

THE HOLE NEWS

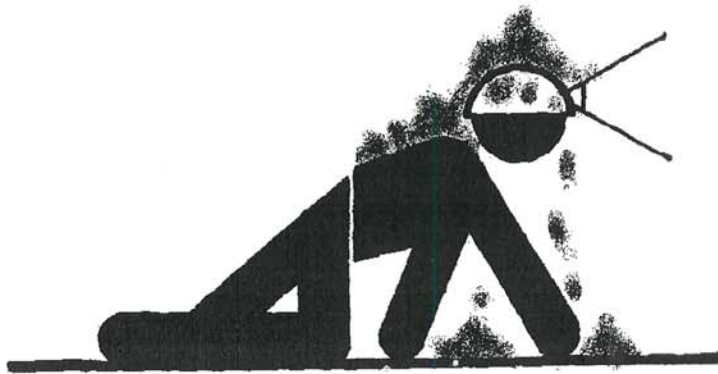
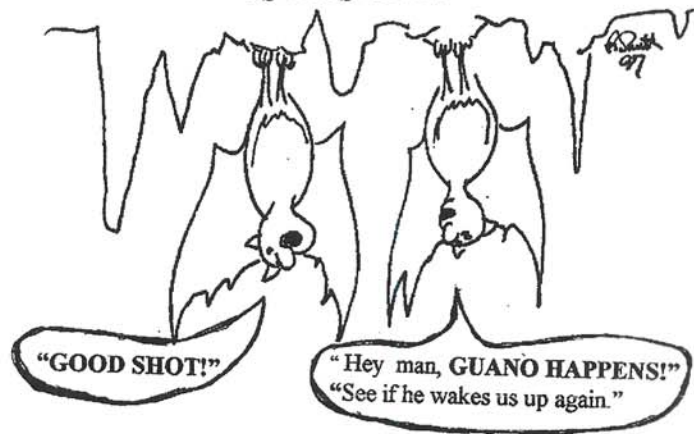
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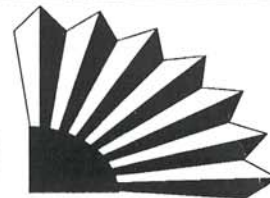
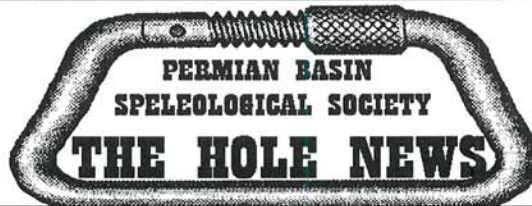
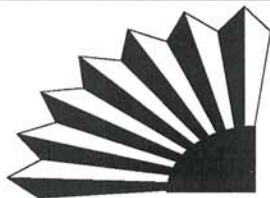
1997

Flip & Flop

The Two Bats

by Gary Smith





April 1997

Chartered 1984 as the 300th Grotto of the National Speleological Society

Volume 12 Number 4

THE MONTHLY PUBLICATION OF THE PERMIAN BASIN SPELEOLOGICAL SOCIETY

"The Hole News" is edited on Pentium P5 -133 MHz IBM compatible personal computer utilizing Microsoft Publisher 97 desktop publishing program. The editor will accept modem transfer (28.8kb N81) or 3 1/2 floppy disks with *.txt, .pub, .rtf, .doc, .wps, and .wri formats for trip reports and *.bmp, .pcx, .tif, .pcd, .gif, .tga, .clp, .cut, .dib, .iff, .img, .jas, .jif, .jpg, .lbm, .mac, .msp, .pic, .rle, .wmf, .wpg, and .cdr formats for graphics. However typed or handwritten submissions as well as hand drawn graphics are also welcome. All are greatly appreciated.

Contact the editor @ 915-559-3297 after 8 p.m. Fax line and voice mail @ (915)694-1824, any time. E-mail: <waltfeast@marshall.com>

"The Hole News" is the monthly publication of the Permian Basin Speleological Society. Articles and cartoons maybe reproduced by cave oriented publications that exchange newsletters with PBSS, as long as proper credit is given to the author. Items for this newsletter can be sent to the Chief Editor, "The Hole News", c/o Walter Feaster, 4307 Harvard Ave., Midland, Texas 79703-4847. Regular membership dues are only \$10.00 and includes one voting right, associate membership is \$ 5.00 and does not include a newsletter. Dues should be sent to PBSS Treasurer / Secretary c/o Walter Feaster, 4307 Harvard, Midland, Texas 79703-4847. If you're interested in caving or even if you think you might like to try it, then contact Noel Pando at (915)-523-9294. Or if you are not from this area and some how through circumstances beyond you're control or ours found a copy of "The Hole News" then you should contact the National Speleological Society at 2813 Cave Avenue, Huntsville Alabama, 35810-4431.

