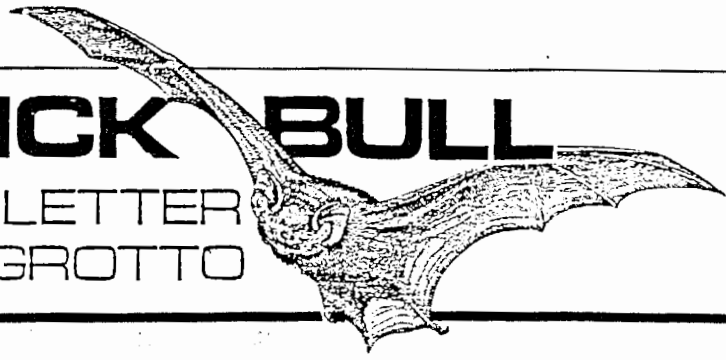


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# THE MAVERICK BULL

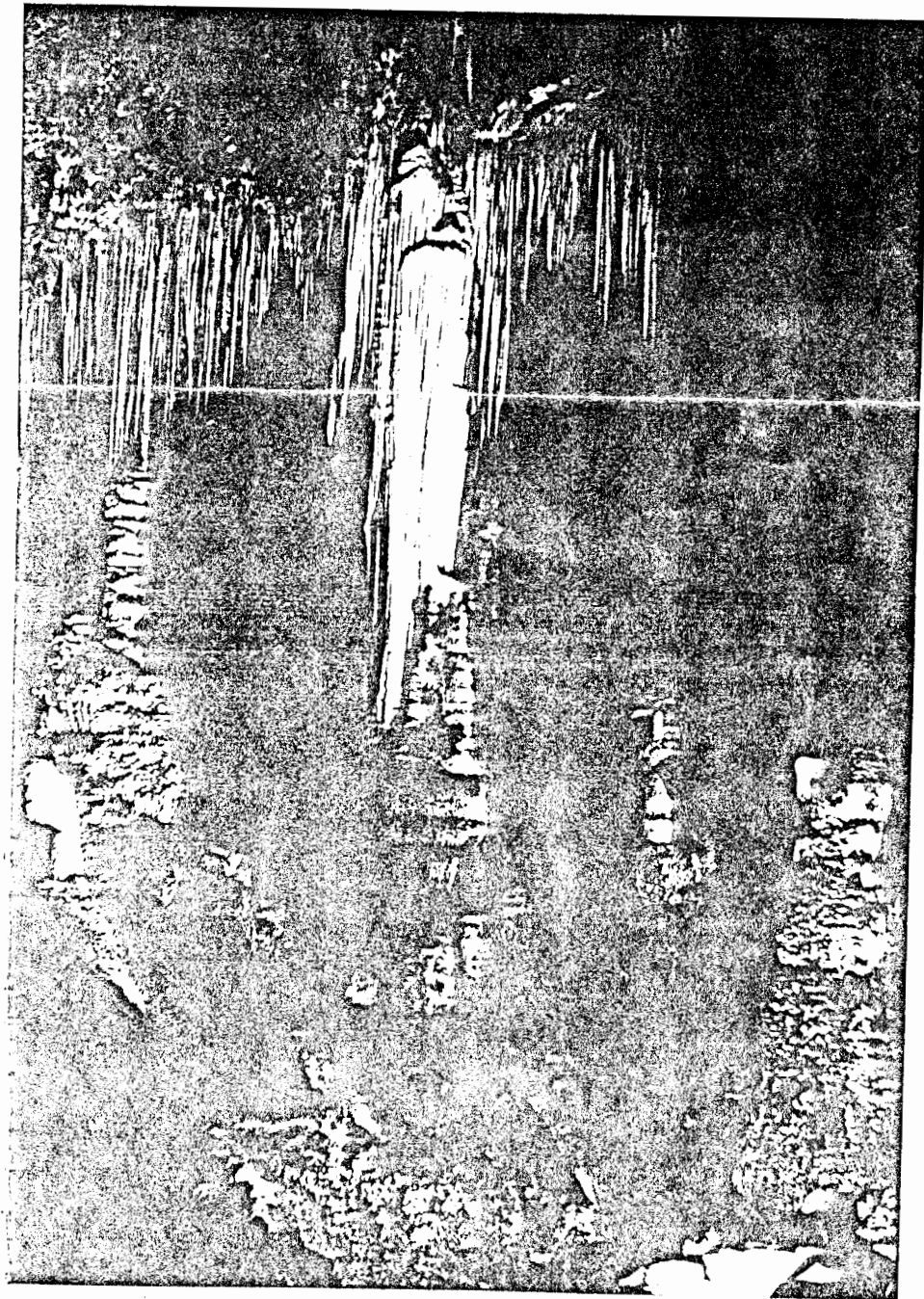
THE MONTHLY NEWSLETTER  
OF THE MAVERICK GROTTTO

