

The
Month's

The Kansas City Area Grotto

Guano

Volume 17
Issue 7-8
August 2003

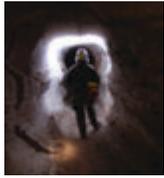
this month's focus

Caves of the Guadalupe Mountains

photo: massive stalagmites in Ogle Cave (photo by Richard Cindric)



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Trip reports tentatively scheduled for future issues of *The Month's Guano*

Richard Cindric reports from Rumbling Falls Cave in eastern Tennessee ... Jeff Page and Gary Johnson visit Powder Mill Creek Cave with Hal Baker on a geology trip ... Gary Johnson reports on the major springs of the Current River ... Sam Clippinger leads a scout trip to Little Scott Cave and Hamilton Cave ... Look for these trip reports and more in future issues of *The Month's Guano* ... And if you've been caving, please share your experiences by submitting a trip report.



Soda straws in Powder Mill Creek Cave (photo by Jeff Page).

Events

September 6, 2003

CRF Ozarks trip to Powder Mill Creek Cave for surveying (wetsuit required). Note: rain will cancel this trip. For more information, contact Doug Baker at doug-mel@mm2k.net.

September 11, 2003

Monthly KCAG meeting: 7:00 p.m. in the Magg Conference Center at the corner of Volker and Cherry (on the UMKC campus).

October 3-5, 2003

Fall 2003 MVOR, hosted by the MSM Spelunkers at the Pulaski County-Fort Leonard Wood Shriner's Club near Waynesville, MO. This is a large site that has accommodated as many as 1,300 people at previous events. There are hot showers available on site and plenty of well-maintained gravel roads. The fun starts on Friday, and you must go home on Sunday. Events include a bonfire, an MVOR business meeting, and a banquet. The banquet includes pig roast, grilled chicken, hot dogs, potato salad, cole slaw, baked beans, chips, and soda. Cave trips will be offered to Roubideux Cave (aka Indian, Kraft, Pike's Peak, etc.). Additional cave trips will be announced. Confirmed vendors includes Howie's Harnesses, Inner Mountain Outfitters, On Rope 1, Barnwood Bats, and Potter's Mind. MVOR items for sale include guidebooks, T-Shirts, bottomless souvenir cups (you must be 21 or over and have an ID to use the cups). For more information, see the MVOR website at www.mvor.org.

October 9, 2003

Monthly KCAG meeting: 7:00 p.m. in the Magg Conference Center at the corner of Volker and Cherry (on the UMKC campus).

The Month's Guano

August 2003, Vol. 17, Issue 7-8

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The Kansas City Area Grotto is affiliated with the National Speleological Society and the Missouri Speleological Survey. In addition, KCAG is a Founding Member of Missouri Caves & Karst Conservancy.

Meetings are held every second Wednesday at 7 p.m. at Magg Hall (behind Spencer Laboratories) on the UMKC campus, Volker Blvd. & Cherry, Kansas City, Missouri.

Annual Dues: \$15 for Full Members (three caving trips with KCAG, nomination, and vote of membership required.)

NCRC Callout number – Emergency use only: Central Region (502) 564-7815. This number may be used for cave rescue emergencies in the states of Illinois, Indiana, Iowa, Kentucky, Michigan, Missouri, Ohio and Wisconsin.

A Message *From* the President

The Grotto trip to New Mexico was a big treat for our club, which rarely ventures outside the Ozarks on its outings. We have Richard and Jerry Cindric to thank for getting it going early this year and making contact with the various agencies to assure a successful trip. It was a very unfortunate turn of events when, early in the trip, we heard that Kansas City had been hit by devastating tornado activity. Richard and Jerry soon learned that their father's home had been totally destroyed. Their dad was okay, but Richard and Jerry felt they needed to be with him and left after only two days of caving. We missed their company, their expertise, and their photographic abilities the remainder of the week. That fact, along with the certainty that there are many more caves to explore in the Guadalupe range, makes a return trip in the near future a worthy cause for KCAG.

Most of the caves in this region are on public land. They are under the control of the National Park Service, the U.S. Forest Service, and the Bureau of Land Management. Access to many caves is possible, at least on a seasonal basis, but there is advance work on cavers' part to be done. Some caves require a local guide, while most are self guided. The people in charge were responsive and pleasant to work with. Our guide to Ogle Cave, Tom Bemis, and our guide to Hell Below Cave, Phyllis Boneau, certainly enhanced our caving experience.

We also need to thank Mike McKinney for taking his RV and providing us a comfortable place to gather, eat, sleep, and visit after a hard day in the back country. A trip like this is an invaluable tool for bonding among a group. We do many things together, but after spending an entire week, as opposed to a weekend, we felt like we knew one another much better. Many came away with the feeling that we need more trips like this. To sum up, we saw a lot, learned a lot, and had a great time. I'd go again in a heartbeat. Enjoy the trip reports.

