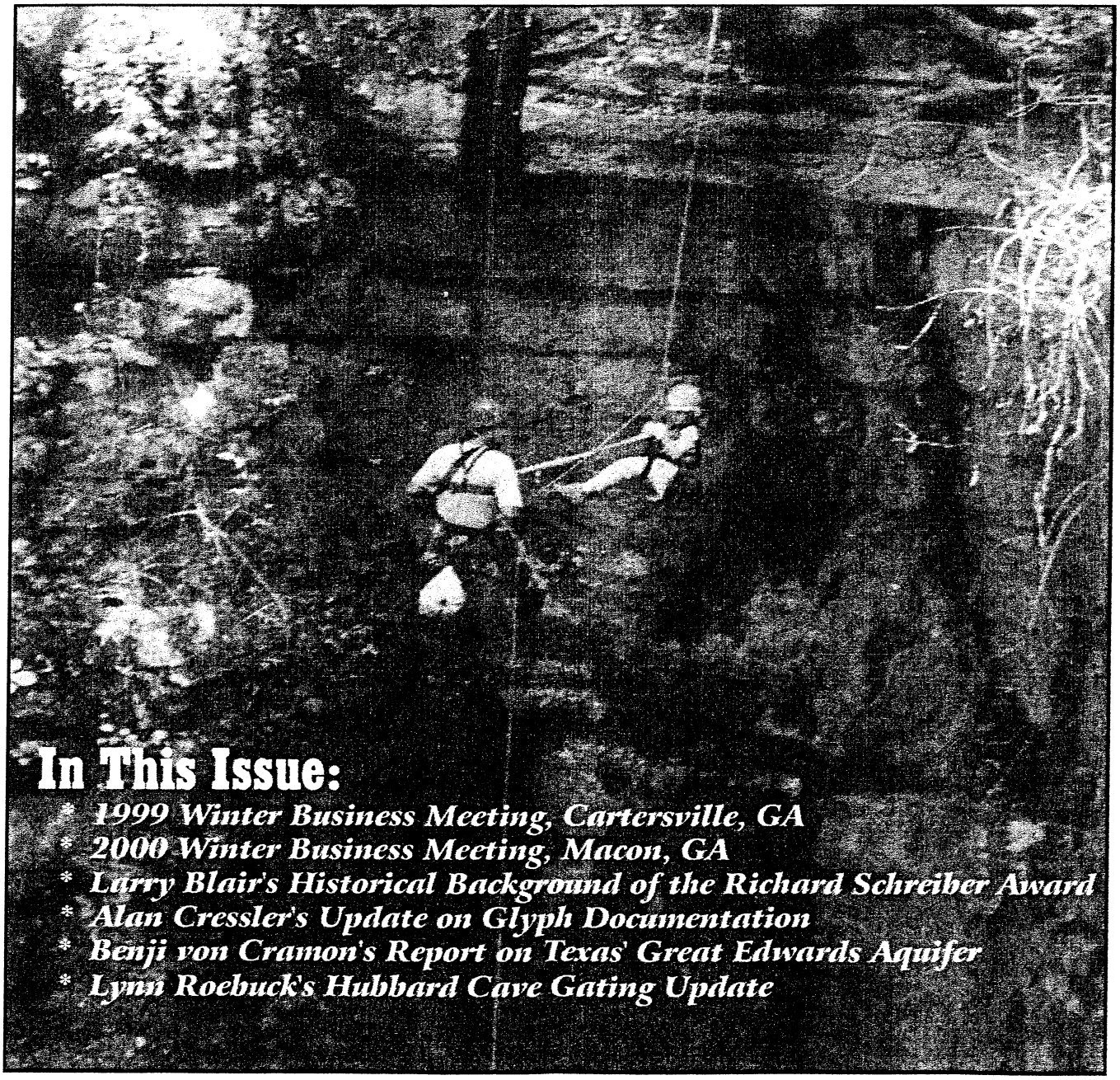
SERA Newsletter

Southeastern Regional Association of Grottos

Volume 8 February 2001



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WELCOME

Welcome to this edition of the SERA Newsletter. Special thanks go out again this issue to Larry Blair for contributing an excellent article on the background of the Richard Schreiber Award, one of the four big awards given each year by SERA. Thanks also go out to Alan Cressler for his update on efforts to document glyph caves in the SERA caving area and to Benji von Cramon and Rob Robbins for the photographs accompanying the article. Benji also contributed an article describing his experience in a recent hydrology workshop. Also, thanks to Lynn Roebuck for her update on the Hubbard Cave gating project. Thanks to all of you for contributing some great articles for this edition of the SERA Newsletter. Without your efforts, there would be no newsletter.

Don Hunter, Editor

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Contributing Editors:

Larry O. Blair, History Editor
Lynn Roebuck, Conservation Editor

2000-2001 SERA OFFICERS

Chair.....Rob Robbins
ViceChair.....Brian Roebuck
Secretary/Treasurer.....Jim Wilbanks

Cover:

McKenzie Crisp, 5 years old at the time of this photo, rapelling into Neversink with her Dad, David Crisp. David and McKenzie cave with the newly re-activated West Georgia Grotto in Carrollton, Georgia. You have probably seen McKenzie participating in the vertical contest at the past years Cave Carnival and TAG Fall Cave-In. She can scoot!!!!! Photographer unknown. Photo submitted by David Crisp

Note from the Chair

Reading in the 1998 SERA Newsletter, "A Note from the Chair" by Brent Aulenbach, 1998 SERA Chair, I find myself agreeing whole heartedly with his very last sentence: "With a bit of effort, through education and restraint, we can help protect caves for ~~generations to come~~."

If we don't start protecting them now, who will? Look to the past and see how much has been destroyed already due to our own ignorance. It is mainly through education, not only of others, but also those in our own ranks, that will bring forth the efforts needed. Reading Tag-Net along with many private caving lists, I come away with the knowledge that many questions are raised because of a lack of that very education. When you have questions and are not getting the answers you seek, please go to the authorities and ask those very same questions. Better yet, why not get involved in the particular project and meet the experts and ask your questions directly?

Let's just take for example the question of gating caves for bat protection, or any other reason for that matter. In stead of being reactionary and make a fool of yourself in front of others, why not seek to understand the whys and wherefores. There is nothing wrong with finding the facts and then basing your decisions/reasoning on them and learning more in the mean time.

Two out of the past three years at Fall Creek Falls State Park near Pikeville, Tennessee, many experts from the State of Tennessee, Tennessee Tech, Bat Conservation International, Lincoln Memorial University, University of Tennessee, The Nature Conservancy and the U. S. Fish and Wildlife Service have volunteered their time and donated materials to help educate cavers as to the contents of caves and how to help preserve them. The experts spent a lot of time answering intelligent questions providing answers and alternatives.

It is up to us, those that map and explore these very caves to be the ones directing the preservation. Brent said it all and said it well: "With a bit of effort, through education and restraint, we can help protect caves for generations to come."

Rob Robbins, 2000-2001 SERA Chair

1999 SERA WINTER BUSINESS MEETING

The 1999 SERA Winter Business Meeting, hosted by the Lost Mountain Grotto, was held on April 10, 1999 at the Etowah Education Foundation's Little Schoolhouse in Cartersville, Georgia.

Morning Session

After arriving at the Weinman Mineral Museum early Saturday morning for late registration and a quick tour, most of the meeting attendees left the museum and traveled into town to the Little Schoolhouse for the morning session. Don Hunter, sitting chair, called the morning session to order at 10:45 a.m. Thirty people were in attendance representing 23 Grottos/Organizations. The Roll Call represented the following:

Alabama Cave Survey
Athens Speleological Society
Campaign Area Caving Association
Central Alabama Grotto
Clayton County Cavers
Cumberland Spelean Association
Dogwood City Grotto
ETCR
East Tennessee Grotto
Flittermouse Grotto
Georgia Speleological Society
HR3
Huntsville Grotto
Lost Mountain Grotto
Middle Georgia Grotto
NCS
Nashville Grotto
SCS
Southeastern Cave Conservancy Inc.
Southport Chronic Cavers
Tennessee Cave Survey
Tennessee Central Basin Grotto
Upper Cumberland Grotto

After the roll call, Chair Hunter started the session by thanking a number of those in attendance for various contributions to SERA and the Winter Business Meeting, including Jessica Griffey, Chair, Lost Mountain Grotto, for hosting the event, Brent Aulenback for organizing the The Fifth Annual Map Salon and setting up the SERA website, and Dan Barnick for organizing the Photo Salon.