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VOLUME 4 NUMBER 8

AUGUST 1989



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THE MAVERICK BULL is the monthly newsletter of THE MAVERICK GROTTTO, an internal organization in the National Speleological Society (NSS 6-322). The editors invite all cavers to submit articles, news, maps, cartoons, art, and photographs. If the material is to be returned, a self-addressed, stamped envelope should accompany it. Items should be of interest to cavers and be non-political in nature.

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EXCHANGES: THE MAVERICK GROTTTO, will exchange newsletters with other grottos. Contact any officer.

COMPLIMENTARY NEWSLETTERS: THE MAVERICK GROTTTO will provide complimentary newsletters to persons or organizations who provide cave access (i.e. landowners) or otherwise provide assistance to cavers. The Grotto will also provide three free issues to persons interested in becoming members.

MEMBERSHIP POLICY: Any caver with interests, beliefs, and actions consistent with the purposes of THE MAVERICK GROTTTO and the National Speleological Society is eligible for membership. Acceptance of new members is based on payment of dues and a mandatory three trip requirement with at least three different grotto members. These three members shall act as sponsors. At least one sponsor must attend the meeting at which the membership vote is taken. A two-thirds majority vote of the members present will be required for acceptance.

MEETINGS: Meetings are held the second Tuesday of each month, at SMOKEY'S RIBS, 5300 East Lancaster, Fort Worth. It is a little less than one mile west of Loop 820 East and next door to a K Mart. The time is 7:00 P.M., and the food is good.

### CALENDAR

Ongoing	Monthly work trip to Colorado Bend State Park. Weekend of the second Saturday of each month.
August 8	Maverick Grotto Meeting.
August 11-13	Colorado Bend State Park Work Trip.
September 1	Last day to submit material for the September newsletter.
September 1-5	Caving trip to southern Missouri
September 8-10	Colorado Bend State Park Work Trip.
September 12	Maverick Grotto Meeting.
September ?	Texas Old Timer's Reunion.
September 28	Last day to submit material for the October newsletter.
October 3-7	National Cave Management Symposium, sponsored by TSA, TP&WD, and ACMA. To be held in New Braunfels, Texas.
October 10	Maverick Grotto Meeting.
October 13-15	Colorado Bend State Park Work Trip.
December 26-30	MEXPELEO 89 in Ciudad Valles, San Luis Potosi, Mexico The 1st major international caving convention in Mexico

### ON THE COVER

The cover photo this month was made in the Big Room at Gruta del Palmito outside of Bustamante, Mexico. It was taken by David Finfrock on a trip in 1974 with the Aggie Speleological Society. Caving in Mexico is something that all cavers should experience.

## LET'S GO CAVING !!!

On Labor Day Weekend, September 1 - 5, will be a caving trip you won't want to miss! Donna & Bruce Anderson, along with Dale Ellison & Arlene Heintz, have made plans to visit about ten different caves in Missouri.

Around the Springfield area are Hooten Cave and Breakdown Cave. Hooten is a winding cave which has a particularly interesting room lined with brachiopods.

Breakdown Cave, gated by the Ozark Highlands Grotto, was featured in the NSS Cave Restoration Issue this year.

In the Grovespring area, we will visit Little Smittle, Pigeon, and Davis Caves. The first two are on Missouri Department of Conservation land, recently purchased, and open year around. Little Smittle is small, but highly decorated. Pigeon Cave (the actual name is unknown, but irate pigeons roost in the entrance) has some nice rimstone pools. There's some walking passage, and some crawling over chert. Bring your kneepads!

In Pulaski County, Berry Cave (featured at the Fall 1987 MVOR) is the highlight. It has beautiful formations, including aragonite crystals, and is about 3000 feet long.