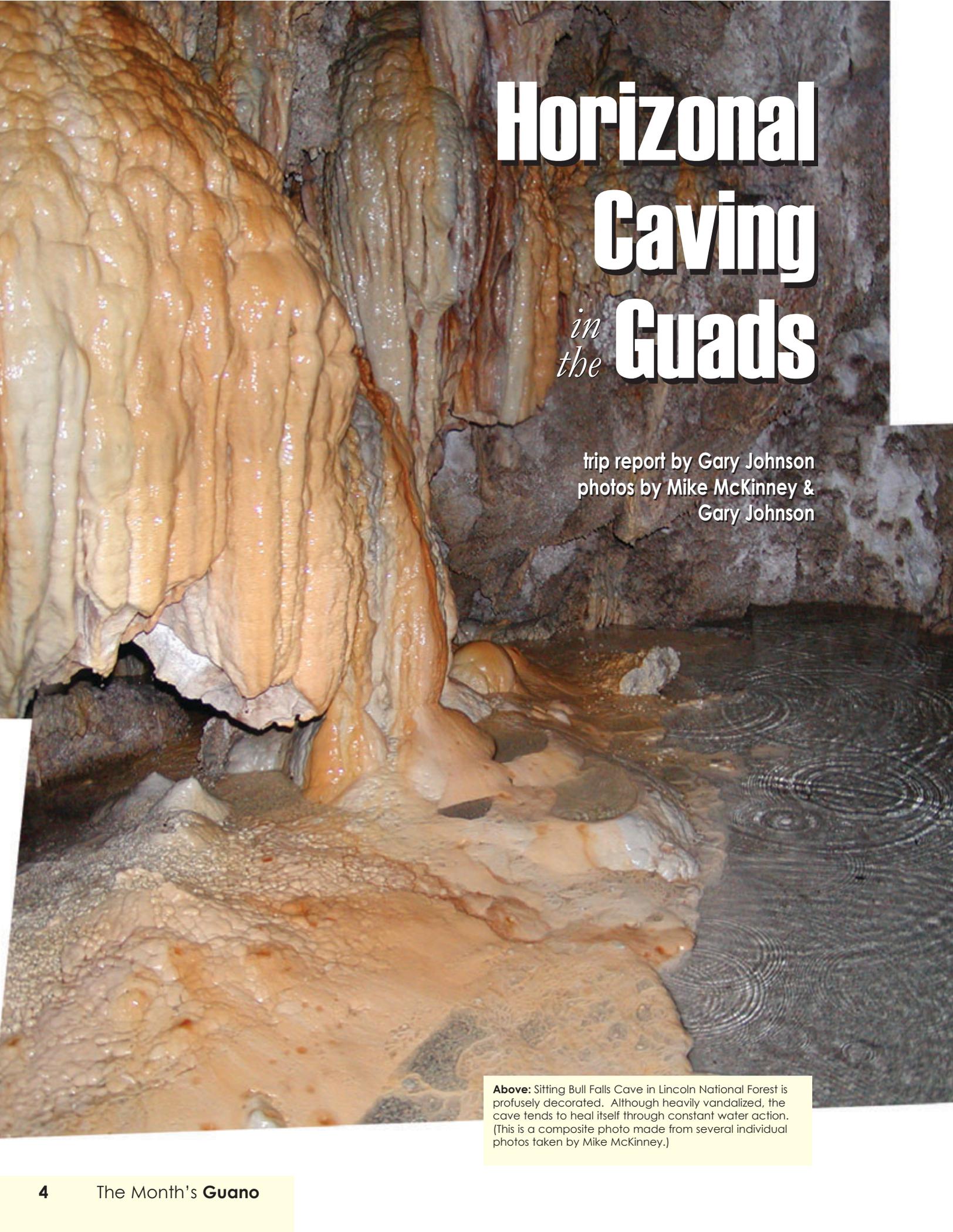
Cave softly and safely,

Jeff Page

KCAG President



Stalagmites in Carlsbad Caverns (photo by Mike McKinney).



Horizontal Caving *in the* Guads

trip report by Gary Johnson
photos by Mike McKinney &
Gary Johnson

Above: Sitting Bull Falls Cave in Lincoln National Forest is profusely decorated. Although heavily vandalized, the cave tends to heal itself through constant water action. (This is a composite photo made from several individual photos taken by Mike McKinney.)