Following this, the floor was opened for reports from various SERA organizations. The following reports were offered:

Cavers Resource Workshop

Southport Chronic Cavers, represented by Rob Robbins, reported the Cavers Resource Workshop will be held in the near future. The event will last two days with lectures and two cave field trips. There will be eleven speakers and most probably will be held at Fall Creek Falls. The proceeds will go to the SCCI and Nature Conservancy.

Fentress County Cave Managemtent Plan

Upper Cumberland Grotto, represented by April Hanna, reported that the grotto was working on a management plan with the Nature Conservancy for Fentress County Cave. The Mayor of Cookeville, Tennessee is also verbally supporting action to prevent further contamination of caves via groundwater due to some local hydrology research.

Southeastern Cave Conservancy Update

Southeastern Cave Conservancy Inc., represented by Kenneth Huffines, reported 27 caves with over 700 acres. The DNR inventory and studies may allow for Frick's to tolerate cave trips in the next year. The Fox Mountain Cave Preserve has two remaining weekends of overland survey, so contact Jim Wilbanks if you can help.

1999 SERA Summer Cave Carnival

Huntsville Grotto, represented Tim White, in absentia, via e-mail read by Don Hunter, reported the SERA Cave Carnival will be held June 11-13 in Scottsboro,AL at Camp Jackson. The plans are well underway and they are trying to line up a band and power. The t-shirts and guidebook are being printed in the near future. The Landowners for Cathedral Caverns and Lower Sauta have been contacted for cave trips during the event. A local Deputy will be at the event to help with Huntsville's Security team.

Hubbards Cave Project Update

Southport Chronic Cavers , represented by Rob Robbins, reported the Hubbard's Cave in McMinnville,TN gating and refurbishing project is continuing. The state has agreed to assist with funding. The project will start Sunday August 1 and last thru for 15 days to hopefully complete the World's largest bat friendly Northgate. Also repair on the Southgate to improve its bat friendliness.

Tennessee Cave Survey Annual Meeting

Tennessee Cave Survey reported that their annual meeting will be April 24 in Sewanee,TN at the Blackmon Auditorium on the University of the South's Campus.

Alabama Cave Survey Annual Meeting

Alabama Cave Survey reports their annual meeting will be on April 18 in Huntsville,AL.

Don Hunter, SERA Newsletter editor, indicated that if enough information was submitted, two newsletters could be done per year versus a single issue. Don would welcome any submissions, pictures, articles on conservation, exploration, and history.

Afternoon Session

After lunch the afternoon session was called to order and the roll called. No additional organizations were present. The minutes from the 1998 WBM were approved with a minor change suggested by Brent Aulenbach. The treasurers report, as submitted by Bill Bussey, was approved.

Old Business

Under old business, *The Southeastern Cave Conservancy Inc.* was presented the $270.00 check, as approved in the 1998 budget. The check was accepted by Kenneth Huffines. April Hanna, representing Upper Cumberland Grotto, reported that only a portion of Bridgestone/Firestone's property was donated to the state. This did include some caves but did not include Rose Cave. April also reported that the road that leads to Rose Cave is no longer a public road and it is now on private land and is gated. Numerous rumors abound about what will be done with the remaining property but it is hoped the state will receive it, too. April also reported that liability is a major concern of Bridgestone/Firestone.

New Business

Order of Rotation for SERA Events

There was considerable discussion regarding the current rotation, or order of refusals, for SERA organizations hosting the Summer Cave Carnival and

the Winter Business Meeting. It was suggested, by Don Hunter, Athens Speleological Society, that the order of refusals for each event were becoming nearly in sync, resulting in the possibility that a grotto might be faced with the possibility of hosting both events within a short period of time. The topic was discussed at length and after much discussion, it was decided that the problem was likely to fix itself, as smaller grottos passed on the Cave Carnival. Dan Barnick and Don Hunter agreed to investigate which organizations belonged or desired to be included on the list. Specifically, mail had been returned from JUST Cavers and Bon Aqua Cave Rats in recent mailings. Several smaller grottos also indicated that they would consider co-hosting a larger event, i.e., the Cave Carnival with other smaller grottos. Details of this discussion are available in the detailed minutes from the meeting.

Grant Request from Alan Cressler

Don Hunter, Chair, read a grant request from Alan Cressler, requesting $200 to defray cost of film and photo processing for his work documenting Prehistoric Cave Art with the University of Tennessee Anthropology Department. After much discussion, Rob Robbins, Southport Chronic Cavers, motioned that $200 be awarded to Alan, seconded by Nancy Holler-Aulenback, Flittermouse Grotto. The motion passed unanimously.

SCCI Donation

Nancy Holler-Aulenbach, Flittermouse Grotto, motioned for SERA to donate $200 to SCCI Fox Mountain Cave Preserve. The motion was seconded by Rob Robbins, Southport Chronic Cavers. The motion was unanimously passed by organizations present to donate $200 to Fox Mountain Preserve.

Elections

Elections were held for officers for the upcoming year. Dan Barnick, Vice Chair for 1999, becomes Chair for the upcoming year. Rob Robbins was elected Vice Chair and Jim Wilbanks was nominated and elected, in his absence, as the new SERA secretary/treasurer, replacing Bill Bussey, who had asked to be relieved of his duties.

SERA Awards

Following the election of officers, the award committees met to evaluate the nominations and select the winners of the 1999 SERA awards. The following winners were selected:

Francis Mckinney Award:
Wm Shrewsbury

Richard Schreiber Award:
Michael Gilbert

Landowner Award:
Glenda Reese and Mildred Hall, Yell Cave

Conservation Award:
Mark Wolinsky

Map and Photo Salon Results

Map Salon (Fifth Annual)

Eight maps were entered, the majority being Georgia caves. The following winners were selected from the entries:

Merit Awards

In the horizontal category:

Tom Moltz, Little Liby Cave
Brian Williamson, Spooky Cave
Jerry Wallace and Steve Capps for Kirchmeyer

In the vertical category:

Tom Moltz, Steel Wheel Well

Best of Show, Horizontal Cave:
Don Lance for Billy Stone Cave

Best of Show, Vertical Cave:
Jerry Wallace for Throbbing Hum

Photo Salon

There were a total of 35 entries by six photographers and four judges for the salon. The following awards were made to entries:

Honorable Mention

Bob Biddix, in the slide category, for Gourdneck Cave

John Klayer, in the surreal print category, for GloryholeHologram

Lynn Roebuck, in the print category, for Soda Straws "Dripping"

Lynn Roebuck, in the print category, for APhotograph of a photographer@

Third Place

Larry Blair, for slide of Stephens Gap
Jeremy Hill, for print of Bishop Cave

Second Place

Bob Biddix, for slide of Salt River Cave
Jeremy Hill, for print of Lost Cove Cave

First Place

Bob Biddix, for slide of Merry Branch Cave
Lynn Roebuck, for print of Salamander

Best of Show

Bob Biddix, for slide of Merry Branch Cave

Banquet

Following the meeting, the banquet was held at a quaint little coffee shop several blocks from the Little Schoolhouse. A fine buffet was served and a great program was presented by Alan Cressler, who presented his slide program on Glyph Caves in TAG.