Indian Cave, formerly a commercial cave, is about 7000 feet of both huge walking passage, and some crawling. Nearby are Skaggs, Tunnel, and Bat Caves. Visiting these last three caves depends on getting the owner's permission, but at this writing, things look promising.

Last, but not least, is Lone Hill Onyx Cave near Sullivan, once featured in the National Geographic Magazine. There are lots of formations, huge soda straws, and lots of walking passage.

Nearby, in Leesburg, is a commercial cave, Onandaga Cave. It's one of the more spectacular caverns in Missouri, and definitely worth seeing.

There is no limit on the number of cavers for this trip, and everyone is welcome to join in. Current plans call for September 1st and 5th as traveling days, with three solid days of caving in between. So come on, let's go caving !

## MINUTES OF THE JUNE MEETING

(Due to the editors' June vacation, the minutes were taken by our former Editor and Secretary, Butch Fralia)

The regular monthly meeting of the Maverick Grotto was held on June 13th at Smokey's Ribs. The meeting began at 7:42 PM with Danny Sherrod officiating in lieu of Dale Ellison, who was unable to attend. Danny suggested we try starting meetings with the program, then moving on to the business meeting. He asked for opinions, and the general consensus was to surprise us.

So Steve and Patricia Gentry began with their slide program showing various caves within the general vicinity of the upcoming NSS Convention in Sewanee, Tennessee. The slides started with the well known Mammoth Cave National Park, and it's cave life. The presentation then moved on to Floyd Collins Crystal Cave. Floyd's casket (and body) had been stolen, and had turned up on display there in the cave. He was recently re-buried at the request of his family. The slides then moved on to Cumberland Cavern where the pre-NSS convention meeting will be held. Other slides, from the Hutsville, Alabama area, showed Natural Well, where a recent lawsuit was won over a death in the cave, and Catskill Saltpeter Cave, where mining operations during the Civil War provided the Confederacy with much of the raw material for making black powder. Several other caves were shown, concluding with the actual Convention area. Steve and Pat put on an interesting presentation.

The business meeting began with a discussion of a

vertical practice session, but a date for the session wasn't established. The new NSS Membership catalog printed a considerable bit of information, provided by Teresa White, concerning the Grotto. A proposed telephone call-down list of persons to be notified in case of a caving trip was started, and still pending. Those volunteering so far are: Butch Fralia, Teresa White, Danny Sherrod, and Donna Anderson.

Concerning trip reports: Danny Sherrod discussed the Cave Research Foundation trip to Fitton Cave in Arkansas, which also included a trip to Boxley Bat Cave. Bruce & Donna Anderson discussed a Memorial Day trip to River Styx, the most note-worthy event being Butch's running out of gas outside of Seymour. Alvis Hill discussed caving in central Texas, in Williamson County. Butch Fralia gave an update on Colorado Bend State Park. Sharon Lytle told about her experiences at Lechugilla. According to Sharon, the mayor of Carlsbad may decide he doesn't want to be messing with Lechugilla, due to political pressure! Russell Hill discussed his seven days of caving, climbing and diving in Mexico.

An overseas cave trip to England was announced for November! More details later.

There was further discussion of the merits of holding the program before the business meeting. No conclusions were reached. The meeting was then adjourned.

## MINUTES OF THE JULY MEETING

(The regular secretary David Finfrock skipped out on the meeting to watch the All-Star Baseball game, of all things. Shari Finfrock took the minutes in his place)

Dale Ellison opened the meeting, and after a little initial discussion, the membership decided to revert to old ways, with the business meeting first, then the program.

Shari Finfrock made a motion for the Grotto to join the NSS Conservation Section, at a cost of only \$5 per year. The motion was passed and Treasurer Teresa White was instructed to send a check.

A new member was voted in. Cindy Hamner had fulfilled the three-trip requirement, with trips to River Styx, Colorado Bend State Park, and to the Guads, where she visited Pink Dragon and Virgin Caves. For future reference, Cindy's address is 1620 RidgeHaven, Apt. 607, Arlington, TX 76011. Her phone number is (817) 277-1436.

It was announced that a new passage has been discovered in Endless Cave on McKittrick Hill near Carlsbad. At this time the only admittance is through guides provided by the Lubbock Area Grotto.