The Guadalupe Mountains comprise one of the world's great caving regions. Cavers from around the globe make this their destination. Many millions of years ago, these mountains were part of an ocean reef. Thick deposits of limestone formed as the result of ocean sediments and reef building. Then the oceans receded, leaving the reef high and dry. Hydrogen sulfides associated with fields of oil and gas buried deep beneath the surface migrated upward and mixed with oxygen, forming a potent brew — sulfuric acid — that subsequently dissolved huge passages in the rock and left behind deposits of gypsum. The most famous caves in this area, Carlsbad Caverns and Lechuguilla, are the results of this dissolution. The Guadalupe Mountains contain many additional caves, and many of these caves are quite impressive, containing huge passageways and formations that sometimes equal (or even surpass) the monster-sized formations in Carlsbad.

When Richard and Jerry Cindric announced they would be leading a May 2003 caving trip to the Guadalupe Mountains, I knew I had to go. I started buying books and reading everything I could get my hands on about the Guadalupe Mountains, their geology, and the caves that they harbor. *Stories from Stone* (published by Carlsbad Caverns and Guadalupe Mountains Association) is essential reading for novice geologists. It's only 40 pages long. It covers most of the basics and describes several of the canyons. For readers desiring more in-depth information about the caves, the NSS published a first-rate collection of articles — “The Caves of the Guadalupe Mountains” — in conjunction with a research symposium. In addition, Carol A. Hill's *Geology of Carlsbad Cavern and Other Caves in the Guadalupe Mountains, New Mexico and Texas* provides a good dose of background information about the cave deposits and their mineralogy. (Hill is widely considered the leading expert on the geology of these caves.)

Above: The eastern escarpment of the Guadalupe Mountains (photo by Gary Johnson). **Below:** A massive fin of limestone named Elephant Rock lords over the mouth of Slaughter Canyon (photo by Gary Johnson).





Above: The Slaughter Canyon trail follows a dry stream bed (photo by Mike McKinney). **Below to upper right:** Yucca, cane cholla, and prickly pear cactus are plentiful in Slaughter Canyon (photos by Mike McKinney).

joined our group for Goat Cave, and Mike McKinney joined us for Parks Ranch Cave and Sitting Bull Falls Cave.

Goat Cave

Goat Cave is located up Slaughter Canyon. The entrance to this magnificent canyon is marked with a large limestone fin on the right bluff. This fin is named “The Elephant.” As you drive on Hwy. 62 along the eastern escarpment of the Guadalupe Mountains, it’s difficult to see Slaughter Canyon, but eventually a turnoff appears and this turnoff leads you past the Black River (which is typically dry), past Washington Ranch (headquarters for NCRC training, see Bill Gee’s article), and past Rattlesnake Springs (a nice little oasis of vegetation). For the final couple miles, the road becomes gravel, twisting around large patches of sotol and prickly pear. At first sight, the mouth of the canyon is awe inspiring. The bluffs rise sharply for nearly a thousand feet on both sides and “The Elephant” lords over it all. A very impressive vista.



Two trails leave from the Slaughter Canyon trailhead. On the left, a steep trail leads to Slaughter Canyon Cave, climbing 500 feet over the course of a half mile. Rangers from Carlsbad Caverns National Park conduct tours of this gated cave. The other trail follows the bottom of the canyon floor, leading past lechuguilla, sotol, and torrey yucca — and numerous large stream boulders. It heads up the canyon at a gentle grade. This is the way to Goat Cave.

Several parts of the trail follow a dry, rocky stream bed. Is the streambed ever wet? Probably only during especially heavy rain. I saw little evidence of recent water activity. Many rock markers and cairns are placed in the stream bed — including rows of rocks across the stream bed — and they’ve obviously been in place for a long time. Many different types of plants line the canyon: century plant, lechuguilla, yucca, prickly pear, sotol, and others. However, you won’t find any trees on the canyon floor (another sign of

Many of the caves in the Guadalupe Mountains require vertical experience, and as of yet, I have only practiced a little rappelling. And I’ve recently spent so much money on caving and camping gear that spending more money to outfit myself for vertical gear was out of the question. Luckily, however, Richard and Jerry had planned for a selection of horizontal caves, so regardless of my inexperience at vertical caving, I could still make the trip.



The following notes describe each of the caves visited by the horizontal caving group. The horizontal group consisted of Sam Clippinger, David Foran, Pam Rader, Pedgie Heinz, Kathy Sumner, and me. Vertical cavers Regan Youngman and Barry Godsey

little water activity). In contrast, in McKittrick Canyon in Guadalupe Mountains National Park, where a stream flows all year long, the canyon is filled with sugar maples, pines, and other trees.

As you hike up Slaughter Canyon, the first evidence of Goat Cave is its skylight, which appears as a small cave opening on a sheer bluff face. The skylight is visible from a quarter mile down the

canyon. At first, this seems to be the only entrance. But as you continue up the canyon, you can begin to see around the rock fin and then the real entrance appears — a huge gaping borehole at least 50 feet high and easily as much wide. The climb up to the



entrance from the creek bed is about 80 vertical feet according to the topo map, but it seemed almost twice that to me. The first portion of the climb heads up a steep stream bank. Loose rock and abundant prickly pear make this route somewhat treacherous. (Sam sat on a prickly pear on the way back down and ended up with several spines embedded in his posterior.)