(The preceding was based on the minutes of the 1999 SERA Winter Business Meeting, expertly recorded by Holly Bunch)

2000 SERA WINTER BUSINESS MEETING

Morning Session

The 2000 Winter business meeting was held in Macon, GA at the Macon Museum of Arts and Sciences' auditorium on February 26, 2000. The meeting was called to order by Chairman Dan Barnick at 10:15 AM EST. The Middle Georgia Grotto was thanked for hosting the event. It was announced that dinner would be at 6:00 PM and the programs would begin at 7:00 PM. It was announced that the Sixth Annual SERA Map Salon would be held and that Brent Aulenbach was coordinating it. It was also announced that a photo salon would be held. Dan Barnick and Holly Bunch were to be the coordinators.

There were 22 organizations represented:

Alabama Cave Survey, Athens Speleological Society, Campaign Area Caving Association, Carolina Cave Survey, Central Alabama Grotto, Chattanooga Grotto, Clayton County Cavers, Cumberland Spelean Association, Dogwood City Grotto, East Tennessee Grotto, Flittermouse Grotto, Georgia Speleological Society, HR3, Huntsville Grotto, Lost Mountain Cavers, Middle Georgia Grotto, Nashville Grotto, Southeastern Cave Conservancy, Southport Chronic Cavers, Spencer Mountain Grotto, Tennessee Caver Survey, and Tennessee Central Basin Grotto.

Brent Aulenbach and Alan Cressler spoke briefly about the Scott's Gulf situation. There was a presentation about the 2000 SERA Cave Carnival by Lee Trowbridge of the East Tennessee Grotto. It will be held near Crossville Tennessee at a 4H campground on May 19-21. A slide show was presented. The morning session ended at 11:45 AM.

Afternoon (Business) Session

At 1:46 PM, the afternoon business meeting was called to order by chairman Dan Barnick. The minutes from 1999 were read and approved. The treasurer's report was read and approved (see attachment).

Topics of business:

The right of refusal list was discussed.

Rob Robbins made a motion that the Sec/Treas post be changed to a multiple year post. Dan Barnick explained the procedure for making a change to the constitution. Jim Wilbanks spoke in opposition. Rob Robbins withdrew the motion. Jim Wilbanks moved to establish a committee to draft changes in the constitution and bylaws to bring them up to date. The motion was unanimously approved. Named to the committee were Rob Robbins, Debby Johnson and Jim Wilbanks.

Don Hunter moved to rename the SERA Conservation Award in honor of Alexis Harris. There

were several seconds and no discussion. The motion was passed unanimously. The award is to be known as the Alexis Harris Conservation Award.
Don Hunter recommended that a new award be established. He felt the current awards were very specific and that a more general award was called for. He recommended it be called the Meritorious Service Award. A committee was named to come up with recommendations to be voted on at the next meeting. The members are Don Hunter, Dan Barnick, and Lynn Roebuck.

Jim Wilbanks moved that a letter of thanks be drafted to Tim White and Jerry Wallace for producing the new certificate. The motion was carried unanimously.

Jim Wilbanks read a letter from Benjy Von Cramon asking for a five hundred-dollar grant. He is going to produce a documentary on the role karst plays in groundwater contamination. Nancy Aulenbach spoke in favor. There was a general discussion about whether we could afford the grant. There was a general discussion about the importance of the subject. Many members spoke of their personal experiences and how this documentary could affect the public's awareness. Several persons expressed concern about any portrayal of sport caving. The motion was unanimously agreed to.

Alan Cressler moved that two hundred dollars be given to the SCCI. Jim Wilbanks spoke about the Fricks Cave mortgage. Jean Trowbridge offered a friendly amendment to increase the amount to three hundred dollars. Chris Hudson seconded. The motion was carried unanimously.

Dan Barnick brought up the fact that Middle Georgia was going to have a shortfall on the finances for the SWB meeting. Jim Wilbanks pointed out that there was an action authorizing contribution of up to one hundred dollars to the hosting grotto. Middle Georgia was asked to report the shortfall to the treasurer and told the money would be sent.

Debby Johnson asked about front money for the 2000 carnival. Jim Wilbanks pointed out that there was no provision for doing this although it had been done in the past. He stated it might be included in the bylaw update. Brent Aulenbach pointed out that it could be voted on by the previous winter business meeting.
Jim Wilbanks spoke about the creation of a history binder. All the past minutes, annual reports, and other documents had been bound in order. This is to be handed down and maintained for future members.

Awards committees were formed:

Francis McKinney: Brian Roebuck, Debby Johnson, and Varie Justin

Richard Schreiber: Rob Robbins, Holly Bunch, and Don Hunter

Larry Adams Landowner Appreciation Award: Larry Blair, John Klayer, and Jim Wilbanks.

Alexis Harris Conservation Award: Brian Williamson, Michael Gilbert, and Alan Cressler

Don Hunter again expressed his thanks to the Middle Georgia Grotto. There was a round of applause.

Elections were held:
Jim Wilbanks was reelected by acclimation to Sec/Treas.
Brian Williamson was nominated by Don Hunter for Vice Chair. He accepted and was approved by acclimation..

The business meeting as adjourned at 3:15 PM.

The Awards committees then met and the results were:

Francis McKinney: Kenneth Huffines
Richard Schreiber: Andy Zellner
Larry Adams: Jackie and Francis Loyd
Alexis Harris: Lynn Roebuck

The results of the sixth annual SERA Map Salon were:

Merit award: Jeremy Hill for Fountain Cave
Merit award: Jerry Wallace for Overlooked Pit
First place in new cartographer category: Brad Long for Powerbar Pit.
First place in the vertical cave category: Jack Thomison for Beckoning Well
First place for horizontal cave as well as Best of Show: Brent Aulenbach for Davis Farm Cave.

The photo salon had 25 entries in three categories. The winners were:

John Klayer, Honorable Mention for his hologram
Jeff Boarman, third place in prints for Glory Hole.
Rob Robbins, second place in prints for Tennessee Cave Salamander.
Jeff Boarman, first place in prints for Glory Hole.

Larry Blair, first place in slides for an unnamed slide of formations.

The banquet was first rate and held in the auditorium as well.

Programs for the evening were:

Tom Moltz on splitting rocks with feathers and wedges (plug and feather)

Dan Barnick and Holly Bunch with their 3D slide show

John Klayer with a demonstration of holographic photography.

Respectfully submitted
Jim Wilbanks

HISTORICAL BACKGROUND OF S.E.R.A.'s RICHARD W. SCHREIBER AWARD

by Larry O. Blair

INTRODUCTION

With the untimely death of Richard Schreiber on January 6, 1990, the Southeastern Region of the Nation Speleological Society lost one of its most respected cavers. As soon as the initial shock of his death wore off, discussion started on the formation of an award in his name. Richard had lived a short but full life of exploration and mapping of our beloved caves. History will remember him as perhaps one of S.E.R.A.'s and TAG's best. This short article will document the events leading up to the formation of this award. For a complete history of Richard's caving life, please refer to "The Story of a Caver" in the NSS News, April 1990, pages 97-100 and also for a lesser insight into his life, see the "Caver's Forum": "Richard W. Schreiber---More Memories" in the NSS News, July 1990, page 170.

CHRONOLOGY OF THE AWARD'S FORMATION

As happenstance would have it, the S.E.R.A. Winter Business Meeting for that year was held on Saturday, March 31st, not long after Richard's death. That year the meeting was held at the Motel Birmingham in Birmingham, Alabama.

There was a proposal made on the floor during the meeting that the Francis E McKinney Award be changed to include Richard's name and be known in the future as the "Francis E. McKinney/ Richard W. Schreiber Award". This motion was voted down as it was felt that to combine the award in such a way would be to diminish either one to a certain degree. There should be an award in the name of both of these respected cavers.