Several trip reports were given, including one to the "Pinks" in the Guadalupe Mountains. Pink Dragon and Virgin Caves were both visited.

The Finfrocks, on a vacation to Yellowstone, went through the Black Hills of South Dakota, where they camped and visited Wind Cave. Unfortunately the guided off-trail "spelunking tour" is only offered to those 14 and over. Ten-year-old Ryan was keenly disappointed at settling for the regular commercial tour.

Butch Fralia related the latest discoveries in the Lively Pasture at Colorado Bend State Park. One cave entrance entailed a 100-foot rappell. At the bottom of the drop, passage was found, with good airflow. But a second drop was then encountered, and with no more rope, further exploration had to be put off till a later date.

At the conclusion of the business meeting, a film on Lechugilla Cave was shown. It was intended as a film to educate the general public on the discovery and exploration of this new natural wonder. And of course, to point out the fragility of the cave environment, and the importance of preserving it as wilderness.

The meeting was then adjourned.

TALES OF STILLHOUSE HOLLOW

by Butch Fralia

Stillhouse Hollow, even the name has a magic ring, calling up visions of prohibition, a speakeasy filled with beautiful girls dressed in their Charleston Flapper dresses, the era of the big bands and Eliot Ness movies. Stillhouse Hollow is located about a hundred miles south of the metroplex on I-35, then seven miles west of Salado, the home of a number of small caves. The name, the place, and the visions don't match but that's another story.

Once upon a time, several caves ago, two cavers spent a weekend chasing legends of a cave rumored to be located near the Stillhouse Hollow Dam. Complete with full cave paraphernalia and a hot summer day, they scoured the area and located many small shelters but no Cave. The cave was reported years ago in The Texas Caver with stories of cavers parking near the dam and walking out through the grass toward a cave; located perhaps a mile from the Dam. When all else failed, they resorted to driving to lake headquarters and asking questions. The Ranger on duty had recently been transferred in from outer Mongolia and hadn't yet caught up on the local lore.

The cavers yielding at last to heat, frustration and time constraints, moved on to Lake Belton where they did locate several small caves and about a million locals playing mudhog in their four-wheel drive vehicles. That being a more sure thing than caving they joined in the fun for a time before moving on to the ranger station at the Lake Headquarters.

At headquarters, they learned the Ranger there had been at Stillhouse Hollow before being transferred to Belton, having been replaced in his former position by someone transferred in from outer Mongolia. He said the cave existed down river from the dam in an area where the cavers hadn't searched, above the riverbank with water running out, "you can't miss it." He even drew a map which has long since been lost. It was late and there wasn't time to return to the Hollow. They chatted with the Ranger for a time and learned there were potentially many small caves around Lake Belton on public land. There are also many archeological sites located in cave entrances which are kept protected. It was stated however that should cavers accidentally find themselves in an archeological area which isn't marked and should they accidentally find a cave, please tell the rangers so they'd know it was only harmless cavers and not activate the standby commando squad of killer cooks from nearby Fort Hood, brandishing their arsenal of lethal potato peelers.

The Ranger, who'd been in the area for the past twenty years, related stories of difficulty during construction of the dam and during the years following. There were questions for a time of whether the Lake would hold water. A few years ago, a "suckhole" opened in the bottom of the lake near the dam and began taking 50 million gallons of water a day out of the lake. How this was discovered and how the water loss figures were derived wasn't clear but it was necessary to carry a couple of hundred million tons of rock out on a barge and dump until the drainage got down to the acceptable level of perhaps a million gallons a day. They searched down river looking for a place the water drained out of a cave, increased spring activity or some sign of where the water was going but to no avail. Where does 50 million gallons of water a day go?