The entrance to Goat Cave is large, but the inside passage is much larger. The ceiling reaches over 70 feet. The



skylight is near the entrance, just to the right. Light streams down through this opening and illuminates the far cave wall. The main passage contains several ups and downs, dictated by the amount of breakdown. When first entering the cave, we found a whitish-grey cave floor. The color was the result of the thick layer of goat dung — old and now

powdery. Every step brought a puff of dust. As the others stood at the cave entrance, I shouted a warning to them about the dust, telling them to tread lightly. They looked at me like I was crazy, but soon enough they discovered what I meant. Pedgie even wrapped a handkerchief around her nose and mouth. A smart move. Airborne dung can do nasty things to your lungs.

Sam and I tried the large side passage on the right. It extended for about 150 feet. The cave's largest formations are in this passage. Two stalagmites were fairly good size, over 10 feet tall. This area also had many old, dry rimstone

dams. All the formations in the cave were long dead. The water table had dropped considerably as geologic uplift pushed this old reef up several hundred feet, leaving the cave completely dry. Also on the right, a little further back in the cave, we found a small side alcove with a goat (or deer) skeleton. All that remained was the rib cage and leg bones. A somewhat eerie sight.

We continued all the way to the back of the cave, which is covered in guano. From the mound at the rear of the cave, we could still see light from the cave entrance — testament to the huge dimensions of the cave entrance and the main passageway. Just before reaching the back, I entered a small alcove on the left and discovered an impressive display of flowstone in a passage that extended for about 50 feet. But once again, the formations were long since dead.

The main feature of this cave is simply the scale of the main passage. This is one of the largest passages that I've



Above: Goat Cave's entrance is a huge borehole in a limestone bluff. (photo by Gary Johnson). **Upper left:** Northern mockingbird (photo by Mike McKinney). **Left:** Lechuguilla leaves contain dangerously sharp barbs (photo by Mike McKinney). **Below:** Large patches of prickly pear cactus call Slaughter Canyon home (photo by Mike McKinney).





Above: The horizontal group at the main entrance to Parks Ranch Cave. This photo is a composite of several photos taken by Mike McKinney.
Below: Sam Clippinger, Pam Rader, and David Foran inspect the cave entry log at Parks Ranch Cave (photo by Mike McKinney).



ever seen in a wild cave. Goat Cave, however, is not a particularly pretty cave. I don't think I'd recommend anyone make the hike up Slaughter Canyon just to see Goat Cave. Many people who visit this cave also visit Lake Cave, which is further up the canyon (up a near vertical trail). As its name indicates, Lake Cave includes a subterranean lake, a very rare feature in this area. Lake Cave is closed every summer for maternal colonies of bats. Unfortunately, we arrived in New Mexico only a few days after the visitation period had ended

Parks Ranch Cave

Parks Ranch is located on BLM land south of the Guadalupe Mountains, where the land is largely flat and marked by wide expanses of white rock. This rock is gypsum. The land is almost completely treeless, except for a few small scraggly trees that have taken root in the sink holes that dot the land. The sink holes at Parks Ranch have been fenced off (to keep cattle from stumbling down?). Three primitive campsites adjoined the sinks, complete with fire rings. Scrub and cactus dot the surrounding land. Large jack rabbits dart from one shadow to the next.

We first explored the sink hole to the south. It looked like a drainage ditch with erosion cutting through what little top soil there was and through the underlying rock. A path curled to the bottom of the sink and there we found a small

opening — no more than two feet in diameter. Sam crawled in first and his report didn't bode well: he described a crawl with no let up in sight. If this was what Parks Ranch Cave was going to be like, I began to doubt that I really wanted to visit it. I exited this sink and went to investigate the sink hole to the north. Here I found two passages stacked on top of each other. I investigated the bottom passage and found a very easy to negotiate five-foot-high tunnel. So I ran back to the south sink and told the others what I'd found. They readily exited the sink and followed me.

Kathy investigated the upper passage and reported there was plenty of head room. David Foran followed and found the cave register, labeled "main entrance." So we'd found the right passage. Now, I'm not even going to attempt to describe the passages in the order that we encountered them. The cave all sort of blends together in my mind. While areas of the cave are somewhat pretty, much of the cave looks identical. The walls have been scoured by floodwater. (You're not supposed to go anywhere near this cave if it's supposed to rain.) The cave passage headed toward Chosa Draw to the east. The cave walls were clearly carved by water action, the bends in the cave were serpentine, and the walls were like a mini canyon passage.