At that time, the Birmingham Grotto proposed that a committee be set up to define the basis for, the feasibility of and to set up the rules, regulations, etc. for a Richard W. Schreiber Award. A motion was voiced and approved. A five member group was elected for this purpose. These committee was comprised of Myrna Attaway, Bill Bussey, Joe Domanovich, Karen Padgett and myself. We didn't elect a chairman but decided that we would have equal status within our group. We spoke among ourselves and decided to put our thoughts down on paper and try to meet at that years Summer Cave Carnival, to be held at Goose Pond Colony Campground, just outside of Scottsboro, Alabama.
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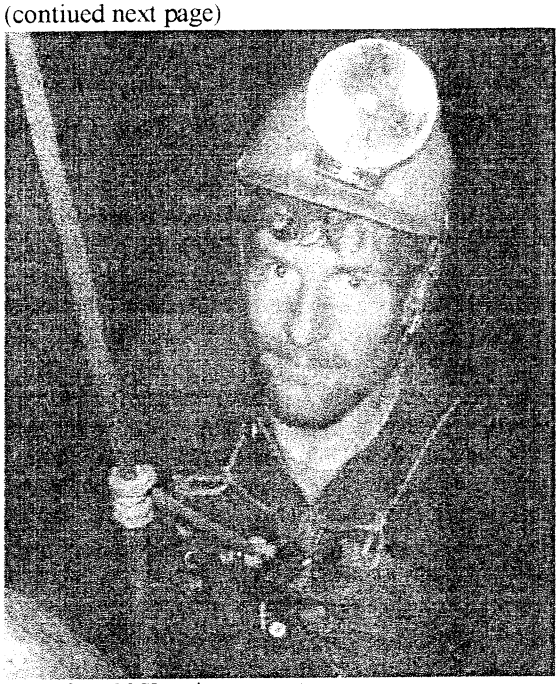


(Photo from SCCI, various sources)

Richard W. Schreiber

Early TAG caving....note the horse girth, the solid braid poly prussik, and *no polypro*

Richard Schreiber Award, continued

I wrote a letter, dated May 5, 1990, to Richard's wife, Joan. In it I explained the formation of the committee and our intentions, asking her for her thoughts and suggestions and spelling out my own thoughts on such an award for my old friend.

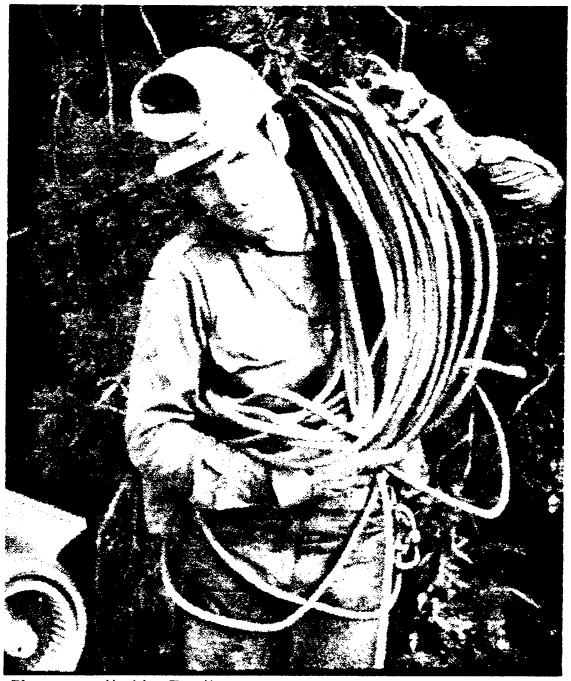
I received a very nice reply from Joan, dated May 8th. She was very approving of our effort and added one suggestion to my own ideas, which was, of course, honored by the entire committee. Joan wrote..."I agree with your list of "conditions", with the one possible addition, which follows: I would like to see the award, should it be decided that there be one, given to a relatively new caver...someone who has not been caving for a long time. Richard was a natural and enthusiastic teacher, I think that making an award in his name to a newcomer might help encourage others with less experience to tackle a project themselves and not wait for one of the "old-timers" to lead."

The committee, minus myself, did in fact meet at the Cave Carnival. I had already planned a trip with my brother Ronald to Yellowstone and other western national parks for that summer. I was told later that a lot of progress was made on the planning of the award at the Cave Carnival.

Later that year, during the Thirteenth Annual TAG Fall Cave-In, held each year at the Sequoyah Caverns Campground in Valley Head, Alabama, Bill, Joe and myself got together in the field on "Vendor's Row". They filled me in on the earlier Cave Carnival meeting and we generally discussed how things stood as of that date. This was on October 6th.

Again, Joan was written, on November 21st, and filled in. Also, during all of this time, Bill Bussey, S.E.R.A. Secretary/Treasurer, had been keeping others informed of our efforts and in-putting information into his computer. Bill did an excellent job of keeping track of all of our thoughts, criterion, rules and how the committee would operate for the future.

In a letter dated February 7, 1991, a photocopy of the newly printed award certificates Bill had just picked up from the printer was enclosed. As Bill stated..."Though similar in typesetting to the Francis McKinney award, the background flourishes are in red and gold, instead of black and gold. The typesetting in both to save on money, and to provide some sense of design continuity to the awards. Though different, they are both from SERA!" The award certificates are very handsome containing a "shadow effect" image of both the NSS and S.E.R.A. logos in the background.



(Photo supplied by Benji von Cramon)

Richard wrestles an unruly hog on an early TAG caving trip

THE FIRST PRESENTATION

As the 1991 Winter Business Meeting approached, we felt that we were ready. Bill had circulated several copies of the rules and regulations for the award during the time since we had put them down on paper. We had made corrections and in effect, "fine tuned" the entire package to this point. He also had circulated a list of nominations he had received and the rest of us gathered any names we had gotten as the word spread of this new award.

The meeting was held on February 22nd at the Goose Pond Colony activity building outside of Scottsboro. The award was brought up as a topic of discussion during the meeting under old business. We announced that we were indeed ready. The nomination rules were laid out, the award itself had been designed and we had a list of nominations. The award would be presented that evening at the yearly banquet.

Richard Schreiber Award, continued

Bill had previously penned a letter to Joan respectfully asking her to attend the banquet that night and to perhaps make the first presentation of the award in her late husband's name. Joan, however, was unable to attend and a letter she had sent to be read to those gathered for the event was inadvertently left at home by whoever it was that she had sent it to!

After the meal, the first Schreiber Award was presented. The certificate and accompanying monetary award was presented for the first time to Rick O'Hara.

It was with pride and a sense of humility that we, the committee, had been able to design the entire award program and actually have it ready and then were able to present it all in one year and too since we all live in such a widely scattered area.

SOURCES

1. Personal Cave Log, Book No. 5
2. Personal letters between Bill Bussey, Joan Schreiber and myself
3. The Richard W. Schreiber Award criteria and outline form
4. Copy of the Richard W. Schreiber Award certificate
5. S.E.R.A. pre-registration forms for the 1990 Winter Business Meeting and Cave Carnival and 1991 Winter Business Meeting

CURRENT RESEARCH ON PREHISTORIC CAVE ART

By Alan Cressler, NSS 24392

I would like to give an update on research being conducted by the Cave Archaeology Research Team (CART) of the Department of Anthropology, University of Tennessee.

Over the last couple of years, member of CART, under the guidance of Professor Jan Simek, have been working in various caves in the Southeastern U.S. identifying and documenting prehistoric art, as well as other forms of prehistoric usage. There are over 12,000 known caves in the tri-state area (TAG) and to date there are only 30 known caves that contain prehistoric art. This does not include rock shelter sites, which are numerous.

The process of documenting these sites includes, photography, age dating, and through archaeology, identifying other cultural relationships like burials, mining, and ceremony. This work is conducted by a multi-disciplinary team that includes students of anthropology, cavers, and other professionals.