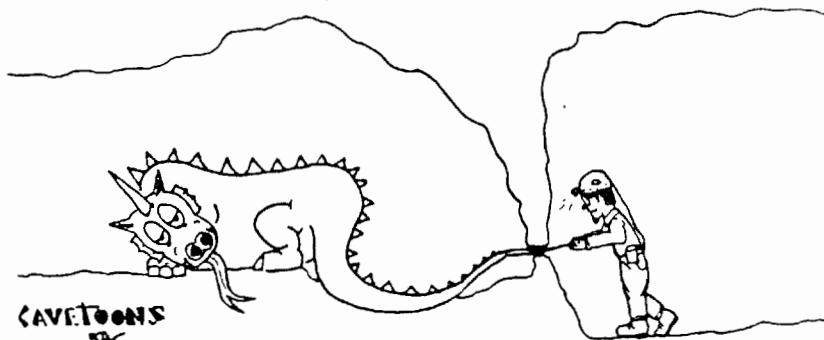
The Stillhouse Hollow area is littered with cave tales, there's supposedly a cave which someone located while digging an old drawrope type well. The stories abound that the digger dug and blasted through solid rock then he "broke through" into a large cave with an underground river. This was circa 1900, and fortunately there were others present to drop a long rope down to the well digger or Texas might have another "Dead Man's Hole" (located near Marble Falls). The well served the family for several generations. Now, it seems to have become lost, part of the local legend, but somewhere there's a hole covered with old rotten boards just waiting for someone to fall through and find themselves a hundred feet down in the cave. This is just one of numerous stories of caves without natural entrances found while digging wells in the area.

Very recently, one of the cavers passed through the area blessed with free time. He stopped by the Dam with the intention of just checking to see if the cave really exists in the location indicated. Sunburned beyond belief, he trudged down a hiking trail along side the river, beer in hand, enjoying the 100+ temperature. In spite of being in agony, he trudged on almost forgetting cave and sunburn when a small spotted fawn walked out on the path and just stared for a moment before rushing into the bushes in panic.

Continuing along, he came to a branch feeding the river. Hearing water running, he followed a trail up the branch and discovered a small dam with the cleanest, clearest, spring water overflowing to reach the river. Looking upstream he could see the sides and bottom of the stream coated with thick layers of travertine. Further upstream was a miniature Turner Falls. At last, remembering the cave is supposedly a small resurgence and forgetting the pain of sunburn and the beer had run out. He rushed up stream through briars and brambles persueing with the insane urge that cavers are known to experience when seeking a new cave. Rushing faster, ever faster upstream having visions of a most beautiful entrance gushing pure spring water when suddenly all dreams collapsed and forward motioned stopped.

The caver stood in shock, beginning to notice what briars and brambles had done to the sunburn and it was a mile back to the truck through the same mess. There before him stood the sight which has stopped more honest cavers than any other deterrant, a fence upon which a sign rested bearing those most tragic of all words; "Private Property -- No Trespassing." Beyond the fence, the stream could be seen going on, around a curve, the streambed of travertine glistening in the sunlight and somewhere beyond the curve, the sounds of rushing water could be heard.

At some future time when there's less heat, fewer ticks and more time to locate the land owner, perhaps another story will emerge. In the meantime, late at night, the tales of Stillhouse Hollow move through the mind and the memory of hearing rushing water just around the bend prevail.



SPELEO-BIOLOGIST IAN JONES, IS ILL PREPARED FOR WHAT IS ABOUT TO HAPPEN WHEN HE ATTEMPTS TO COLLECT A NEW SPECIES OF CAVE FAUNA.

## AIR CURRENTS UNDERGROUND

(The following article is taken from a research paper by Woodrow Thomas for an Earth Science class he took earlier

this summer. Woodrow has given permission to edit his paper into this shortened version to fit into the newsletter. If you have questions about the details of his research, contact Woodrow)

In the spring of 1881 while hunting deer in the Black Hills of South Dakota, Jesse and Tom Bingham came upon a curious sight. A ten-inch-diameter hole in the rock intrigued them, and when Jesse bent over to inspect it, a strong wind issuing from the hole blew his hat off his head. He repeated the stunt several times, amazed to see his hat sailing through the air. Returning the next day to prove to incredulous friends the existence of the "blowhole", he proceeded to toss his hat over the entrance, only to see it vanish into the cave, sucked in by a powerful air current. Thus was Wind Cave discovered and christened. At the time, the natural forces at work were unknown, and the phenomenon mysterious. But modern speleologists know have discovered several mechanisms that create air currents underground.

Some air movement is detectable in nearly all caves. In some cases it may be slow and felt only in restrictions where the passage cross-section narrows, and conservation of mass creates a local increase in wind speed. In other cases it may be quite strong and a virtual wind will occur. The factors controlling air movement include the external weather patterns, the size of the cave entrance, the presence of flowing water in the cave, the shape of the cave and its vertical orientation, the volume of air in the cave, and most importantly, whether the cave has single or multiple entrances and their relative positions.