Soon into the cave, Sam warned us that bats ahead of us were putting up a fuss. They apparently didn't like our presence. We gave the bats a few minutes while deciding how to continue. The BLM cave expert had said we might encounter migratory bats, but he had said nothing about maternal colonies or endangered bats. We decided to stay low in the passage and pass beneath the bats, but when we continued forward, the bats were gone. Parks Ranch has over 20 different entrances, so the bats must have chosen to head for another section of the cave.

We encountered frequent cracks in the cave walls and these cracks were often filled with small gypsum crystals. The main passage never opened up into any rooms. The passage widened a little bit in a couple places,



but for the most part, the passage was remarkably consistent in appearance, almost as if it were a man-made tunnel. So it didn't take long before some of the team members started complaining of boredom. About a half-mile into the cave, we began to encounter pools of water. I was thankful for this variety and pushed further. Some of the others were ready to give up on the cave. But Kathy and I, and later Pam, pushed forward and I'm glad we did. We found some of the strangest



Above: Pam Rader in a typical passage of Parks Ranch Cave (photo by Mike McKinney). **Below left:** Unidentified plant near Parks Ranch Cave (photo by Mike McKinney).

rimstone dams that I've ever encountered. They looked like they were made up of scales, like you might find on huge lizard. As I gingerly walked down the passage, I felt like I was walking on the back of a dragon. If the floor had suddenly lurched forward, I wouldn't have been completely surprised. Other sections of the floor almost looked polished. Pam said these areas looked like mahogany. I suspect the dark color may have been caused by pollution. Every now and then we'd get a faint whiff of sulfur or a rotten egg. Pam hunted down Mike McKinney and told him what we'd found and urged him to take some pictures. He brought his camera, and then he and I followed the descending passage until the water started to get about knee high. After he took several photos, we headed out of the cave the same way that we came in.

Parks Ranch Cave is heavily used for cave rescue training. See Bill Gee's article about NCRC training for more about Parks Ranch Cave.

Sitting Bull Falls Cave

This cave was one of the real surprises of this trip. I'd heard the Sitting Bull Falls area was beautiful, but I didn't know what to expect of this cave. I'd heard it had been vandalized extensively, but I had also heard that constant water activity had



Above: Jeff Page stands beneath Sitting Bull Falls (photo by Mike McKinney). **Right:** A large column from Sitting Bull Falls Cave (photo by Mike McKinney). **Below right:** Cave pearls from Sitting Bull Falls Cave (photo by Mike McKinney).

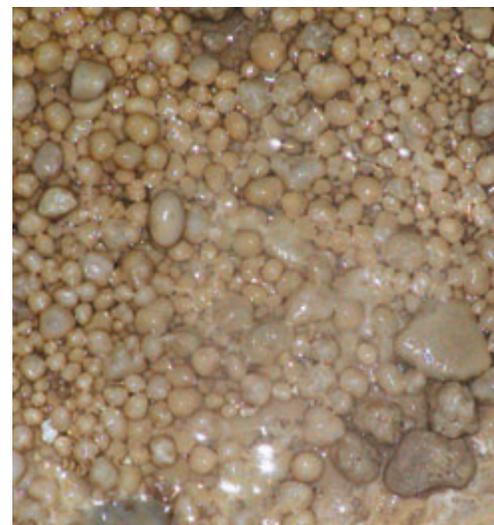
provided a relatively swift mechanism by which the cave healed itself. However, the proximity of the cave to the paved pathways at Sitting Bull Falls undoubtedly keeps the cave in constant peril. An onsite ranger likely helps reduce some of this threat. This entire area is absolutely gorgeous. A spring stream sends water over a bluff, spilling into the canyon below. The constant flow of water has left the canyon verdant. The surrounding hills and bluffs are a forbidding reddish-brown. But the canyon is filled with vegetation and pools, a surprising area in this desert-like locale.

Sam and I located the cave and led the way in. The entrance is somewhat dangerous, with a constant flow of water keeping the trail wet. But the rocks aren't particularly slippery when wet — unlike Missouri dolomite. In fact, the traction underneath the falls and up to the cave mouth was fairly good. Stairs had been carved into the slope. Maybe at one time, this was a commercial cave. Or maybe during an earlier time in the Lincoln National Forest's history, access was encouraged. Just inches inside the cave, visitors are in for some amazing sights, which include cave pearls, deep greenish pools, walls covered with flowstone, and stalactites. This is quite possibly the most profusely decorated cave — per square foot — that I've ever seen. Some vandalism



is fairly obvious: several stalagmites and stalactites are broken. However, not all of the broken formations may be the result of vandalism. Several decades ago, during an especially cold winter, the cave froze up with ice. The added weight caused the front half of the cave to collapse. The results are quite clear to anyone who takes a few seconds to inspect the bluff face: it's marked with remnants of flowstone, canopies, and stalactites. These exposed formations have undergone extensive weathering, but they are easily identifiable as flowstone. The shapes immediately give them away. Unlike the smooth bluff face that lines much of the canyon, the bluff face near the cave is marked by torturous contortions. These contortions are the remnants of the front half of the cave, along with the breakdown blocks that now lay among the pools and vegetation at the base of the bluff.