Since the SERA Winter Business Meeting on April 10, 1999, we have concentrated our efforts in several of the known sites. I have taken over 1,000 slides in these various caves. This activity was partially funded by a generous grant of $200 from the SERA Grants Committee. These images are currently

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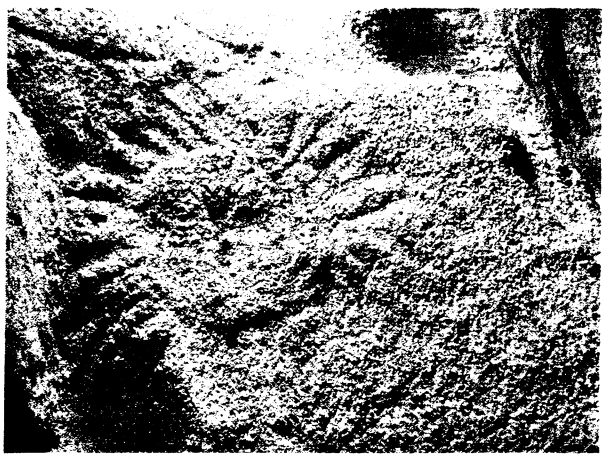
(Photo by Rob Robbins)

Alan Cressler documenting glyphs in TAG cave



(Photo by Benji von Cramon)

Glyph of Sun

Current Research on Prehistoric Cave Art (Cont.)

being analyzed by team members. Many of the images have been incorporated into talks and slide shows on the subject and given to cave clubs, civic and archaeological groups, and academia.

One of the most important tools in the study of these art sites is radiocarbon age dating. Funding for this has been generous and we now have a correlated age for many of the known sites. Several of the sites have numerous dates helping define an age range for prehistoric usage.

Future work includes looking for additional cave art sites, educating the caving community to recognize this valuable resource, protection of known sites though education and gating (when necessary), and continued research on known sites.

If anyone ever finds a cave that they feel might contain prehistoric cave art, I am always willing to investigate the site.

(Photo by Benji von Cramon)

Professor Jan Simek, University of Tennessee, Knoxville, and Alan Cressler in unidentified TAG area cave collecting prehistoric organic material for radiocarbon age dating.

The Hubbard Cave Gate Project

Working together to Protect! *By Lynn Roebuck*

Why would anyone in his or her right mind want to volunteer to carry tons of steel and participate in gating a cave for a two-week period? Well, when you believe in the protection and continued survival of endangered species you just naturally volunteer to help. Speaking for myself, this was the case with Hubbard Cave and the reason why I volunteered to help for the duration of the two-week gating project. I call this kind of volunteer effort "The good neighbor policy".

Hubbard Cave is located in the beautiful Cumberland Mountains of Tennessee. It contains one of the world's largest bat hibernation colonies and has been listed among the three most important hibernaculum sites in America! Not only gray bats (myotis grisescens) inhabit the cave but also the endangered Indiana bat (myotis sodalis) and about six or seven other species as well. The gating at Hubbard Cave to protect the endangered colonies even futher was scheduled and began Sunday July 18, 1999 and was to continue through July 31, 1999. Volunteers from all walks of life volunteered their time on this protection project. The project was under the direction of Gabby Call , Tennessee Nature Conservancy. TNC owns the Hubbard preserve. Roy Powers, of the American Cave Conservation Association, Master Cave Gate Designer and his assistant, Rosa Lee Moore, were in charge of the gate construction project. The plan was set to erect a gate on Hubbards North passage, make modifications to the South Gate to make it more "bat friendly" and to put finishing touches on the West gate.

According to historic accounts, the cave was discovered in 1810 by Joseph Heberlein and named "Heberlein" Cave for this discoverer, but over time the name was corrupted to Hubbard Cave. The cave contains evidence of saltpeter mining during the Civil War and even older cultural cave resources that have been dated to about 600 B.C. In 1917 Thomas L. Bailey explored Hubbard Bat Cave to determine the value of the caves as a possible source of niter. He reported also that some of the earth had been taken

(Continued on next page)

Hubbard Cave, Cont.

out by the forest nurserymen in the region and used as fertilizer. The Hubbard Cave History Project Team's efforts have also shown that the cave was visited and explored by an enormous amount of visitors from the early nineteenth century till present day. As is evident by the signatures they left behind, such as 1809 Absalom Brown, Joseph Tate 1865 and J. Coppinger 1892. This information has helped piece together a history of the early years of visitation and also the disturbances to the cave.

Hubbard Cave has apparently suffered from human disturbance since very early times. In the most recent times, spanning the last forty plus years, the bats seem to be the ones that have suffered the most from human disturbances, from over visitation to even violent attacks. The colonies greatest disturbance seems to have been by human visitation during the time in which the colonies, which number in the tens of thousands, are in hibernation and need seclusion. This type of disturbance causes the bats to starve, to the point of death, when their winter fat reserves are used up after awakening prematurely. The gating of the three passages was important to the survival of these colonies and secondarily helped protect the cultural cave resources. A very solid, well designed bat friendly structures should help protect the bats from vandals and visitation during this sensitive bat hibernation period each year, which is September - May. The cave is open to responsible cavers during the summer months.

The first work day began as a typically beautiful summer morning in Tennessee as we hiked the half mile up the hill in the incredible heat and humidity to the entrance sink. We were greeted by no other than Rob Robbins, who was busy taking volunteer's names and affiliation. The agenda for the day was to move about ten tons of steel down into the entrance sink "by hand"! Yes, most volunteer work is physically demanding. Many grottos volunteered to help and represented were the Appalachian Grotto, Birmingham Grotto, Huntsville Grotto, Nashville Grotto, Southport Chronic Cavers Grotto, Spencer Mountain Grotto, Tennessee Central Basin Grotto and the Upper Cumberland Grotto.

Having been alerted by a Tag-Net post of Thany Mann's the day before, we checked for the historic tree ladder that someone had removed from the cave and apparently used to climb out of the sink. As Thany said, it was lying right there in the entrance collapse where the vandal had left it. Joe Douglas and Brian Roebuck returned the historic tree ladder to its rightful place in the North passage as soon as we arrived at the sink. With the ladder safe again it was time to begin the days work. The rest of the day was spent moving steel and other materials down the entrance path, across the slippery hazardous lip of the sink, and down the short drop onto the spoils pile in the entrances. The work was hot and required lots of heavy lifting, but all of the volunteers worked well together as a team and we were finished by early afternoon. Then Joe Douglas treated many cavers and new cavers to a historic tour through the cave much to their delight!

Construction of the North Gate began the following day, which was Monday. First the footer was constructed to support the massive structure to be built. Then vertical member's went into place and finally horizontal members began being measured and cut by Rosa Lee Moore, positioned into place by the volunteers and welded by TNC's Dave Campbell and Jason Perry the local welder. Handling the four-inch and six-inch angle iron is where the volunteers are invaluable on this type of project. Just one of the twenty-foot pieces of angle iron weighs approximately two hundred plus pounds with each piece being moved a minimum of three times before it is welded. The work week days found us with approximately six to eight volunteers working each day. The majority of these volunteers being of female gender. Most of the caver volunteers were only able to help on weekends. A few cavers, however, made it to help through the week and they just do not know how much their help was appreciated, like Jim Wilbanks and Bill Walter. Work continued at a steady pace with only one partial day being called off by Roy because of the lightening storm in the area that threatened the safety of the volunteers. With much hard work by everyone, the gate on the North passage was completed on the following Tuesday, July 27th.

The modifications to the 14-year-old South Gate and completion work on the West gate began Saturday July 24 while we had plenty of extra weekend helpers and many cavers around. TNC sponsored a fantastic Bar-b-que dinner Saturday evening for all the volunteers to show their appreciation for their efforts.

Work on the West gate consisted of reinforcing the existing welding, welding a breech in the gate where a vandal had gained entry and to install frontal plates. Then the gate was scraped and

Hubbard Cave, Cont.

painted with a protective coating. The West gate was officially completed on Sunday, July 24th, 1999.

To complete the South Gate (which was first constructed in 1985) first the whole gate structure had to be stabilized and reinforced. This was done by drilling into the limestone at the top of the gate and hammering in 8 inch long by 1-inch diameter pins. After the gate was stabilized placement of vertical support reinforcement members began on each of the three center columns. Finally we could begin the South Gate modification, which consisted of cutting out the top center portion of the gate. Then we began to build an open box-shaped expanded metal structure. This bat friendly open box design was installed to allow the bats a preference of choice when exiting and entering the cave, which they can do through the horizontal member or through the open box. Finally, the South Gate was completed on Thursday July 29th, 1999. The whole project was now finished and we were still two days ahead of schedule.

