



News & Notes

TSA Affairs

2007 TSA Officer Nominations

All,

John Brooks, current Chair of the Texas Speleological Association, has requested that I head up the Nominations Committee and begin soliciting your inputs for candidates for Officers for 2007 for the TSA. Elections will be held at the TCR, October 20-22, or by mail in ballots. An announcement of the slate of officers and a ballot also will be sent out in the next *Texas Caver*. Officer nominations may be made by any TSA member in good standing (read "paid up on your dues"). Provisions will be made on ballots for write-in candidates. If a TSA member is nominated for more than one office, that candidate must choose to run for only one of the offices. Nominees do not have to be TSA members, but must be NSS members. If elected, the nominee must join the TSA.

The positions open for nomination and the description of what the position entails are listed below:

1. The **Chairman**, when present, shall preside over all TSA meetings.
2. The **Vice-Chairman** is responsible for meeting and program arrangements and shall preside at TSA meeting in the absence of the Chairman.
3. The **Secretary** records the minutes of TSA meetings and maintains a current list of members.
4. The **Treasurer** keeps track of TSA assets by maintaining adequate financial records, including those for *The Texas Caver*.

The Treasurer prepares a budget for the fiscal year, maintains the membership database, and insures the database is available electronically to the membership. Elected officers shall take office on the first day of the New Year.

Please give careful consideration to nominating an individual who will exceed at their position and will do their utmost to promote the ideals of the TSA: Cooperation of cavers, coordination of activities, and the conservation of caves in Texas!

We are all in this cave together!

Thanks, Mark Alman
TSA Nominations Committee Chair
Editor - *The Texas Caver*

TSS Affairs

Fall TSS Board Meeting

The TSS will be having its board meeting on Saturday, 9 September 2006, at 1030 A.M. at the TSS office in Austin, Texas. Everyone is welcome to attend and participate. The purpose of TSS is to maintain and organize the files on Texas caves and publish reports on Texas caves. We have a

lot of projects going on, including several upcoming reports, and we welcome anyone who wants to help.

The meeting will probably last until about 2-3 P.M., including a break for lunch. We'll collect \$5/person and send someone for pizza. After the meeting we will work on publications and organizing data. This is a great opportunity for you to see what the TSS has to offer and pick up some interesting leads to check out.

Access to UT's Pickle Research Campus, where the TSS office is located, is only granted on the weekends to those on the gate guards' approved list. To get on that list, let me know that you plan to go by Monday evening, 4 September. If you find out after the 4th that you can attend, let me know and I'll find someone on the approved list with whom you can ride onto the Pickle Campus. **Contacts:** George Veni <gveni@satx.rr.com>, Jim Kennedy (512)-663-2287 <jkennedy@batcon.org> or Ron Ralph <ronralph@austin.rr.com>.

TCMA Affairs

Devil's Sinkhole LiDAR Project

Folks,

I wanted to give you an update on the LiDAR Project that Allan Cobb (TCMA), Jerry Bellian (Texas Bureau of Economic Geology) and I have been working on. We have currently raised the necessary funds to start the project. We have received very generous donations from the following groups: Texas Parks and Wildlife, Bat Conservation International, National Speleological Society Research Grant, Devil's Sinkhole Society, National Cave and Karst Research Institute, George Veni and Associates, and TCMA. In addition, Jerry Atkinson and Don Auburn have made very generous donations. THANK YOU.

What is the Devil's Sinkhole LiDAR Project? This is a partnership between the Texas Parks and Wildlife Department (TPWD), the Texas Bureau of Economic Geology (TBEG), and the Texas Cave Management Association (TCMA) to produce a very high quality three dimensional map of the Devil's Sinkhole. TCMA will provide the project management and accounting and volunteer labor, TPWD will provide park personnel and access to the cave and TBEG will provide the LiDAR unit, operator, and the finished product. The TCMA has obtained a very good deal from TBEG to provide the LiDAR service, use of the instrument, operator, etc. and if the TBEG "World of Water" exhibit at the Witte Museum is any indication, we should get a fantastic product from the TBEG. The map will be used at the Devil's Sinkhole Visitors Center as well as other possible applications.

LiDAR is a technique that allows very detailed mapping of a physical object using lasers that can pinpoint the distance, direction, and reflectivity of a surface. The intent

of the project is to create 3-D map of the cave which can be used for educational purposes by the Texas Parks and Wildlife Department as well as the Devil's Sinkhole Society. This is a major undertaking and involves a great deal of work at the cave as well as processing in the lab. Not only does the LiDAR process create a map but it can also be used to calculate area and volume of the cave. This data may help provide better estimates of the size of the bat population as well as the size and rate of collapse of the breakdown at the bottom of the cave to looking at the geology and stratigraphy of the cave. If there is sufficient funds available, we may also map Kickapoo Caverns or Bracken Bat Cave.

We are asking cavers to provide volunteer labor to help support the project. We have tentatively agreed on three dates for the fieldwork.

November 11-12

December 2-3

January 6-7.

Allan, Jerry, and I have been working on putting together a list of tasks that need to be done with job descriptions. We may need from 10 to 25 folks for the project each weekend. For example, we may need the following positions. We won't necessarily need all of these positions for each of the work weekends.

Operations Manager Topside

Operations Manager Bottom

Safety officer Topside

Safety officer Bottom

LiDAR Crew (4 people)

Photography Crew (2-6 people)

Exploration Team (2-4 people)

Public Relations Officer

Survey Crew (3 people)

General labor (3-6 people)

Camp Manager (1 person)

Camp Cooks (2-3 people)

Physical Therapist (for the old geezers)

Camp Masseuse Topside (also for the old geezers)

Camp Masseuse Bottom (yeah, I know what your thinking but we run a clean operation here)



Devil's Sinkhole (Travis Scott)

There will be plenty of work for people who are interested in entering the pit as well as on the surface. We are in the process of preparing a Health and Safety Plan (HSP) to

direct the project and everyone attending the project must read and sign the HSP before they will be allowed to participate. There will also be a couple of liability releases. We are planning on providing food for the participants during the event. Volunteers will be required to provide their own beverages of choice.