Moss covers the formations in the cave's mouth. Only inches inside the mouth, a pool of cave pearls emerges on the left. These are relatively small pearls, but they are so plentiful that they cover the floor like





Above: Sitting Bull Falls (photo by Mike McKinney). **Right:** Speleothems drape the walls above a deep, clear pool in Sitting Bull Falls Cave. This composite photo is made up of several photos taken by Mike McKinney. **Below:** Pam Rader stands at the entrance of Sitting Bull Falls Cave (photo by Mike McKinney).



sand. All the walls are covered with flowstone. On the right a deep pool extends back for at least 50 feet. It possibly goes under the cave wall to the west, maybe even leading to other sections of the cave. Everyone who entered this cave was quite impressed. This is arguably the prettiest area that we visited during the entire trip.

Cottonwood Cave

We arrived at our campsite in Lincoln National Forest late Tuesday afternoon, so we had to rush to find Cottonwood Cave. Unfortunately, however, I wasn't aware that during our drive to

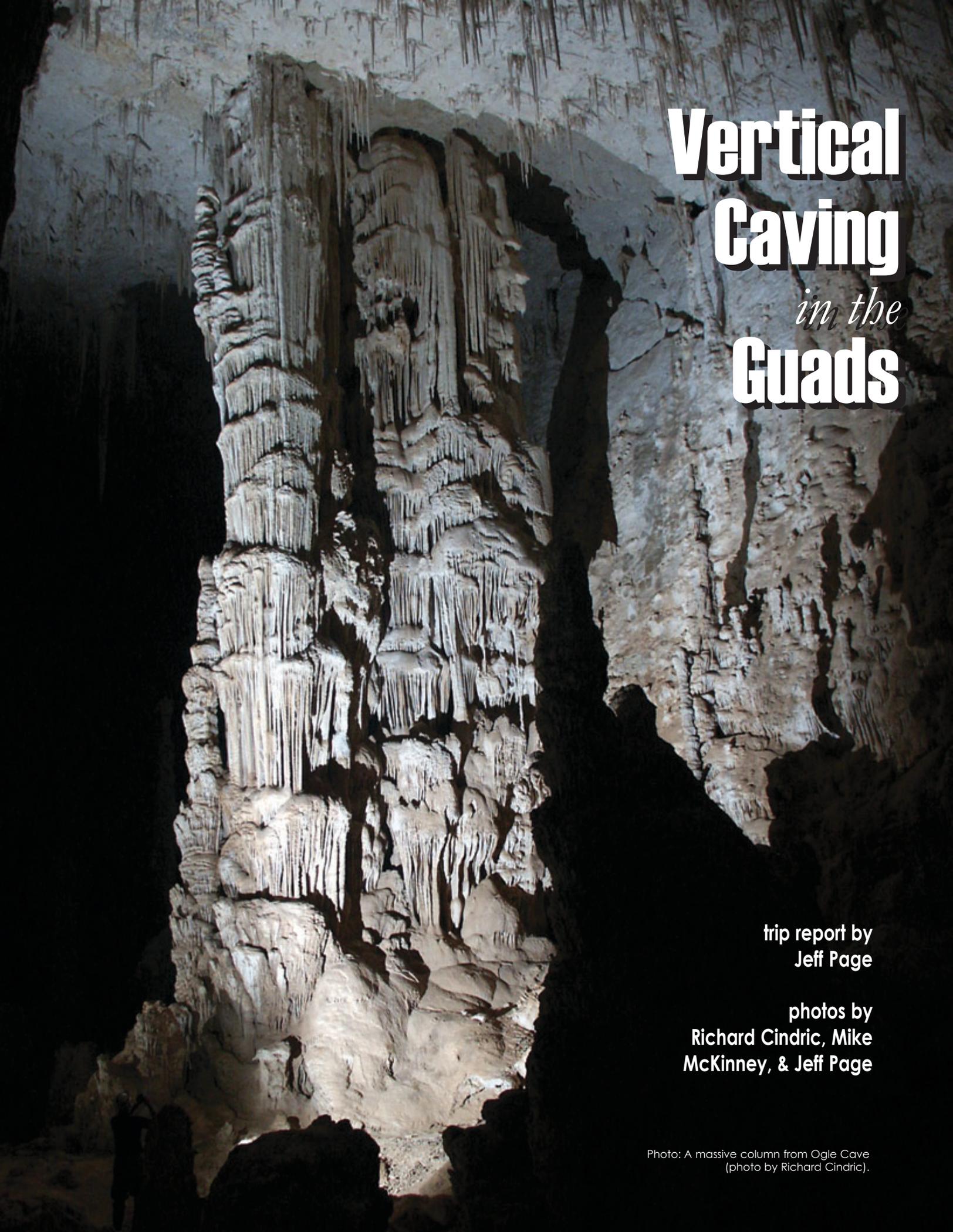


the campsite we had already passed the turnoff for Guadalupe Ridge. So when the horizontal cavers piled into my truck and we took off to look for the cave, I continued further down Dark Canyon — when I should have backtracked a quarter mile. As a result we wasted some precious time heading down the canyon road to the northeast. By the time we figured this out, we had already endured a half hour of bouncing down rocky roads. As a result, Kathy decided to drop out of the cave trip so that Sam (who was uncomfortable riding sideways in one of the small seats in my truck's extended cab) could move to the front seat. But once we finally found the road leading toward the ridge, I took that route and we began the rather steep climb.

We had originally arranged for Ransom Turner, the Guadalupe Ranger District's cave expert, to serve as our guide for Cottonwood Cave. A guide is required for access to the cave's lower passages. But only days before our departure on this trip, Mr. Turner told us he was required to attend a training session on the same day as our trip. So he had to cancel. That meant we would only be able to explore the cave's upper entry rooms.