One of the most important mechanisms creating air currents is the so-called "chimney effect." This is in response to temperature differences inside and outside a multiple entrance cave, resulting in a pressure difference at the lower entrance. In an attempt to restore the balance air will flow either into or out of the cave. In the winter, cave air is warmer than the air outside, and thus is less dense. This creates a column of air inside which is lighter, resulting in air flowing up and out of the upper entrance, and into the cave at the lower entrance. This situation is reversed in the summer when the underground air is cooler and denser, and the air flows in through the upper entrance to replace the air going out of the lower one.

In addition to thermally-induced air currents, cave winds can also be produced by a change in the barometric pressure of the outside atmosphere. When the pressure is altered outside the entrance to a closed space, air will flow into or out of the space to maintain a pressure balance. Since the outside atmospheric pressure is constantly in a state of flux, cave air responds continually, and in two ways: periodically and non-periodically.

The most important periodic change is the 24-hour fluctuation resulting from the difference in temperature between day and night. During the day, the warm air is less dense and pressure falls. The reverse is true at night, when the barometer rises due to cooler air, which is more dense.

Non-periodic changes are related to weather events such as the passage of a storm front and its accompanying barometric fluctuations. These are superimposed upon the daily pressure changes and the underground air will adjust to conform to the combined effect of both.

These movements are usually too slight to detect without instrumentation, but for caves with large volumes and/or small entrances, the speed can be high. At the gate to Lechugilla Cave in New Mexico, which has a single restricted entrance and over 37 miles of known passages, cavers have encountered winds as strong as 50 mph. Another example is Wind Cave in South Dakota, which had to be closed to tourists one day in April 1987 when winds were measured above 70 mph, and estimated at near 100 mph.

Single entrance caves can exhibit strong winds not only through barometric pressure changes, but also through an effect known as entrainment. This happens when a stream enters a cave, pulling or dragging air along above it by friction with the surface of the water. (This effect is experienced when standing at the base of a tall waterfall, where a strong downrush of wind is frequently felt. -- Ed.)

In the absence of a flowing stream, gravitational drainage may be at work. The caves that exhibit this are usually of small volume, have single entrances, and tend to have a definite vertical trend. In the case of a downward slope, cold external air will drain into the cave in winter, producing a slow current at the floor level. As with the entrainment effect, this is accompanied by a higher-level return flow of the displaced warm air up to the ceiling and then back towards the entrance. In the case of an upward slope, the reverse may occur, with colder cave air draining out of the entrance at floor level in the summer months.

Whereas gravitational drainage creates air flow in one direction consistently throughout a season, some caves experience a regular reversal in air motion with periods ranging from a few seconds to a few minutes. This "breathing" effect, which is periodic, but not seasonal, has been explained as a resonance phenomenon. It was first studied by Burton Faust in May 1955 in what is now known as Breathing Cave in Virginia. In the small Entrance Passage he noticed the unusual reversal of air motion and lit a candle to study the effect further. As it turned out, an irregular, but continuous air current blew from the Entrance Passage into the North Passage, past a separate corridor. The air in that corridor, the Breathing Passage, then oscillated with a cycle about a minute long. Faust described this phenomenon as a compound Helmholtz resonator, and compared it to air being blown across the mouth of a jug. The air in the jug is then compressed and expanded with a certain resonance frequency, which is heard as a low musical note. A "breathing" cave acts like a very large and irregular jug, but its size makes the oscillation of the air too slow to create a note which can be heard by the human ear.

There are several other mechanisms which can create cave winds that are worth mentioning. In a single-entrance cave with a stream, rapidly rising flood water may displace enough air, at a fast enough rate to produce a noticeable outward-flowing breeze.

Additionally, in a multiple-entrance cave which is properly exposed, strong external surface winds can produce a direct response underground. That is, external winds may funnel directly into an entrance, producing a strong and steady current throughout the cave.

And in a cave with two or more widely separated entrances, it has been speculated that a strong external pressure gradient (such as an intense low-pressure system or a strong thunderstorm cell over one of the entrances) could produce a compensating air current underground.

