil's Sinkhole and several of the local townspeople were lowered into the cave.

To celebrate the 50th anniversary of the formation of a state-wide caving organization in Texas, the TSA has printed a commemorative poster. The artwork depicts the first descent by organized cavers into the Devil's Sinkhole in 1947 by the cave artist Tom Culverwell, and first appeared in the famous NSS Bulletin 10, *The Caves of Texas*. Thanks to both the NSS and Bill Steele, the original artwork was made available to the TSA.

You can obtain a copy of this beautiful poster for \$5 from the TSA Store or the Devil's Sinkhole Visitors Center in Rocksprings, Texas.



### **From the Editor of the TSA Activities Newsletter**

The *TSA Activities Newsletter* is an adjunct publication to the *Texas Caver*, the official publication of the Texas Speleological Association. The ANL's purpose is to provide a timely forum for Texas caving news, events, and announcements that cannot be shared with the general caving community through the *Texas Caver*. The *Texas Caver* is a bi-monthly publication at best, and has a history of dependable tardiness. The intent of the ANL is to fill these communication gaps, but not to replace the *Texas Caver*. The TSA encourages cavers to continue to support the *Texas Caver* by sending in trip reports, articles, and photographs to the *Texas Caver* editor(s) that are not suitable for publication in the ANL.

It is the intent of the editor to post the ANL monthly to the TSA website. Due to the prohibitive cost of printing and mailing a monthly hardcopy publication, the ANL will be distributed to all cavers in a digital pdf format which can be downloaded free-of-charge from the TSA website at <http://www.cavetexas.org/>.

As in all endeavors of this sort, a large part of its future success will be based on whether people contribute material. Please send all grotto announcements, calendar events, general caving news and information items that you would like to have included in the ANL to: Jerry Atkinson <[jerryatkin@aol.com](mailto:jerryatkin@aol.com)>.

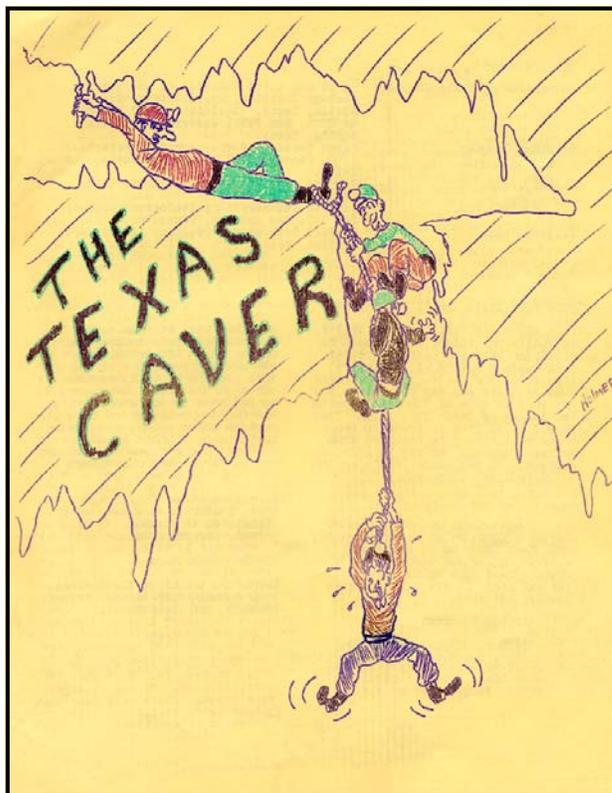
Editor : Jerry Atkinson  
Editorial Staff : Carl Kunath

TSA website : <http://www.cavetexas.org/>

#### **2006 TSA Officers**

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Cover from the June 1956 issue of the *Texas Caver*.