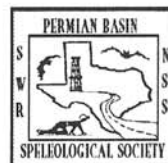
Next Meeting: PBSS

The next official meeting of the Permian Basin Speleological Society will be held on Tuesday, April 8, 1997 at 7:00 PM in the back meeting room of Murry's Delicatessen. Murry's is located at 3211 west Wadley, Midland, Texas.

Our Agenda:



If you need more directions or information call our official contact person, Walter Feaster @ 915-559-3297, or 694-1824. E-Mail: <waltfeast@marshall.com>



PBSS Home Page

<http://www.apex2000.net/personal/bb2145/pbss.htm>

Web space donated courtesy of Bill Bentley and Apex 2000 ISP.

Future Cave Trips: Also other events from PBSS and other grottos.

- April 12-13, *TSA Colorado Bend SP Project*: Contact Dale Barnard @ (512)452-3446 or <barnard@fc.net>. Or contact Terry Holsinger @ (512)443-4241, e-mail <trhli@aprynet.com>.
- April 18-20, *Earth Day Project*: @ Colorado Bend State Park. Trips into caves will be provided by the Central Texas Grotto. Contact Alvis or Dawn Hill @ (210)606-3988 or Pat Copeland @ home (915)643-2952, work (915)646-8354. Mother's e-mail:<copeland@web-access.net>.
- April 19, *TSS Cave Map Drafting and Data Processing Workshop*: This will be held at the TSS office in Austin. Space is limited. Contact Bill Elliott @ Texas Speleological Survey, 12102 Grimsley Drive, Austin, Texas 78759-3120. TSS office# (512)475-8802, home (512)835-2213, or <welliott@mail.utexas.edu>.
- April 19-20, *GypKaP (New Mexico)*: Contact Steve Peerman, 1757 Defiance, Las Cruces, NM 88001. Or <sspeerm@tesuque.cs.sandia.gov>.
- April 20-26, *CRF-Lincoln National Forest, Capitan Area Expedition*: Cave exploration and ridge walking. Contact Dick Venters @ (505)892-7370.
- April 26-27 *TSA Convention*: The TSA is encouraging every caver in the state to attend.
- May 3, *0-9 Well Upstream Survey Project*: Contact Robert Campbell @ (210)494-8201.
- *** May 10, *PBSS Trip To Hicks & Doc Brito*: Contact Bill Bentley @ (915)679-3079 or e-mail: <bb2145@apex2000.net>*****
- May 10-11, *TSA Colorado Bend SP Project*: See above for details.
- May 24-26, *SWR Summer Regional*: Location to be announced.
- June 23-27, *The 1997 NSS Convention*: In Sullivan, Missouri. Contact Pam Saberton @ (314)772-6956 or <pams107326@aol.com>. Read all about it on the web page at <http://www.umsl.edu/~joellaws/nss>.
- June 28-29, *Powell's Cave Project*: Surveying and resurveying, plus cave digging. Contact Terry Holsinger @ (512)443-4241 or e-mail: <trhli@sprynet.com>.
- August 10-17, *The International Congress of Speleology*: Will be held in Switzerland. Contact Urs Widmer, Therwilerstrasse43, CH-4054, Basel, Switzerland, or <congress.uis97@chyn.unine.ch> or check the web page @ <http://www.unie.ch/uis97/> or (in USA) call Martina Golden in Michigan at (810)666-1683. There will be caving camps before and after the congress plus a special symposia.
- October 17-19, *Texas Cavers' Reunion*: Location to be announced.