To enter the pit, you must at a minimum be able to rappel, ascend, perform a change over, climb the pit in less than <30 minutes, and take more than 3 minutes to descend the pit. Volunteers must be experienced vertical cavers, have their own vertical equipment including a quick attachment safety and know how to use it. You may be required to demonstrate your skills. Also, all personal equipment will be inspected. Safety is first while working on this project.

So, if you are interested in helping on the project, as well as visiting one of the classic caves in Texas, please send me an email stating your interest, basic qualifications, what weekends you'll be available, and if you have a particular job interest.

Thanks, Geary Schindel, Allan Cobb, Jerry Bellian

Robber Baron Cave Restoration Project

There will be a Robber Baron Cave Restoration work day on Saturday, September 23rd. Plans are to work on the steps leading down into the sinkhole, and other grounds work as needed. Contacts: Linda Palit <lcpalit@sbcglobal.net> or Joe Mitchell <joe-elynn@satx.rr.com>.

TCR Affairs

29th Annual Texas Caver Reunion

Howdy Y'all,

It is that time of the year to announce the location and date for TCR 2006. The 29th Annual TCR will be on the weekend of October 20-22. We are returning to Honey Creek Ranch for all of our fun and festivities. We will have some trips into Honey Creek Cave for those who feel the need to get underground as well as many fun and exciting things above ground. For the latest information about TCR 2006, visit the website at <www.oztotl.com/tcr>. Start making your plans to attend and help make this the best TCR ever!

See y'all there...

Allan Cobb



Honey Creek Cave (Peter Sprouse)

TCC Affairs

TCC Wins Cave Conservation - Cave Management

Award

The Texas Cave Conservancy was awarded the 2006 National Speleological Society Group Cave Conservation - Cave Management Award at the NSS Banquet, August 11, 2006, in Bellingham, Washington. The Texas Cave Conservancy was represented at the NSS Banquet by over fifty Associates from around the country. Thanks goes out to all of the 200 TCC Associates in Texas and around the country that helped us to receive this, the nations highest caver conservation award. Look for an article in the next Texas Caver. The money that comes with the award will be applied to the purchase of Punkin and Deep Caves. Look for even greater things in our future

Gordon Birkhimer-NSS 42778F

— Gordon Birkhimer of Falls Church, Virginia is a Texas Cave Conservancy Director. Gordon is the Executive Vice-President of the National Speleological Society. In addition to the award for the TCC, Gordon was presented with his NSS Fellowship at the NSS Banquet.

Folks,

Mike Walsh also made a presentation on the TCC at one of the Cave Management Sessions and it was one of the best presentations at the convention. (It would also make an excellent grotto program so make sure you ask Mike.) It was very well prepared and presented with excellent slides. It is very clear why the TCC won the Section Award for all the great work they are doing in Austin and across Texas. CONGRATULATIONS to the TCC and to Mike.

Geary Schindel

NSS Affairs

Bev Shade Made NSS Fellow

Austin caver Bev Shade was designated a Fellow of the NSS during the awards ceremony following the banquet at the 2006 NSS convention in Bellingham, Washington. Please congratulate Bev the next time you see her !



National News

GUMO Fee Changes

Dear Park Friend:

On June 8, 2006, I sent out a notification of Guadalupe Mountains National Park's intent to implement a fee increase to be effective as of January 1, 2007. The notification was also a request to solicit comments regarding that increase. Needless to say, I was overwhelmed with the number of comments received and the tremendous response against the proposed increase. The objective of the civic engagement as outlined in The Federal Lands Recreation Enhancement Act of 2004 was meant to engage the public and solicit opinions on issues important to the public and evaluate the responses received. As a result of the input received, we have solicited and been granted, permission to reduce the proposed fee increase. As a result of public input, the proposed fee increase has been reduced from \$10 per person 16 and over to \$5.00 per person 16 and over. This is for the seven day life of the permit and is a 50% reduction from the original proposal. We will also move forward with the creation of an annual park pass. This pass will be offered at a cost of \$20 and will allow the owner and immediate family unlimited entry to the park. This pass does not cover the park's camping fees but is truly a bargain for the frequent park visitor. Camping fees will remain unchanged at \$8.00 per site per night.

I wanted to thank the many of you who took the time to respond and comment on the proposed fee increase. We have heard you and have taken your comments to heart. However, we must not lose sight of the importance and significance of The Federal Lands Recreation Enhancement Act and our ability to keep 80% of the fees generated by the park. The fees collected at Guadalupe will be used to repair, maintain, and enhance our facilities as well as repairing interpretive exhibits and providing for visitor services. Again, my sincerest thanks for your comments and suggestions as well as your continued support of Guadalupe Mountains National Park.

Sincerely, John V. Lujan

Carlsbad Caverns Facelift Will Feature Famous Artwork

Carlsbad, NM — When Carlsbad Caverns National Park's remodeling of its visitors center is completed and open in 2008, visitors to the caverns will get more than their money's worth. In addition to seeing the cave's splendor, visitors will have the opportunity to see rare works of art that include original prints of the caverns by famed photographer Ansel Adams and renowned Santa Fe Painter Will Shuster, who is believed to have been the first artist to enter the caverns in 1924 and painted the cavern by lantern light. Some of the artwork that will be displayed was done around the time of President Roosevelt's "New Deal" projects.

The exhibit of Adams' and Shuster's work, as well as other contemporary artists who have produced works of art featuring the caverns, is a joint project by the Cavern Arts Project and the Carlsbad Caverns-Guadalupe Mountains

Association in partnership with the National Park Service.

Lois Manno, a caver, painter and graphic artist, and fellow caver, Kevin Justus, an art historian, are spearheading the project. Manno, in a telephone interview from her Santa Fe office, said the goal of the Cavern Arts Project is to combine historic works from the park's collection with photographs and other works of art from contemporary artists who have been inspired by the caverns.