It was so wonderful to see volunteer's from all walks of life, cavers, non-cavers, scientists, biologists, construction workers, naturalists, computer programmers, homemakers, engineers, farmers and others working together for a common goal. That goal was to protect this highly significant bat cave! It was the volunteer team effort that made this project a success. This project could not have been completed with out the help of all the volunteers who so unselfishly devoted whatever time they had available to come and work toward the protection of the endangered bat colonies.

In October, several months after the gates were complete, an out-flight visit to Hubbard's was planned to observe the bats and see how they were adapting to the gates. From this writers observations, the bats seemed to be adapting well to the gates. They flew through the horizontal members of the gates with just as much ease as they did when flying over the top of the North Gate, through the top of the West Gate and through the South gate's open box structure. No preference was noted as to which route the bats took. Only through continued observations and study will we come to have a complete understanding of how bats adapt to the protective gates.

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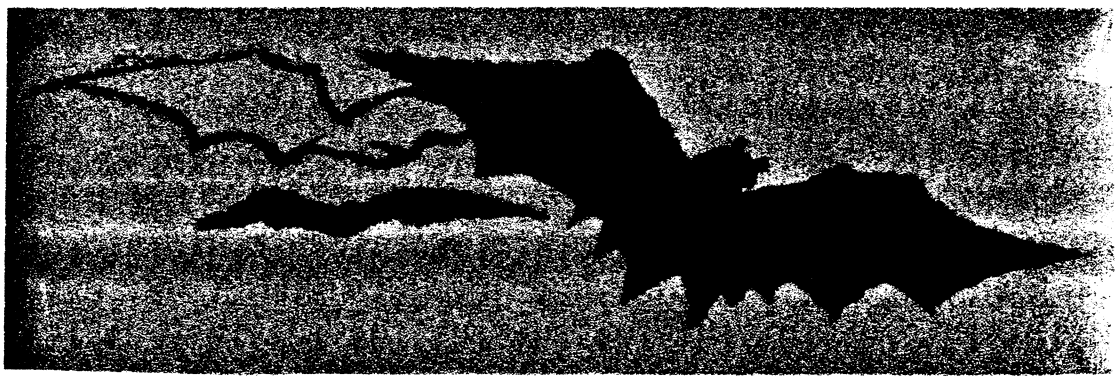
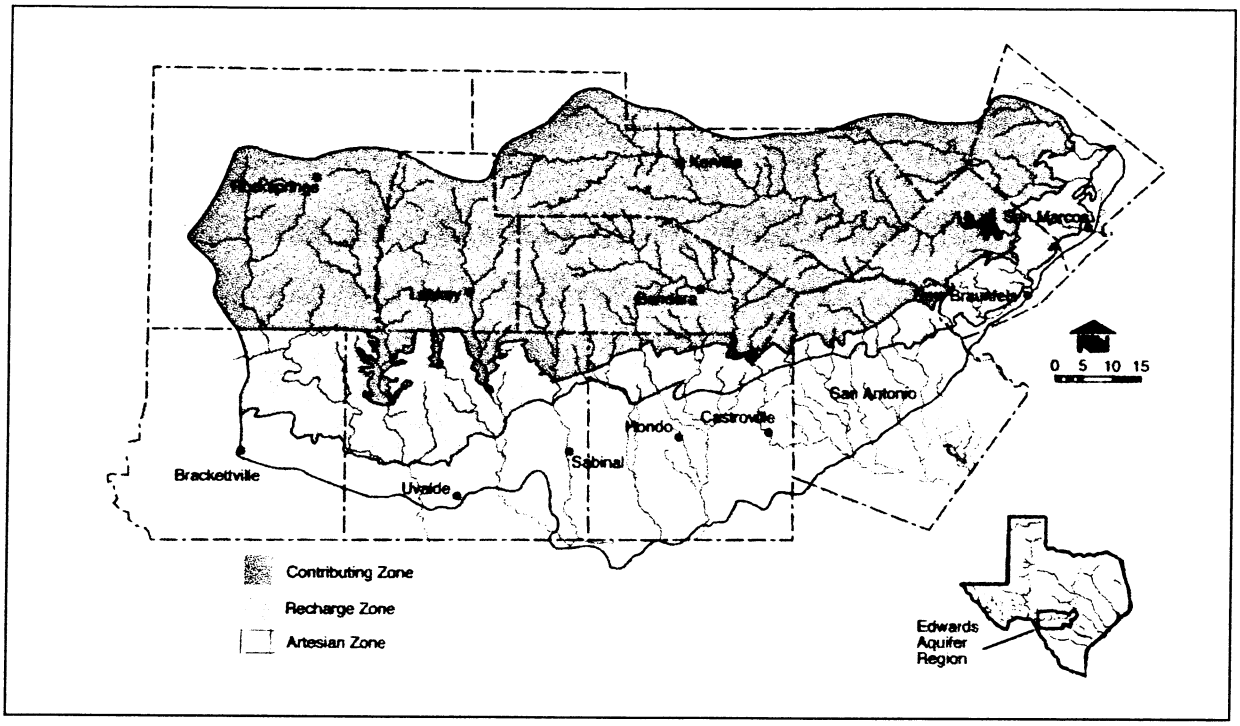


Hydrology of the Edwards Aquifer

By Benji von Cramon



Locals refer to it simply as "the Edwards". That the people of any community would yet know their aquifer from a hole in the ground is remarkable, but then in this area of southern Texas there's a TV reporter telling you about water issues just about every day. The 1.2 million residents of San Antonio follow the ongoing debate over water quality and quantity problems because water is important stuff, because economic growth is also important, and because nobody is at all sure of how to bring these matters into balance.

My visit to San Antonio and outlying areas represents a first step into the research for a one-hour documentary about the sensitivity of karst landscapes. Funded, in part, by a grant from SERA, I attended a course in hydrology, taught by Dr. George Veni of the Center for Caves and Karst Studies at Western Kentucky University. (The Center is in Bowling Green, Veni teaches the course out of San Antonio). I was advised the course was a "can 'til you can't", meaning you work all you can... 'til you can't. Lectures ran from 8am until noon. The class of twenty then packed into vans and headed out for the recharge zone. (For residents of the Edwards, "recharge zone" has become another buzzword with controversial implication.) We grouped around surface karst features — most of them highly subdued, some of them outright subliminal — and tried to make sense of a basic question; how is the water getting down?

My first impression of the other students attending was amazement at how many local government agency and private engineering firm personnel were sent to attend a course to learn about caves — San Antonio Water System, Texas Natural Resource Conservation Council, City of San Antonio, Edwards Aquifer Authority, etc. Out of twenty students, we only had one other caver besides myself who wasn't sent there by an employer. The vast majority of these professional geologists, living atop one of the nation's largest aquifer and making their living in various ways connected to knowledge of it, had never been underground to learn about their subject from the inside out. While the people here clearly understand the need to protect a precious resource, it's no wonder this natural storm drain system remains so poorly understood — only a handful of cavers ever look inside; access is limited and to the actual aquifer it is next to impossible; the plumbing in this karst system is typically complex and then, atypically, a bunch more complex, and spread out over thousands of square miles.

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Edwards Aquifer, cont.

At least by karst hydrologist' standards, it's a famous quote from a Texas Supreme Court Judge ruling a case involving water rights issues back in 1904: "Because the existence, origin, movement, and course of such water, and causes which govern and direct their movements, are so secret, occult and concealed , an attempt to administer any set of legal rules in respect to them would be involved in hopeless uncertainty, and would, therefore, be practically impossible." The ensuing law stated that property owners in the state had a right to all the water their wells could pump from beneath their land. As the Edwards is an enormously productive deep artesian aquifer, this modus operandi went unchallenged for many decades.