Most all of this material was stolen from various and sometimes reliable caving newsletters in the Southwestern Region and surrounding area, including the TSA's "Activities Newsletter"

***** Denotes a PBSS club Trip... *****

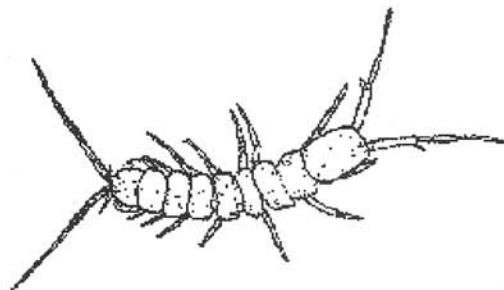
PBSS May 10 Cave Trip

Bill Bentley has permits for Hicks and Doc Brito caves. The caves are located between Carlsbad and White's City, NM. This is on BLM land.

There are five spots open on this trip. So if you want to go contact Mr. Bill at (915)697-3079, or e-mail <bb2145@apex2000.net>.

Hicks Cave is a net cave. It is not vertical. The neatness can not be discussed in this public announcement. This will be discussed at the next meeting. If you can, try to go.

Beside his caving actives, Mr. Bill has been designing web pages for several persons and organizations in the past few months. As far as this reporter has determined Mr. Bill is not engaged in any cult activities. Although a few PBSS members have had near death experiences after visiting Lucy's Mexican Food Restaurant in Carlsbad, and this had nothing to do with any comet!



Cave Rescue Numbers

U.S.A. 1-800-692-0234
MEXICO 1-210-686-0234 (call collect)
NEW MEXICO, U.S.A. Try "911" First

LIFE BELOW THE SURFACE by Harry Burgess

In many ways caves are the last place on this planet with areas never before seen or influenced by mankind. This fact is intriguing to many in search of the unknown and has drawn people into these dark holes for centuries. We are fortunate that even today new caves are being discovered and their secrets revealed to us by these intrepid explorers.

Within Carlsbad Caverns National Park, one cave discovered only ten years ago is today providing very significant discoveries to those willing to explore its depths. The cave, Lechuguilla Cave, was known for years as "Misery Hole", a 400 ft. long cave which was mined for guano in the early part of this century. For years, those entering the cave noted a wind which issued from a rubble pile within the cave, yet it wasn't until May of 1986 that anyone dug through the pile to find more cave beyond. Since the breakthrough, Lechuguilla Cave has yielded over 89 miles of passage and numerous mineralogical, geological, and microbiological discoveries.

For thousands of years, until the day the cavers dug through the rock pile, Lechuguilla Cave was separated from the outside world. The only influences from the surface came from water seeping through the rock (no flowing streams) and the air which the cave inhaled or exhaled according to changes in barometric pressure outside. In this relative isolation, a separate and unique ecosystem developed which supported its own brand of life.

As we learn more about this cave, we are beginning to understand that just because the cave may appear to be uninhabited - without the streams common to eastern caves there are no blind fish, salamanders, or worms, and since the entrance was sealed there wasn't a large population of bats beyond the initial 400 ft. of passage - there may still be life invisible to the naked eye. Dr. Larry Mallory, a former University of Massachusetts professor who has recently started his own business devoted to studying medicinal uses of newly discovered microbes, has for the past several years been visiting Lechuguilla and collecting samples to look for organisms that were previously unknown.

According to Dr. Mallory, the environmental conditions found in Lechuguilla have caused the specialization of certain microbes to allow them to survive in the cave's unforgiving conditions. Without sunlight or a consistent organic food source, life in this cave has been limited to small microbes capable of reducing minerals to use as food, and to other microbes who eat these primary producers. Most of the life is contained within the cave's pools, concentrated at the "bathtub ring" around the pools where the air, water, and rock interface. The limited availability of food has dictated severe competition, and each pool within the cave has developed its own distinct population of microbes, most of which have never before been identified.

With his interest in medicinal uses for microbes, Dr. Mallory hypothesized that the scarcity of food likely caused these microbes to develop means for eliminating their competition. This survival tactic could be in the form of a compound which one microbe may produce to kill off the other microbes that eat the same food. If so, these compounds could possibly be used in medicine to kill unwanted cells such as cancer cells in an ill patient. With that in mind, Dr. Mallory set out to see what he could find.

So far, after four years of sampling and research, Dr. Mallory has discovered over 1000 microbial strains in Lechuguilla's pools. His research has provided the park with a new understanding of the cave's fragile ecosystem, as each pool seems to be different from any other. Through testing, preliminary results have shown that over 5% of the strains collected have cytotoxic properties (they produce compounds which kill other cells) and several strains proved effective against leukemia cells in mice while another apparently targets human breast cancer cells without attacking non-cancer cells. The results have been very promising indeed, and Dr. Mallory's future plans include ongoing work with the anti-cancer agents as well as searching for anti-viral and anti-infectious agents.