She said that she has been coming to the park as a caver for the past 15 years, and believes the visitors center would be an ideal place to showcase artwork of the caverns done by well-known artists. "We proposed this project to the National Park Service earlier this year," said Manno, who serves as director of the Caverns Arts Project. "This project is one that Kevin and I came up with, and the NPS people said they were very interested when we approached them. Once we began to explore the (art) work that had been done there by major artists, we knew the works of Adams and others that have been rarely seen needed to be hanging in the visitors center. The more we have been digging, the more great art work we are finding."



Big Room, Carlsbad Caverns (Ansel Adams)

She explained that the art work will hang in the 1,500 square foot visitor center displaying the works of famous artists that have painted, photographed or drawn images of the world-famous caverns over the past 80 years. The resources, Manno explained, include 27 original photographic prints by Adams. Shot in the early 1930s, these prints have never before been placed on exhibit for the public. In addition, Manno said a series of paintings by Shuster will also be included in the collection. "These paintings (of Shuster's) have been in storage for the past 25 years," she said. Manno said that the project has grown to include a traveling exhibit that will tour other national parks across the country. The total cost of the project is estimated at \$300,000 and she is using her background in non-profit (organizations) management and grant writing to raise the needed funds.

Kajiki said CCGMA's bookstore inside the park's visitor center has books for sale about Ansel Adams and his photography of the caverns. However, he said he was surprised to learn that some of the Adams' photos are in the

park's possession. CAP organizers said that several of the paintings in the NPS archives that have been proposed for the exhibit have been damaged and are in need of conservation. In addition, the Ansel Adams prints are not currently in presentation condition.

(Excerpted from: Davis, Stella. 2006.
<http://www.currentargus.com/ci_4217287>)

NCKRI Headquarters Construction Delayed Again

Carlsbad, NM — The construction of the National Cave and Karst Research Institute headquarters in Carlsbad has been delayed, pending a contractual disagreement between the city of Carlsbad and the architectural firm hired to handle the project. The city recently requested arbitration, asking for Durham and Associates Architectural Firm to complete a redesign of the institute or refund the \$193,000 already paid to the firm. The arbitration process, city manager Harry Burgess said, will lead to a legally binding decision that will prevent expensive court costs.

The arbitration delay is the latest of a series of roadblocks that have seemingly plagued the project since its inception. The current dispute essentially boils down to interpretations of a pair of clauses in the firm's contract with the city. The dispute is heightened by a disagreement over who is to blame for delays, which have led to rising construction costs. Durham and Associates was awarded the bid on the original design for the building, which is meant to be the anchor point of the Carlsbad Department of Development Cascades project along the Pecos River. According to the agreement, the firm would be paid \$240,000 or 8 percent of the construction bid, whichever is lower. The project went out for a construction bid in November, and the low bid came in at \$6.8 million.

"We had about half that," Burgess said. "In order to do (a construction rebid), the architect had to redraw some plans." The city feels the architectural firm should handle the project at no additional cost, or at least very little additional cost. "Their onus was to design this building within the perimeters (of cost)," Burgess said. "They didn't do that job they were asked to do. Our contract states they have to (handle the construction) rebid for us at no additional cost."

Members of Durham and Associates, meanwhile, say they don't want to work for free on a completely new project that costs significantly more than the original project they bid on. The amount of state and national funds set aside is around \$5 million. The firm's original contract was for a \$3 million facility that the firm has already designed. "They say it's a fixed fee," said Wanda Durham, of Durham and Associates. "But there's a clause in the contract that says if you change the scope of the work, then the architect is to be compensated." The original \$3 million project, Durham said, was assigned with the understanding that elected officials were going to try to get more money for the project.

Recently, Gov. Bill Richardson approved an additional \$850,000 in capital outlay funds for the project.

Durham said she could not comment extensively due to the legal aspects of the arbitration process.

(Excerpted from: Marksteiner, Kyle. 2006.
<http://www.currentargus.com/ci_4139059>)

New US Depth Record Contender

In other news from the convention, it was announced at the beginning of the US exploration session that a new cave was bottomed only a couple of weeks before in the northern part of the Bob Marshall Wilderness in Montana. A single passage down a bedding plane, with only a couple of short rope drops, it is essentially tied with Lechuguilla as the deepest cave in the continental US. It is evidently about 17 feet shallower than the conventional figure for Lech, but a different loop-closure algorithm decreases the figure for Lech by about 20 feet. In any case, considering the accuracy of the surveys, it looks like a tie. The new cave is said to have ended at the bottom, but a higher entrance is possible. (I didn't hear the announcement; this note is based on second-hand reports.)

Bill Mixon

Local News

Graduate Student Evelyn Mitchell is Studying Waves in the Edwards Aquifer

Surrounded by maps of aquifers and wells, Evelyn Mitchell spends most of her days in a UTSA science lab full of computers and mapping equipment. A doctoral student working on her dissertation, Mitchell also is a scientist developing a more efficient method to determine the storage capacity of the Edwards Aquifer, San Antonio's water source, based on pressure waves generated by seismic activity. The aquifer is composed of fractured limestone that filters and stores water. The recharge and artesian areas of the aquifer underlie six counties in south-central Texas. The National Ground Water Research and Education Foundation recently recognized Mitchell's excellent work. Her paper, "*Methods for Determining Specific Storage Using Seismic Efficiencies*," was judged as a great contribution to the field of environmental science and won her a \$250 scholarship.



Evelyn Mitchell at work.

"The purpose of my work is to provide a practical method for measuring the storage capacity of a confined aquifer," Mitchell said. "Different portions of the aquifer may have

different storage properties. This information will aid agency personnel in determining where in the Edwards it will be most efficient to extract." The method she is developing is important because currently there is no reliable way to determine an aquifer's storage capacity. Storage constants are values used in aquifer modeling, and policy makers use these models to make decisions about community water usage.

Mitchell moved to San Antonio in 1998 to begin her studies at UTSA. She has bachelor's and master's degrees in physics and hopes to teach at a university after she completes her doctorate in environmental science and engineering. [She is also a member of the Bexar Grotto.]