How do cave winds affect the average caver, and how can knowledge of them be used in caving? From the standpoint of safe exploration, the amount of air movement or lack thereof can create special problems.

At temperatures common in North American caves, 41 - 68 degrees F, a strong wind is not necessary for dangerous wind chill to occur. "Consider a 52 degree cave with a gentle breeze, easily overlooked - perhaps 5 mph. Under these conditions, wind chill is roughly the same as that in a cave at 36 degrees with barely perceptible wind flow." (Editors note: according to my wind chill chart, it takes a 15 mph wind to produce a wind chill of 36 degrees when the actual temperature is 50.) These conditions can and do cause hypothermia - a dangerous lowering of the body's core temperature, leading to impairment of functions and possibly death. This situation is, of course, exacerbated by a caver being wet and/or remaining motionless for a considerable time.

On the other hand, in caves without an adequate atmospheric exchange mechanism, explorers can face "bad air" problems. These caves tend to be small, single entrance,

and vertical. (But even some fairly long, horizontal caves like Gorman Cave can exhibit bad air.-- Ed.) The problems can be due to low oxygen and/or high carbon dioxide levels.

Normal surface atmosphere contains about 21% oxygen and only 0.3% carbon dioxide. But natural processes in caves, such as decomposition of organic debris, creates carbon dioxide levels of 1 to 2%. Since carbon dioxide is heavier than ordinary air, and especially when there is little air flow to flush the cave, the carbon dioxide will settle down and displace the oxygen. This causes decreased levels of oxygen at greater depths within the cave, and can result in cavers' experiencing hypoxia, a dangerous lack of oxygen. (A complete discussion of the effects of low oxygen levels on the human body, and a method of estimating the amount of oxygen in a cave is found in Butch Fralia's article on page 7 of the December 1988 issue of the Maverick Bull.-- Ed.)

High levels of carbon dioxide in caves are distressing rather than lethal because the human body can survive surprisingly high concentrations (so long as there is still sufficient oxygen present. Even though about 3% carbon dioxide in caves is considered the maximum level that will permit strenuous exertion, some Australian "bad air cavers" have learned how to function in levels as high as 6%. The symptoms of high carbon dioxide content, hard, rapid breathing, can serve as valuable early warning signals of dangerously low levels of oxygen.

Health problems aside, the movement of air into and out of caves has benefitted many cavers in their search for new passages to explore. In warm weather, the condensation of humid cave air issuing from underground often produces a lush growth of mosses around the hole, which is a tell-tale sign to the experienced eye. Also, moist cave air condenses in the winter as it rises from the entrance, producing a vapor column or fog bank visible from great distances.

The existence of a large underground system can be deduced by a powerfully blowing hole, no matter how obscure or insignificant it may outwardly appear. This was aptly demonstrated by the discovery of Lechugilla Cave, unquestionably the most exciting and important caving find in recent times. Prior to 1986, the cave was known only as a single room with a few insignificant side passages, and a breakdown area with some strongly blowing holes. Digging in the breakdown area, a group of cavers in 1985 broke through into major passages the following year. Lechugilla cave is now known to be longer than its neighbor Carlsbad Caverns, with over 37 miles of passages already mapped. At 1500 feet, it is the second deepest cave in the country.

Other successful digs within caves, indicated by airflow have led to important discoveries in Jewell Cave, South Dakota, and in Cave of the Winds, and Fixin'-to-Die Cave, both in Colorado. In March 1980, alert cavers noticed wind patterns in a seemingly unimportant side passage in Wind Cave, South Dakota. This led to several miles of new passage with no end in sight as of February 1988. The strong westward flow of air there (away from the main body of the cave) promises much more will be found in the future. In fact, in the 1960's, research by Herb Conn on the amount of wind versus time, and the observed barometric changes revealed calculations that "the theoretical volume of Wind Cave to be 2 billion cubic feet. The entire 50 miles of Wind Cave surveyed to date only accounts for about 3% of this volume". Since then another natural blowhole entrance to the cave has been found, which inhales and exhales simultaneously with the original entrance. This discovery makes the potential size of the cave even larger still!

Perhaps the most impressive example of utilizing underground winds in cave exploration is in Jewell Cave, through the work of Herb and Jan Conn. For 20 years they purposefully traced the air currents in the vast labyrinth of Jewell Cave. Along with others, they have extended the known length of passages to over 75 miles.