This new information forces us to reevaluate the significance of Lechuguilla Cave and every other cave, known or unknown. The newly discovered microbial population of Lechuguilla has been described as richer than any other area on earth, including the tropical rainforests. So we must strive to protect this resource from harm or carelessness before it is irreparably damaged, lest we lose not only species diversity but also the potential benefits to mankind.

In order to evaluate the changes that Lechuguilla has already undergone due to human explorations and to possibly reduce future impacts, Diana Northup, a researcher with the University of New Mexico, has initiated a study to determine the extent of such human impact. Exploration and research in Lechuguilla Cave often requires trips of several days in duration, thus requiring camping within the cave. The cave itself is 68 degrees F with 99% humidity,

and many passages require crawling or ropes to negotiate their length. To simply visit Lechuguilla therefore causes interaction with the cave's environment, and any interaction with a normally closed system could potentially cause changes in that environment.

Ms. Northup's challenge was to develop a way to quantify the human-caused impacts to Lechuguilla Cave. She decided that this could be accomplished by looking in the cave for certain microbes that would be present in this environment only through human introduction. The microbes she chose as indicators of contamination are e.coli. (would show fecal contamination, of specific interest are the water sources), high-temperature bacillus (a fungal spore that would be picked up on the surface and tracked in on cavers' boots), and staph. aureus (normally present on some people's skin, would be deposited in cave by sweating). By sampling areas within the cave and then testing for these indicators, Ms. Northup could determine if areas had been contaminated/impacted and by testing areas that haven't been visited for some time, she can learn whether or not the cave recovers from such impacts.

Through her sampling efforts so far, Ms. Northup has begun to construct a model for human associated impacts to Lechuguilla. During this past year (1996) the cave has been closed to exploration trips, thus reducing the number of cavers in the cave and allowing Ms. Northup to gauge if the cave recovers from these impacts (recovery would be if the introduced microbes did not survive without additional inputs). With only partial results in, the picture is brighter than originally perceived. Although all three indicators were found within the cave, all populations do decline with time. How much time it takes for any of the indicators to disappear altogether is still to be determined, and will be of primary importance in the Park's future management plans when deciding on numbers allowed into the cave, duration of trips, and areas allowed to be visited.

The challenge now is to incorporate what is currently known about Lechuguilla Cave into a management plan that both protects this valuable resource and provides for further study. What once was perceived as a sterile environment has proven to be teeming with life, both native and introduced. There have been other studies which also contributed to our understanding of this system and there are undoubtedly future discoveries still to be made. Many of the management ideas implemented already are being adopted by other parks and cave managers. Life, as we are learning, can be found in the most unexpected of places, and we must be careful in our activities to avoid altering a balance achieved only by time.

This article was reprinted from "Canyons & Caves" a newsletter from the Natural Resources Offices, Carlsbad Caverns National Park, with permission of Harry Burgess.

1997 TSA CONVENTION APRIL 26-27 BROWNWOOD, TEXAS

The TSA annual Convention is a good place to learn about new caving techniques and recent explorations. It is scheduled for late April so that students may attend. Make this Convention the last big caving event before finals begin.

Grottos, mark your calendars and start making plans to get your newer cavers to the TSA Convention so they can see interesting & educational presentations and meet other cavers from around Texas.

Call for Papers

Cavers wishing to present papers at the Convention should contact TSA Vice-Chairman Dave McClung at 2909 Warren Circle, Irving, TX 75062, (972)594-1183, e-mail <cavers@gte.net> with a brief synopsis of your talk or for more information.

Photo Salon & Map Salon

Cavers are reminded to get their best slides and prints ready for the 1997 TSA Photo Salon and to finish putting the ink on their best cave maps for the 1997 TSA Map Salon. Ribbons and valuable prizes will be awarded to the winners.

BANQUET

GREEN MEXICAN CASSEROLE, SALAD, CHIPS, SALSA, VEGETARIAN SPANISH RICE, BEANS, AND APPLE COBBLER

From the Editor:

The TSA is encouraging all cavers in Texas to attend the TSA Convention. So try to go it should be fun.