(Excerpted from: Williams, Evangelina. 2006. <<http://www.utsa.edu/today/2006/07/mitchell.cfm>>)

Western Edwards Aquifer Water Divide Studied

A study of underground water east of Del Rio has brought scientists and the general public a little closer to understanding where our water comes from. Dr. Ron Green, staff scientist with the Southwest Research Institute of San Antonio, on Tuesday presented the findings of a groundwater study to members of the Del Rio City Council. Green, who was introduced to the council by Jay Johnson Sr., president of the West Texas Springs Alliance, told the council the objective of the study was to define the relationships between the Uvalde pool and the San Antonio pool of the Edwards Aquifer. Green said the primary focus of the study was Uvalde County, but noted that underground water resources do not abide by neat political boundaries.

Prior to his study, it was believed that a groundwater divide occurred somewhere in the middle of Kinney County, with water on the east side of the divide flowing toward San Antonio and water of the west side of the divide flowing toward Del Rio and San Felipe Springs. "We came to different conclusions," Green told the council. Green said he has studied the structural geology, hydrogeology and water chemistry of the area. Green pointed out that water was tested for its mineral and chemical content since water from different sources tends to have its own "fingerprint." Those water "fingerprints," Green said, are an indicator that the waters of Kinney and Val Verde counties are different than the waters of Uvalde and San Antonio. "Kinney County has its own aquifer," Green said.

He told the council before the study was performed that the groundwater divide between Brackettville and Del Rio was previously thought to lie closer to Brackettville.

The Southwest Research Institute study was funded by the Edwards Aquifer Authority and had taken 21 months to complete at a cost of \$260,000.

(Excerpted from: Gleason, Karen. 2006. <<http://www.delrionewsherald.com/story.lasso?ewcd=dc14053ee22235be>>)

Cave Biology

Cancer-Killing Compound Found in Cave Fungus

A cancer-killing compound called rasfonin has been synthesized from a fungus that was discovered on the walls

of a New Zealand cave. A chemical found in the fungus causes the cancer cells to commit suicide while not harming healthy cells. In 2000, researchers from Chiba University in Japan and the University of Tokyo simultaneously discovered a compound in certain fungi that selectively destroyed cells depending upon a gene called ras--one of the first known cancer-causing genes. They had found rasfonin, a compound that seemed tailor-made to knock out ras-dependent cancers like pancreatic cancer.

Unfortunately, but no one has been able to study or develop this compound because it's so hard to get enough of it from natural sources," says Robert K. Boeckman, professor of chemistry. "You either grow the fungus that makes it, or you go through a complicated chemical synthesis process that still yields only a minute amount," he says. "Now, after five years of effort, we've worked out a process that lets researchers finally produce enough rasfonin to really start investigating how it functions, and how we might harness it to fight cancer.

(Excerpted from:

<http://www.medindia.net/news/view_news_main.asp?x=13657>

Paleoclimatology

Climate Events Recorded in Hall's Cave, Texas

Sediments from Hall's Cave, Kerr County, Texas, have been sampled for regional paleoclimate evaluation. Magnetic susceptibility measurements (how susceptible a sample is to becoming magnetized) were performed on a continuous vertical sequence of samples from an excavation in the cave, to develop a magnetic stratigraphy susceptibility profile for the site. Such measurements in cave sediments are sensitive to climate due to changes in soil formation rates. Results showed a number of important major climatic events were recorded in the cave, including the H1 Heinrich Event at ~17,200 B.P., the end of the last major glaciation at ~14,300 B.P., and the 8,200 B.P. climatic event. These results are consistent with other independent indicators of climate for the region, but provide better precision on the timing of events and indicate that caves can provide a unique laboratory where climatic variations are preserved.

Ellwood, Brooks B., and Wulf A. Gose. 2006. *Geology*, p.753-756 (September)

Going to Bat for Climate Research

Milwaukee, Wis. - The much-maligned bat may soon be earning praise from climate scientists, after a discovery that the winged mammals have dropped thousands of years of data in caves throughout the world. That data is waiting to be mined - but only by researchers willing to scour through millenniums of bat poop. According to Louis J. Maher Jr., a retired professor of geology and geophysics at the University of Wisconsin-Madison, guano, or bat dung, can be used to examine ancient environments in a manner analogous, or even preferable, to lake sediment or peat.

Unlike those more traditional methods, however, "you have to keep a sense of humor about this type of research," Maher said. "It's one of those things people like to snigger at" - despite the fact these piles can provide valuable

information about geographic regions that are not amenable to more traditional paleoclimatic analysis. Piled high on cave floors, certain large deposits of bat scat have been accumulating for thousands, if not tens of thousands, of years. And in each heap, or cone, valuable records of the insects, pollen and minerals the bats encountered during their nightly forages have been collected, preserved and neatly layered in chronological order, from bottom to top.

In a recent issue of the journal *Palaeogeography, Palaeoclimatology, Palaeoecology*, Maher described a visit to a bat cave in southern Missouri where he was able to take a core sample from a large pile of guano, then examine the stratigraphically layered pollen, mineral and insect deposits within. The 28-inch-deep pile he chose - which he said wasn't the deepest in the cave - was carbon-dated by the Lawrence Livermore National Laboratory in California to nearly 3,000 years at its lowest layers. Using a standard piston sampler - one designed to take lake sediment cores - the sample was removed from its mound and wrapped in plastic foil. According to Maher, it had no noticeable odor, was crumbly and had the color of mahogany.

Maher is not the first researcher to recognize the importance of animal waste as a valuable tool for reconstructing past climate events. According to Gavin Schmidt, a paleoclimatologist at NASA's Goddard Institute for Space Studies in New York, others have combed through encrusted pack rat urine and feces, primarily in the Southwest, and obtained similarly promising results. "It sounds reasonable," he said, when asked what he thought of the Maher's methodology. But, he added, he was not a specialist.