By the time we parked and began the short trek to the cave, it was dark. The step log helped lead us down the trail and to the cave mouth (although we questioned the step counts). As we took the final turn and headed toward the cave mouth, we found a large black void to the left. We couldn't tell how far it dropped off. (On the following day when I returned to the ridge, I discovered one of the

CONTINUED ON PAGE 30 ►

A photograph of a massive, vertical column of stalactites in a cave. The column is composed of numerous smaller stalactites that have grown together over time, creating a textured, layered appearance. The cave walls are also covered in stalactites, and the lighting is dramatic, highlighting the column against a dark background.

Vertical Caving *in the* Guads

trip report by
Jeff Page

photos by
Richard Cindric, Mike
McKinney, & Jeff Page

Photo: A massive column from Ogle Cave
(photo by Richard Cindric).

Sunday, May 4

Carlsbad Caverns • Slaughter Canyon • Christmas Tree Cave

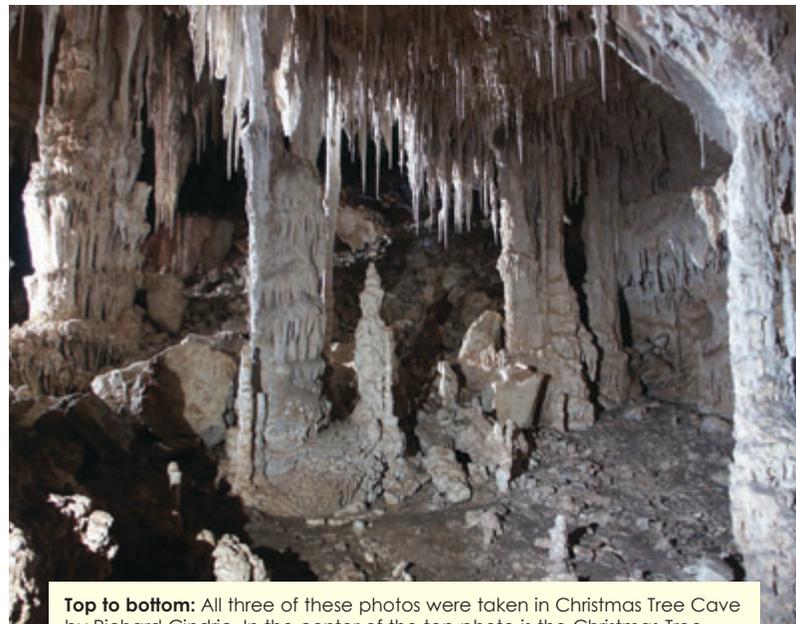
We started our day with a whirlwind tour of Carlsbad Caverns. It was a shame we didn't have time to spend the entire day in that magical place, but we had an ambitious schedule to pursue in the wild caves of New Mexico and were eager to get started. Both vertical and horizontal cave groups drove to the trail-head of Slaughter Canyon and hiked the dry streambed together until we reached the spot where the horizontal cave group would go on to Goat Cave and the vertical group would hike to Christmas Tree. Enroute, Mike suffered a foot injury in the stream bed but kept going in spite of the pain. Christmas Tree was not far from the trail split, but it seemed to be straight up. We were fortunate that it wasn't in the summer because the day was hot enough. This cave would establish the pattern for the rest of the week, where getting to the caves was more difficult than getting in and out of them.