A Broadbrush Sketch of the Development of the Edwards Aquifer

Act I:

Before Texas, before the Gulf of Mexico, about 100 million years ago, the greater region is a shallow seabed. Calcium carbonate precipitates out of ocean water, dropping to the ocean floor. This fundamental building block of limestone is rarely pure. Chemistry describes the spectrum of possible forms taken by minerals. From manganese-rich dolomite, to quartzy sandstone, to shales, siltstones, clays, and marls, limestone beds form in definable units because of the combination in varying proportion of calcite with any of these minerals. Another factor isn't mineralogical, but biological. The ocean floor is a graveyard of skeletal remains from ancient sea life, contributing a significant volume of calcium carbonate.

The motion of the ocean mixes and redistributes various sediments, layering one definable unit upon another in patterns consistent with what you would expect in a shallow seabed. The higher energy ocean side deposits show greater vertical relief. An extensive coral reef feature provides a barrier to the calm waters of the back bay environment. 65 million years ago, the inland seas recede for the last time, leaving stack upon stack of compressed beds. The units vary in mineral composition, in solubility, in permeability, in porosity, in structure, in thickness, etc. Vast amounts of coral and shells are sandwiched between relatively impermeable beds. The stage is set for massive cave development.

Act II:

Some 20 million years ago — tectonics provides the engine for uplifting of the Edwards Plateau and lands north/northwest of the Balcones Fault Zone. At the same time, lands to the south/southeast drop some 600 vertical feet in a series of parallel faults, a process called en echelon faulting. A crude illustration of the idea is a standing row of books that tips to one side, with books at the end sliding away and downward. The subsidence extends to the Gulf of Mexico. Along the series of Balcones fault lines lower units become exposed in places as one section slides down against an adjoining section, rendering vertical relief in stair step pattern. A 400'to 1000' thick limestone unit as porous as a sponge 1500'to 4000' down is exposed to the surface along the northern flank, foreshadowing yet greater potential for the development of a deep artesian aquifer.

Act III:

While tidal-swept saltwater (the character that played a key role in shaping the surface topography of individual stratigraphic layers in this region) slowly exited the stage during the opening Act, water on the Water Planet never says goodbye forever. She develops a split personality, part of her going underground, doing her work at the level of deep sea vents, the other part reincarnating into gas form, into the atmosphere, then precipitating onto the land as snow, as hail, and as fresh water. (She too will find her way underground, ultimately meeting up with her molecular relative from below... stay tuned for the subplot, the Bad Water Line).

In a timeless hydrologic cycle, water falling on high ground seeks the most efficient path back down to the mother of all water tables, the ocean (actually, the bottom of the ocean). As water drains across the Balcones, it erodes the sharp features, dissecting the perimeter of the Edwards Plateau and leaving erosional remnants referred to as Texas Hill Country. The highest points of the hill country are part of the same lithologic unit as the top of the Edwards Plateau. The rock being eroded between the hills is obviously not erosion resistant. This includes the Edwards Limestone north of the Balcones and is higher up than the newer strata on the surface to the south. Remember, one result of the stair-stepping fault, a 10' to 600'+ shear vertical displacement, is a discontinuity of rock formations, such that newer formations south of the fault lines are now below or adjacent to older formations to the north. Rain falling on the porous Edwards soaks in, forming

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Edwards Aquifer, cont.

conduits that drain down to and are perched upon the older, less permeable Glen Rose limestone. Caves can form in the Glen Rose, and some water is pirated down to conduits that surely communicate with the Edwards Aquifer at depth (Not all accept this as fact. It implies redefining the recharge zone, which enjoys limited protection). Much water flows off the Glen Rose and drains toward the Balcones. At the top of the Balcones, the Edwards (and the newer units forming the once sharp features above it) have worn completely down, exposing the Glen Rose. Numerous springs are found at the contact to the Edwards. These springs are fed by drainage from the hill country, from sinking streams running off the plateau, from a definable catchment that covers 4,400 square miles, an area termed the contributing zone. It contributes to the 220 billion gallons of recharge to the Edwards in an average year.

As surface streams, sheet runoff, and rain hit the Balcones, water finds a variety of more efficient flows paths than the ones provided by the flow net describing the surface. Water flows into vertical fractures, including both Balcones fault lines and the usual network of joints and fissures. Various epikarst features aid cumulatively to recharge the Edwards. Fractures in bedrock slowly solution out, forming "grikes", trapping soil which fuels runoff with carbon dioxide to yield stronger carbonic acid solution.

Water can permeate and pass through virtually any type of rock, but only in karst does (acidified) water entering cracks and pores solution out the rock, eventually forming conduits that rival surface streams.

The process begins slowly. When water travels through conduits smaller than the width of your finger the flow lines are straight, laminar, and the solutioning slow. Once conduits grow past this size, a threshold is reached in the ability of water molecules to flow straight. Frictional forces along the surface of the conduit wall and within the water itself work to retard flow lines — flow becomes turbulent. Water along the conduit wall, once saturated with calcium bicarbonate, is now churned in with the more solutionally aggressive water along the center. Rough contours along the conduit disrupt flow, yet increasing turbulence. During storm events the solutioning process receives a jolt. When a surface stream floods, water can spread out into the flood plain, but when caves flood, water injects into every possible crack in every direction until it can't take anymore — piston flow is instant. Greater flow velocities provide agitation to excite chemical reaction, rock is dissolutioned and transported out with the water. A huge slug of saturated water is pushed through, replaced by a new batch of unspent acidified groundwater. The intersection of joints and conduits provides a special opportunity for accelerated dissolution of rock. In a phenomenon known as corrosional mixing, water from two conduits and of different chemistries (more or less saturated with calcium bicarbonate) mixes to form a more aggressive carbonic acid solution.

Thin soil layers combined with the less permeable members at the surface imply relatively weak corrosive action, yielding subdued karst features. Solutionally formed sinks are ever so easy to miss on a ridgewalk, some measuring but centimeters across. Sinkhole collapses aren't common here. (Accustomed to the huge sinks typical in a fluvial karst system like TAG, one gains great respect for the ability of Texas cavers to sniff out significant caves, with such little to go on at the surface.) Where water can't find it's way down, it's often perched on an impermeable layer, forming isolated phreatic chambers along weak bedding planes. These caves become transitional as they're intersected by vadose conduits, like pits and canyons, creating a situation with a great name, water piracy. The history of karstification around the planet is replete with one case or another of water being pirated from one flow path by another, more efficient path.

Exposed sections of highly permeable and porous Edwards limestone provide the most significant karst features to aid in the pirating of surface water. The region which pirates virtually all surface water in times of low to moderate precipitation (and sucks down to capacity during heavy rains) is called the recharge zone, ranges between 1-5 miles wide, and is the most sensitive to Human modification and contamination. It figures that this region is highly desirable real estate. People pay a premium for rooms with a view. The high bluffs along the Balcones are open season to a host of politically powerful land developers.

But, were it not for the geology contained in the next 5-30 mile-wide strip of land, 180 miles long, to the south and southeast of the recharge zone, this entire area wouldn't have nearly as much reason to concern itself with growth issues. It's the artesian zone. Fly along any of the surface streams draining

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Edwards Aquifer, cont.

off the Edwards Plateau from the north, watch them disappear into dry creek beds. Cross the Balcones fault zone, and notice but a few perched streams at the surface. Water from the contributing zone feeds the recharge zone on the surface and at depth. Water flowing into and falling onto the recharge zone sinks into the Edwards. The combined recharge, again 220,000,000,000 gallons/year, feeds a long, vast, and deep cave system no caver, or cave diver, has ever had the fortune to explore. In a spongework karst system like this, placing a well isn't nearly so dicey; chances are you'll hit water, sometimes huge volumes. In 1990 a lucky catfish farm enterprise drilled down 1670 feet and had 36,000 gallons per minute spouting up 40 feet in the air, bringing with it large rocks and blind catfish.