Owen Davis, a palynologist - or pollen researcher - at the University of Arizona in Tucson, held a "*Feces Through Time*" symposium in 2003, where Maher's work was first presented. Davis believes the information gleaned from such accumulations is valuable. "This is a really fertile area," he said. For instance, in the arid Mediterranean region, researchers have been combing through cave-preserved hyena dung to analyze pollen on the partially digested and preserved skins of this scavenger's ancient quarry. And in the Mideast, middens of such animals as the dassie rat and hyrax have proved fruitful.

The beauty of Maher's work, though, said Davis, is that unlike pack rat middens or hyena dumps - in which each poop represents a discrete moment in time - one deep guano core can provide a window into a thousand years, or more, of environmental and ecological change. And in areas where lakes are few, such deposits can contribute to a richer, clearer picture of a region's environmental history. Pollen samples - whether pulled from lakes, peat or guano - enable investigators to "see" historical ecosystems. The number and percentage of grains can tell a researcher what kinds of plants abounded during a particular period of time. Is the sample heavy with oak, conifer or grass pollen? What other plants can be identified? Comparing the pollen makeup of the sample with modern ecosystems, the researcher can then identify the environment, and climate, in which the sample was created.

In 1990, Maher was asked by the owner of the Tumbling Creek Cave, a National Natural Landmark near Protom, Mo., to examine the cave's guano cones for pollen content. The cave is said to contain the most diverse population of animals in any cave west of Mississippi River. Intrigued by the prospect, Maher went for a visit. His thinking went something like this: Insects pick up pollen by visiting flowers, and many temperate-region bats eat insects. Because pollen grains are difficult to digest, they should pass through the bat, and land on the floor below the roost. If several generations of bats had occupied the cave, those piles should include a stratigraphic record of pollen grains.

He was hoping the guano would serve as a record of insect-pollinated plants. He was wrong. Instead, he discovered the pollen collected in the guano represented atmospheric pollen - the stuff floating in the air around us. The difference might sound academic, but to Maher it was important. It meant that the contents of the guano, which consisted primarily of insect fragments, hair, pollen and mineral matter, reflected atmospheric debris, not the ecological habits of pollinating insects. Night-flying insects do not normally visit flowers for pollen, Maher said. So the pollen found on their bodies (the primary element in guano) is incidental; they "essentially act as living traps for airborne debris," he wrote in his paper.

He verified this assumption by analyzing dead insects trapped in a yard light at his home, and in the glass cover of a light over the freight dock at Weeks Hall, his office building on the UW campus. The insects were covered with atmospheric pollen. Bat fur, too, serves as a trap for atmospheric pollen. When the nocturnal critters groom, they ingest the pollen and dust accumulated on their fur during their nightly foray. Both the insects they caught, and the fur they licked, are then excreted into piles on the cave floor, where they are sheltered from wind, rain, light and extremes in temperature.

The amazing thing about all of this, Maher said, and the reason guano cores might work as well as or better than lake sediment cores, is that the pollen in an individual scat contains a record of the atmospheric pollen during a single day. So, as with the hyena and pack rat collections, a discrete moment can be analyzed, offering a snapshot in time. But like a sediment or ice core, the stratigraphic accumulation of these discrete packages also provides a motion picture of time.

(Excerpted from: Rust, Susanne. 2006. <<http://www.grandforks.com/mld/grandforks/news/nation/15261008.htm>>)

Cave Archeology

Raging Fires in Spain Damage Ancient Cave Art

Cave-art pieces dating from the Stone Age and considered among Spain's national treasures have been damaged in forest fires raging across northwest Spain. Government officials in the Galicia region announced Friday that petroglyphs (paintings and carvings on rock) of wildlife and geometric patterns dating back about 4,000 years have been charred and blackened by the fires. Iria Mendez, a spokesperson for the local government, said it was too early to tell if the art has been damaged beyond repair.

In the past week, more than 100 fires have spread across the wooded northwest region of Spain, which is home to wildlife and remains of ancient human habitation. Residents in some areas have also been forced to leave. Authorities have said that some of the outbreaks were clearly planned and have arrested more than a dozen people on suspicion of starting the fires. Other European Union nations have sent reinforcements and resources to aid Spanish firefighting crews. Spain has announced plans to deploy 200 elite army engineers to join the approximately 1,200 troops already supporting firefighters to battle the fires.

(Excerpted from: <<http://www.cbc.ca/story/arts/national/2006/08/11/spain-fires-art.html>>)

Tales of the Sinkhole:

Sinkhole Swallows Part of Home in Missouri

Nixa, MO – As a sinkhole swallowed more of a house in Nixa, researchers worked Monday to determine how the void formed and whether it will continue growing. Shortly before noon on August 13th, the north side of the house hanging over the sinkhole's edge collapsed into the hole, breaking the house's spine. The sight stunned people like longtime Nixa residents as they watched the roped-off area from across the street.

Nixa officials might want to act to stop its progress before its walls collapse and it consumes a section of Delaware Street and another home to the north of the sinkhole, said Peter Price, environmental geology section chief with the Missouri Department of Natural Resources' Division of Geology and Land Survey. Price and two colleagues surveyed the sinkhole that appeared Sunday morning and devoured Norm Scrivener's garage and car.



Aerial view of Nixa sinkhole.

"It may be best to provide some remediation as soon as possible to prevent additional collapse," Price said of handling a sinkhole originally estimated to be nearly 70 feet across and 75 feet deep Sunday. By Monday, it had grown in width about 5 feet but became shallower as dirt fell from its walls. Sinkholes shouldn't be converted to ponds or storm water detention basins, or filled in for construction, hydrogeologist Tom Aley said. And sinkholes shouldn't be filled with trash or debris, which along with impeding water flow can cause groundwater pollution, the owner of Ozark

Underground Laboratory at Protem said. "It's a part of the (natural) plumbing," he said of sinkholes. "You play with the plumbing, and it's going to change the plumbing somewhere else."

Sinkholes pock much of southwest Missouri. Greene County, considered the only county in Missouri to conduct a full-scale sinkhole survey, has recorded over 2,500. Nixa has hired a consulting engineer to provide advice on what to do and is forming a plan on how to fill the sinkhole, City Administrator Brian Bingle said as firefighters and police stood by while researchers checked the sinkhole Monday.