As can be seen, cavers have consistently used the movement of air in caves to their benefit in exploration. This air movement is present to some degree in most caves. In any particular cave, a number of mechanisms may act to create the air currents, but in many cases it is possible to isolate one as the major cause. Whether it is detectable only by the drift of condensed breath, or is strong enough to roll small pebbles along the floor, air movement is the most important element in cave meteorology.

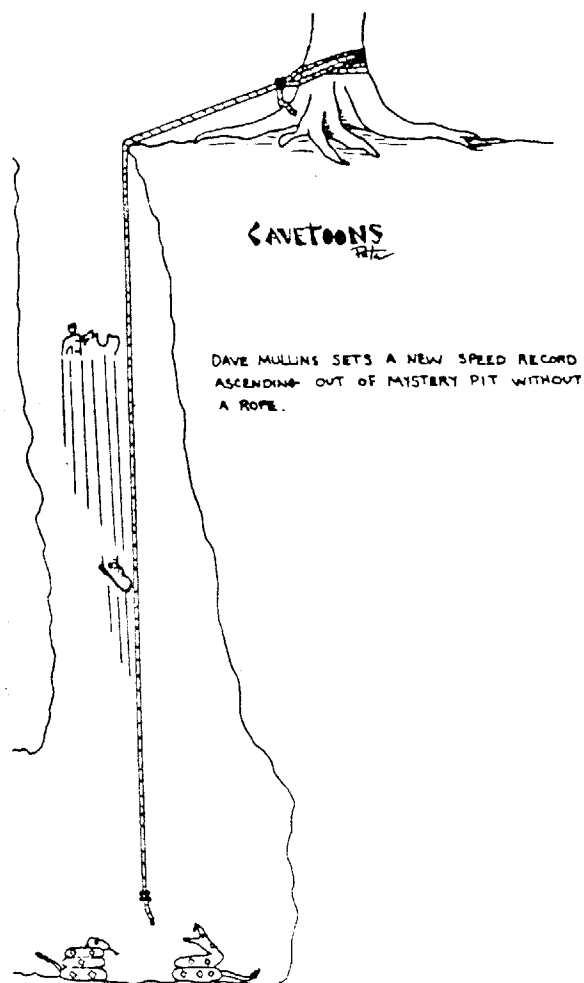
For further reading:

Conn, Herb and Jan. "Chasing the Winds Through Jewell Cave." Cavers, Caves, and Caving.

Larson, Lane and Peggy. Caving. Sierra Club Books.

Moore, George and G. Nicholas Sullivan. Speleology The Study of Caves.

Wigley, T.M.L. and M.C. Brown. "The Physics of Caves." The Science of Speleology.





## MEXPELEO 89

The first major international caving convention in Mexico is being planned for 26-30 December 1989 in Ciudad Valles, S. L. P. Jointly sponsored by the Union Mexicana de Agrupaciones Espeleologicas (UMAE) and the Association for Mexican Cave Studies (AMCS), this event will provide a great opportunity for Mexican and United States cavers to meet and cave together.

The Valles area is a spectacular caving area, with many famous caves such as Sotano de las Golondrinas nearby. Planned events include caving trips, slide presentations, and special interest workshops on different aspects of Mexican caving. There will be a camping

area adjacent to the convention facilities, and there are also several good hotels nearby.

Slide shows and other presentations are planned for late afternoon and evening, allowing for caving and outdoor activities during the day. All cavers are invited to present slide shows on their caving projects. Various caving projects are being planned to survey caves in the Valles area; cavers can sign up to participate when they arrive. Also, there are numerous caves and other sites to see on a self-guided basis. Volunteers to help with registration, field trips, and workshops are also needed.

For more information, write one of the addresses below for a Mexpeleo 89 circular, or telephone either of the individuals listed:

UMAE  
Ramon Espinasa  
Fuente de la Peninsula no. 19  
Tecamachalco, Mexico 53950  
tel. (905) 251-2986

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P. O. Box 7672  
Austin, TX 78713  
tel. (512) 467-2283

The above article was copied from the latest issue of the DC SPELEOGRAPH, the newsletter of the NSS Grotto in the Washington, D.C. area.