The honeycombed Edwards limestone acts like a 400 to 900 foot thick (need a range of thickness) saturated sponge contained below and above by relatively impermeable formations. The aquifer leaks out near the top at several springs. From Bracketville, in the west, to Kyle, 180 miles away in the east, development in the artesian zone has grown up around artesian springs. In the eastern US where surface water supplies are plentiful, development takes place largely along rivers, lakes, streams, etc. Since most people in the semi-arid West get their water from the ground, it figures natural springs represented a godsend to the people who first settled around them. The earliest flint tools and pottery remains found at San Marcos Springs date back 15,000 years. Natives used the area extensively from 6000 B.C. to 500 A.D. Then came the Spanish in 1535, followed by German settlers, and others.

The tremendous volume of high quality Edwards Aquifer water has steadily drawn greater numbers to live there and depend on it - 1.5 million people today - and the number is rapidly climbing. As long as discharge doesn't surpass recharge over significant time scales, and as long as contamination is held in check, the Edwards represents a reliable supply. But, recharge is entirely dependent on rain, and human activity doesn't heed drought cycles. This is the question - What will people do to protect a goose that lays golden eggs?

The hydrology of the Edwards is a complicated affair, but very basically, drainage in the aquifer runs from west to east and water is being gradually pirated to the east. Springs and wells to the west are the first to be drawn down or even run dry. This would happen without the help of Man and is dependent on something beyond human control, precipitation. If the thousands of wells that pump 176 billion gallons a year had their valves shut today, some paleo springs to the west would surely start to flow again, but what water the Edwards couldn't hold in storage, it would discharge to downstream users. This fact underlies a *use it or loose it* philosophy. To the extent that pumping couldn't be tied to drying up a spring, it was long believed the Edwards represented a virtually limitless supply of sweet water. In times of heavy rains, it appears the springs are unaffected by pumping, but during a severe 7-year drought beginning in 1950, which runs in a roughly 25-year cycle, a clear connection between modern levels of pumping and spring flow was established.

More recent events turned up the heat. In hindsight, it seems inevitable that the water rights issue, which found no legal framework early in the century, would someday be revisited at a time when more was at stake for people with power. San Antonio is the greatest consumer of Edwards water. During times of low flow, discharge at San Pedro Springs and San Antonio springs in downtown San Antonio go dry, and municipal and agricultural pumping directly affects flow rates at Comal Springs, over 50 miles to the northeast. The downstream users of the Comal River (beginning at Comal Springs) are recreational and industrial, including large petroleum refineries and chemical plants. When Comal Springs dries up, business can't proceed as usual — the discharge of effluent from these plants requires set levels of stream flow to dilute the pollution. Since the petroleum companies had no legal basis to directly go after San Antonio for hogging water, they put their financial muscle power behind the Sierra Club's attorneys — who did have a case. The Sierra Club supported a project, Applewhite Reservoir, designed to get the city of San Antonio off the Edwards, assuring spring flow at Comal and San Marcos Springs, home to the Texas Blind Salamander, San Marcos Gambusia, Texas Wild Rice, and a handful of other endangered cave fauna. When the city voted the project down, and even prominent karst hydrologists agree it wasn't well conceived, the Sierra Club sued Texas Fish and Wildlife Commission for not doing their job, protection of endangered species.

Empowered by the dollars of a constituency whose interest is protecting its ability to pollute, the Sierra Club sued and won in a federal court to protect a handful of critters few even knew existed.
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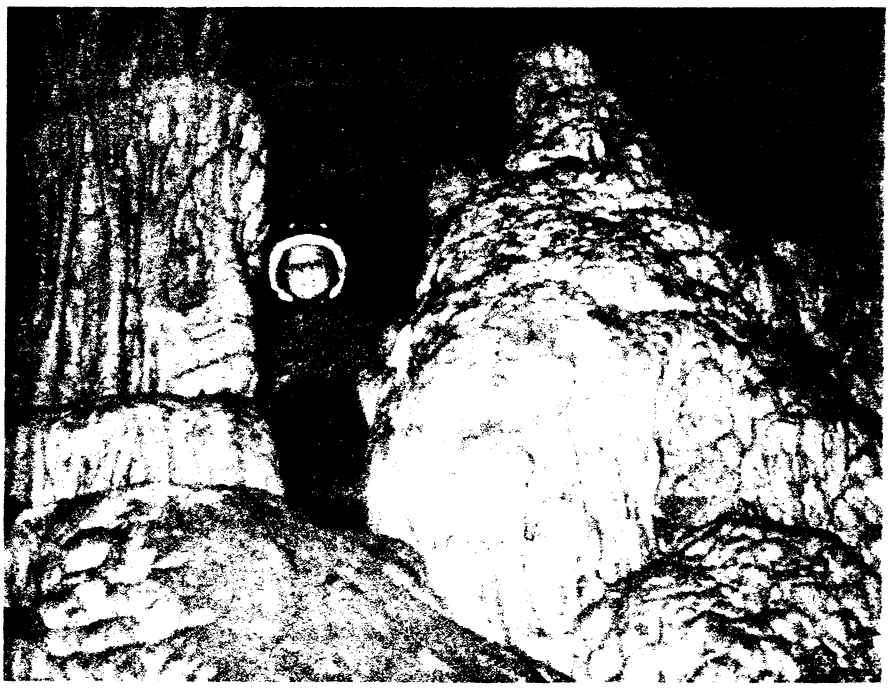
In 1993 the Edwards Aquifer Authority was formed, replacing the San Antonio Water District, and was given a federal mandate to limit discharge from the Edwards to 400,000 acre feet per year (130,340,400,000 gallons) by the year 2008, and guarantee spring flow by 2012. These numbers are intimidating to a community that regionally has pumped as much as 542,000 acre feet per year.

The value of water to the residents of the Edwards runs deep. It goes beyond basic life support into the realm of the symbolic. The springs at Comal, San Marcos, and Austin are major recreational areas. The river walk in downtown San Antonio attracts thousands of tourists. That people in a city the size of San Antonio can drink delicious tap water, water that comes directly from the caves below with minimal treatment, sets the city apart. While it is in the long term interest of the city to protect a vital asset and attraction, residents face, better yet, exert, much pressure to build, buy, and live on the recharge zone, to keep lawns green and cars washed, to maintain and expand on existing industry and to attract new industry — in sum, an agenda no different from any municipality. Given the nature of power politics, and in Texas that's largely petroleum, cattle, and land, it will be interesting to see how this community deals with the challenges ahead. Might a future headline read, "Texans Save Blind Salamander, and thus Themselves" or "Power Politics Wins Again — This Time Everyone and Everything Looses"?

True, we could wipe out well more species than a handful of sensitive and localized cave creatures and humans would hardly skip a beat. On the other hand, it's obvious the Edwards, any aquifer — or any defined natural resource for that matter — has its limits. Our consumptive habits and our expansion eventually exact a cost to our quality of life, and ultimately our survival. To the extent we come to understand the complex world outside our manmade doors (and sometimes underneath), our attempts to provide technological fixes to the problems we incur find hope. In the case of the Edwards, huge and expensive programs designed to enhance recharge must be considered with an open yet critical mind.

Whoever cared about a blind salamander? Who ever thought they'd listen to a caver? *The times, they are a changin'.*

(Thanks to Benji for providing this interesting account of the processes responsible for the creation of one of the most significant aquifers in the country. Though not entirely SERA related, Benji shared this account with us in return for our financial contribution to his documentary on the protection of our underground water resources. The Editor)



Young TAG caver, Will Masters on his first caving trip, in Sittons Cave, Dade County, GA. Will's Dad Art and other members of the Athens Speleological Society took Will to Sittons during the 1999 SERA Cave Carnival. He went to Cedar Ridge during the 2000 TAG Fall Cave-In and is looking forward to going again during this years Cave Carnival, the 50th annual, at Smokey Caldwells farm, near LaFayette, GA. The 2001 Cave Carnival is being hosted by the Chattanooga Grotto of the NSS.

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