Filling the sinkhole immediately might backfire, so determining the size of the "throat," or the passage leading underground, is important, engineer Gary Pendergrass said. Pendergrass, environmental compliance officer with Springfield City Utilities, said he's working for Nixa as a consultant. "We're looking for the throat, where the soil is actually dropping into bedrock," he said. Once that's done, it might be possible to put stone of varying size into the sinkhole to fill it, yet allow the natural flow of water, he said.

Efforts to use an underground camera on loan from Springfield Public Works to probe the sinkhole's depths were frustrated because debris from the collapsing house filled the bottom, Gouzie said after an attempt to lower him into the sinkhole was canceled. Having firefighters spray 2,000 gallons of water into the hole to dislodge debris to get a look at the sinkhole throat didn't work, he said. Enough dirt had fallen into the sinkhole from its vertical dirt walls to hide the remains of Scrivener's garage and Chevy Cavalier, Gouzie said.

Monday afternoon, as a half-dozen fire trucks left the scene, geologist Price remained with two colleagues to gather information that might provide a view of what's happening underground. That work took the form of hammering a line of steel stakes into the ground near Scrivener's home, then stringing electric cables used to send impulses into the ground in an effort to determine the depth of bedrock and whether there are undetected voids. But the testing method is susceptible to interference from water lines and other materials, he said.

(Excerpted from: Penprase, Mike. 2006.

<http://www.news-leader.com/apps/pbcs.dll/article?AID=/20060815/NEWS01/608150380/0/BREAKING01>>)

Nixa Sinkhole Studied in 3-D

Nixa, MO — Phill Pittman agreed to take special equipment known as a phase shaft scanner that uses lasers to produce three-dimensional modeling images to the sinkhole that opened up suddenly in Nixa, Missouri last Sunday, taking in part of a home and threatening others. As onlookers watched, the boxes rotated on top of the tripod as lasers shot millions of points to create what the representative of Florida-based FARO Technologies said would be images that can be used to assess how the sinkhole that swallowed much of Norman Scrivener's home is progressing. The laser images could help researchers learn whether the sinkhole and the ground nearby are still moving. Taking more images on following days will indicate whether the sinkhole and

surrounding ground are moving, providing researchers more information. That's why there's so much interest in the sinkhole, Missouri State University associate professor of geology Robert Pavlowsky said after checking the site.

Researchers don't have many opportunities to study a sinkhole as it forms, and even rarer opportunities to see a sinkhole develop in a built-up area, the Nixa resident said. Geologists usually check out sinkholes after they form, so the Nixa sinkhole is a rare opportunity to witness the birth of one, Missouri Department of Natural Resources Geology and Land Survey environmental manager Jim Vandike said. In over two decades of work, the Nixa sinkhole is unique, Vandike said. "Fortunately, the vast majority of them are not in areas with houses on top of them," he said. "This is the first I've heard of that involved a structure."

It also could provide information to city officials, who not only have to decide how to deal with the sinkhole, but what to tell concerned residents. Evidence of that came Wednesday as a city employee walked along Delaware and McConnell handing out letters informing residents like Kimball of a session aldermen have called for Friday evening to pass along information they've learned about the sinkhole.

The researchers gathering such information depend not only on technology of the kind Pittman agreed to demonstrate at the request of Nixa officials, but also on hands-on work, Riverbluff Cave manager Matt Forir said. "If we can ever get inside this thing, we'll hopefully figure out what's going on," he said.

That's important because in an area where karst topography that includes a network of caves, springs and sinkholes undergoes rapid development, more knowledge about the underground is necessary, he said. "This could be an anchor point for that," he said of current interest in the sinkhole. "It really is important."

(Excerpted from: Penprase, Mike. 2006.

<http://www.news-leader.com/apps/pbcs.dll/article?AID=/20060817/NEWS01/608170390>>)

International News

Jenolan Caves Dated at 340 Million Years

Australia – The Jenolan Caves in the Blue Mountains have been dated at 340 million years old, making them the oldest known open caves in the world. In a five-year study, a team of Australian scientists tested clay from caves regularly visited by tourists, such as the Orient Cave and Temple of Baal Cave, to determine their ancient origins. Team member, Armstrong Osborne, of the University of Sydney, said it had been thought for many years that the limestone caves were only a few thousand years old. Then, about six years ago, geologists estimated they could have formed as long as 100 million years ago.

The new finding was a shock. "The dates we got are much older than anticipated. It is quite dramatic," Dr Osborne said. For the study, CSIRO scientists, led by Dr Horst Zwingmann, used a method they had developed to help oil exploration companies find oil deposits. By testing minerals in mud samples from the floors of the caves at Jenolan, they

were able to show that the clay had formed in the distant past from ash blown in from a nearby volcano.



Indian Chamber in Orient Cave, Jenolan Caves, Australia.

Dr Osborne said 340 million years was a long time, even in geological terms. "To put it in context, the Blue Mountains began to form 100 million years ago; dinosaurs became extinct 65 million years ago and Tasmania was joined to the mainland as recently as 10,000 years ago." He said the discovery, published in the *Australian Journal of Earth Sciences*, could assist in a push for Jenolan Caves to gain world heritage listing in their own right, not just as part of the Blue Mountains listing. "They deserve it. They are one of the world's most complicated cave systems," he said. Most ancient caves around the world have filled up with rock, and are no longer accessible, Dr Osborne said.

(Excerpted from: Smith, Deborah. 2006. <<http://www.smh.com.au/news/national/joy-echoes-at-discovery-that-jenolan-caves-are-worlds-oldest/2006/07/25/1153816182378.html>>)

Interstellar News

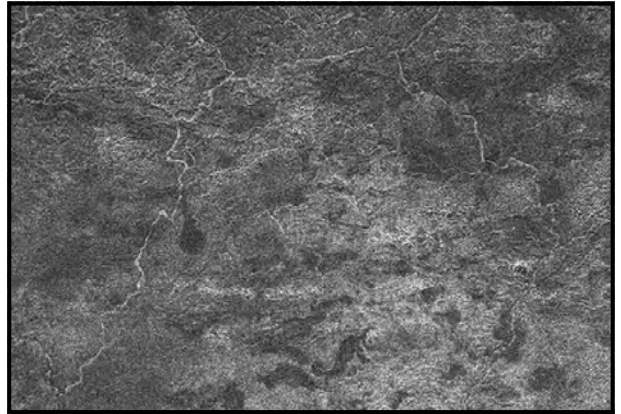
Titan May Be Riddled With Caves

The highlands of Titan may be riddled with caves, according to the latest images of Saturn's giant moon. On 30 April, the Cassini spacecraft flew over a large bright region called Xanadu that spans about 4000 kilometers. Xanadu was already thought to be a highland area, where bright hills of ice poke up above Titan's dark sooty plains. A new picture made with the spacecraft's haze-penetrating radar confirms this. In fact, the interior of the region is crossed by mountain chains that rise more than a kilometer high – while most of the moon appears relatively flat. "These are the highest mountains measured on Titan so far," says radar team member Ralph Lorenz of the University of Arizona in Tucson.

But it seems that the mountains are not solid. The radio waves bouncing off Xanadu reveal that it has peculiar electrical properties – specifically a low dielectric constant. "The only reasonable material makeup that could have a very low dielectric constant and still hold together enough to form the structures that we see would be some sort of porous stuff – most likely porous water ice," says another team member, Steve Wall of NASA's Jet Propulsion Laboratory in Pasadena, California, US. He suggests the region might be

filled with caverns, presumably carved out by the methane rain that is thought to fall on Titan. That rain would also have created the long river valleys that meander among the hills nearer the fringes of Xanadu. Cassini scientists speculate that these rivers could carry ice grains down to the plains to form the dunes seen on much of Titan's surface.

(Excerpted from: Battersby, Stephen. 2006. <<http://www.newscientist.com/article/dn9588>>)



System of river channels on surface of Titan (JPL).

Grotto News

Cowtown Grotto: The Cowtown Grotto has added new content to their website at <<http://cowtowngrotto.org/>>. You can now download past issues of the grotto's newsletter *Cowtown Underground*.

Announcements

Government Canyon Karst Project to Resume in September

The Government Canyon Karst Survey Project will start up again on the 9th and 10th of September. Plans are to continue pushing Dancing Rattler and Fobia Caves. There are also some promising sinkhole digs to pursue and thousands of acres that have never seen a caver's bootprints. Camping is available at the volunteer campground. Contact me to set it up.

Directions to the gate of GCSNA: Find the intersection of U.S. 16 and Loop 1604 in northwest Bexar County (clearly shown on any state highway map). Drive 2 miles north on U.S. 16 to the third traffic light and turn left onto FM 1560 (there is a Shell station on the corner). Follow 1560 for 3 miles to Galm Road. (Old San Antonio city maps may show another Galm Road less than half a mile past the Shell. This road is now named something else. Ignore and keep on to the real Galm Road.) Turn right on Galm Road and drive 2 miles to the sharp left turn in the road. The gate to GCSNA is straight ahead. Enter at the gate and then take the first right. There is an unlocked gate that will need to be opened and then closed behind you. Continue to the ranch house, where we will meet. Start time is 9:00. You won't find us after 9:30! **Contact:** Marvin Miller (830)-885-5631 <mlmiller@gvtc.com>.

CBSP Under New Management

The Colorado Bend State Park TSA Volunteer Project is under new management. The project leader is Rafal Kedzierski assisted by Mark Gee, Butch Fralia and Keith Heuss. This is an especially good event for beginning caver, more cavers in Texas have gotten their start at CBSP than any other property. We'll find you something to do within your level of experience. There will be six trips to the park and they are open to all interested cavers. You will be assigned a task with a group of cavers. It's a great opportunity to learn new stuff or just do the stuff you like to do. Trip Dates (the first day indicates Friday night when most everyone arrives):

October 13-15, 2006

November 10-12, 2006

December - NO TRIP due to Christmas Party conflicts

January 12-14, 2007

February 9-11, 2007

March 9-11, 2007

April 13-15, 2007

For more information e-mail: <cbasp@maverickgrotto.org>.

SWR Labor Day Regional Changes Venue

Due to the recent rains in the Sacramento Mountains, the site of the Labor Day Regional has been changed. It's still in the Sacramentos, but at a different campsite. New directions:

"We will be camping at the trailhead for Forest Trail 119, located 7.0 miles down WestSide Road south from High Rolls, NM. To get to WestSide Road, take Hwy 82 East out of Alamogordo towards Cloudcroft. High Rolls is a small village just past the tunnel. WestSide Road is a right turn just past the Post Office in High Rolls. There is a sign for the Post Office on the highway, and a street sign for WestSide Road. For those coming from the east, it will be a left turn, just before the Post Office. The first 1.1 miles of West Side Road is paved and switchbacks up the side of the canyon. Once the pavement ends it winds along the west face of the Sacramento Mountains with some outstanding views of the Tularosa Basin and White Sands National Monument. There will be a sign at the turnoff for the trailhead for Forest Trail 119 before noon on Friday. We may put a sign in High Rolls as well, but probably not, as it is pretty well marked."

Steve Peerman

2007 NCKMS in Missouri

Dear friends,

I hope that many of you will plan on attending the 2007 National Cave & Karst Management Symposium, in St. Louis, Missouri, October 8-12, 2007. It should be a big one, and it's a great, central place to hold this biennial meeting. I just posted photos and details on the Biospeleology website at <http://www.utexas.edu/tmm/sponsored_sites/biospeleology/>. See the link at the top of the home page.

We will keep the costs for this one lower than the last few years, and we will have some special events too, such as a free public event at Powder Valley Nature Center on Tues. evening, Oct. 9, with a speaker panel, cave photo exhibit, and refreshments. The field trip will be to Meramec State Park's Fisher Cave, with caving and canoeing opportunities

too. The 2007 NCKMS is co-hosted by the Missouri Department of Conservation and the Missouri Caves & Karst Conservancy. Jim Kaufmann, MCKC, is my co-chair. Contact me for further information!

Thanks, Bill Elliott <Bill.Elliott@mdc.mo.gov>

Caving Calendar

September 2-4, 2006 : Southwestern Region Labor Day Regional (Sacramento Mtns., NM). The scenic Sacramento Mountains are located near Alamogordo, NM. Cave trips and conservation projects in the region will be available. **Contact:** Kenny Stabinsky <nmbatty@zianet.com>.

September 9, 2006 : Texas Speleological Survey Board Meeting (Austin). To be held at 10:30 a.m., Saturday morning at the TSS office, Pickle Research Center. **Contacts:** George Veni (210)-558-4403, <gveni@satx.rr.com> or Jerry Atkinson (281)-360-2244, <jerryatkin@aol.com>.

September 9-10, 2006 : Government Canyon Karst Survey Project (San Antonio). Plans are to continue pushing Dancing Rattler and Fobia Caves. There are also some promising sinkhole digs to pursue and thousands of acres that have never seen a caver's bootprint. Camping is available at the volunteer campground. **Contact:** Marvin Miller (830)-885-5631 <mlmiller@gvtc.com>.

September 23, 2006 : Robber Baron Cave Restoration Project (San Antonio). Final phase of TCMA's Robber Baron Cave entrance restoration project. Work will begin around 8 a.m. on Saturday morning to beat the heat. **Contact:** Linda Palit <lkpalit@sbcglobal.net> or Joe Mitchell <joe-evelynn@satx.rr.com>.

September 23-24, 2006 : High Guads Restoration Project (Carlsbad, NM). On-going work amidst spectacular scenery in the beautiful caves of the Lincoln National Forest. Last weekend of the month, permits often include Three Fingers, Virgin, Pink Dragon, Pink Panther, Hidden, Wonderland, and Black Cave. **Contacts:** Susan Herpin or Jennifer Foote <highguads@yahoo.com>.

October 7-14, 2006 : Fort Stanton Cave Project (Capitan Mtns., NM). Join the folks working on extending the length of this fine cave. Weekends will be devoted to installing the new entrance into the Mud Turtle Passage; weekday trips will be scientific surveys. **Contact:** John Corcoran III <john_j_corcoran_III@msn.com>.

October 13-15, 2006 : Colorado Bend State Park TSA Volunteer Project. Survey, ridgewalking, and digging activities. Beginners and experienced cavers welcome. This is an especially good event for beginning cavers, as more cavers in Texas have gotten their start at CBSP than any other project. For more information, e-mail: <cbasp@maverickgrotto.org>.

October 20-22, 2006 : 29th Annual Texas Cavers' Reunion (Gass Ranch – Honey Creek Cave). We are returning to Honey Creek Ranch for all of our fun and festivities. There will be some trips into Honey Creek Cave for those who feel the need to get underground as well as many fun and exciting things above ground. For the latest information about TCR 2006, visit the website at www.oztotl.com/tcr.

October 22, 2006 : TSA Fall Business Meeting (TCR). To be held Sunday morning at the 2006 TCR, Gass – Honey Creek Cave Ranch. For more information, check the TSA website <http://www.cavetexas.org> or John Brooks jpbrooks01@sbcglobal.net.

October 28-29, 2006 : High Guads Restoration Project (Carlsbad, NM).

November 10-12, 2006 : Colorado Bend State Park TSA Volunteer Project. Survey, ridgewalking, and digging activities. Beginners and experienced cavers welcome. For more information, e-mail: cbsp@maverickgrotto.org.

November 18-26, 2006 : Proyecto Espeleologico Sierra Oxmolon (Aquismon, Mexico). Ongoing project to explore and map the caves in the mountains near S. de Golondrinas. **Contacts:** Ron Rutherford rcrutherford@gmail.com, Jerry Fant jerryfant@verizon.net. For information on the project, see: www.pesoproject.esotericvision.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>.

October 8-12, 2007 : National Cave & Karst Management Symposium (St. Louis, MO). For details and additional information, see http://www.utexas.edu/tmn/sponsored_sites/bio_speleology/ or contact Bill Elliott Bill.Elliott@mdc.mo.gov.



Devil's Sinkhole (Travis Scott)

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.

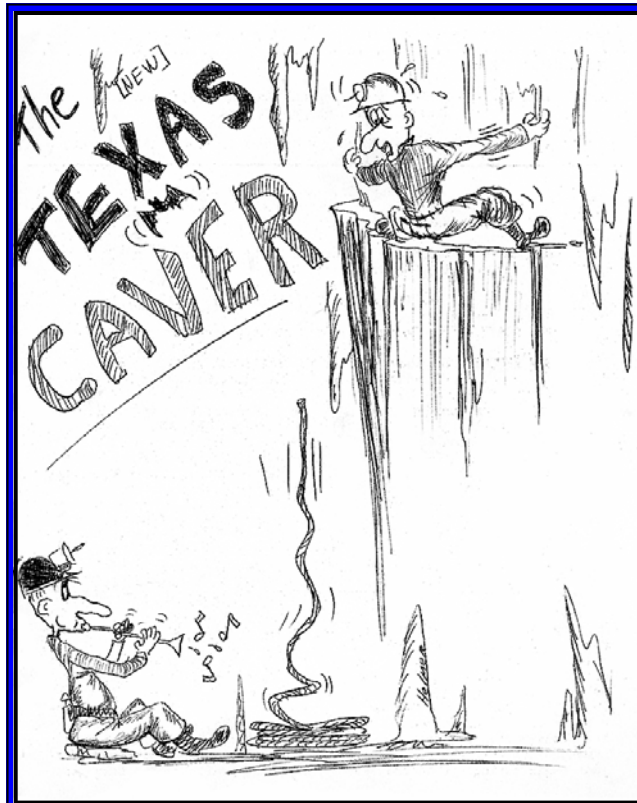
Editor : Jerry Atkinson
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TSA website : <http://www.cavetexas.org/>

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