We followed the step log for about 0.4 mile and over 400 feet of elevation gain to the entrance. Christmas Tree was the least difficult of the vertical caves we would attempt, so it was a good one to start with. We got in by rappelling about 20 feet from the entrance to a large, firm area. We explored on foot from then on. The cave was not large or difficult, but it was nicely decorated, with the Christmas Tree formation as the namesake and centerpiece of the cave. Mike, Richard, and I took several photos and this activity extended the time we spent in the cave. The trip would have been very short had it not been for that. We climbed out with only the aid of a hand ascender, which was a bit more difficult than I expected, but we managed just fine. The day was nearly over since we had added this trip to our Carlsbad Caverns day. We took the long hike back to the vehicles and headed back to camp

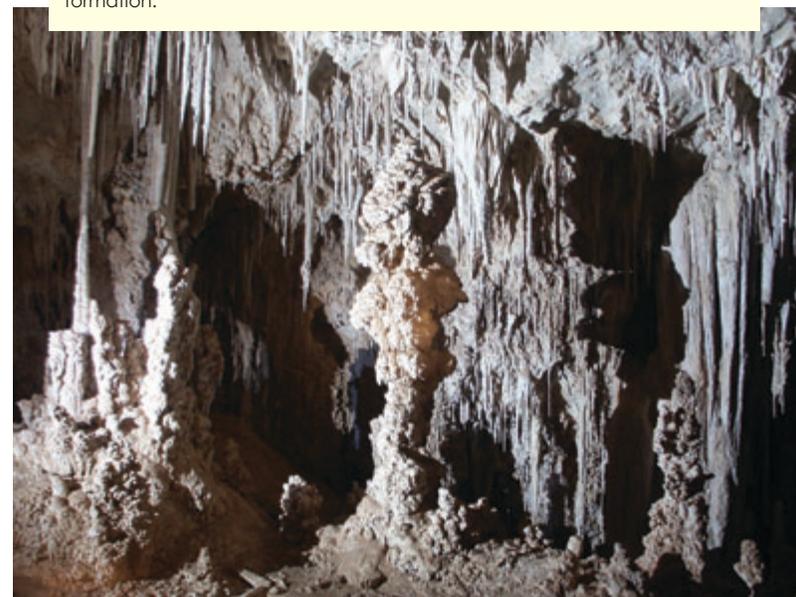
Monday, May 5

Ogle Cave

We had a logistics problem to deal with on Ogle Cave. We had seven vertical cavers and our permit would allow only six to enter Ogle. Mike's foot was still giving him trouble, so he volunteered to stay back. He opted to join the horizontal group's trip to Parks Ranch. This would have been a hard decision to make otherwise because Ogle was our cave trip with the



Top to bottom: All three of these photos were taken in Christmas Tree Cave by Richard Cindric. In the center of the top photo is the Christmas Tree formation.





highest expectations. We met Tom Bemis, NPS Cave Specialist, who would serve as our guide. The Park Service does not allow unguided tours in this cave.

The cave was located on the opposite side of Slaughter Canyon from Christmas Tree, but it was not quite as long of a hike to the trailhead. The climb up was a bit more difficult than the day before. We had to stop several times to catch our breath. We also carried more gear for the longer drop and longer cave trip. Tom rigged the rope to some heavy mining equipment located at the lip of the very large opening to the cave. The cave had been used for many years as a commercial guano mine and much of the old equipment was still to be found at or in the cave. The single 180 foot drop into Ogle was not technically difficult. About half the distance was down a talus slope from the top, then a short stop on a ledge, followed by a free drop to the bottom. The fall zone of the cave was quite large. There was a convenient cubby hole that would hold all climbers safely until the last was down.

After stashing the climbing gear, we followed Tom down a long, steep talus slope into the main body of the



Left: Barry Godsey rappels into Ogle Cave as Terry DeFraties, Jeff Page, and Regan Youngman wait their turns (photo by Mike McKinney).
Above: A huge column awaits at the base of the entrance pit in Ogle Cave (photo by Richard Cindric).

cave, probably a 50 foot or better elevation loss from the drop zone. A heavy steel cable from the mining operation lay to one side of the slope. We soon encountered the sights that made Ogle famous — a massive, basilica shaped chamber with formations that remind one of a giant redwood forest. The tallest known column (Bicentennial, 106') in the western hemisphere is found in Ogle.

In the middle of this chamber is a crude work bench displaying artifacts from the mining period. We signed the register on the table. We observed a wall of guano left over after the mine was abandoned. The guano, Tom reported, was over one million years old, having been deposited by a long extinct species of bat. We proceeded to the back of the chamber, which ended in a sheer wall with much graffiti scribbling on it. High above was another opening to a passage which was considered a separate and off-limits cave. Now, at two thousand feet into the cave, we could still see faint light from the entrance shaft. We made our way back to the shaft and climbed out. We



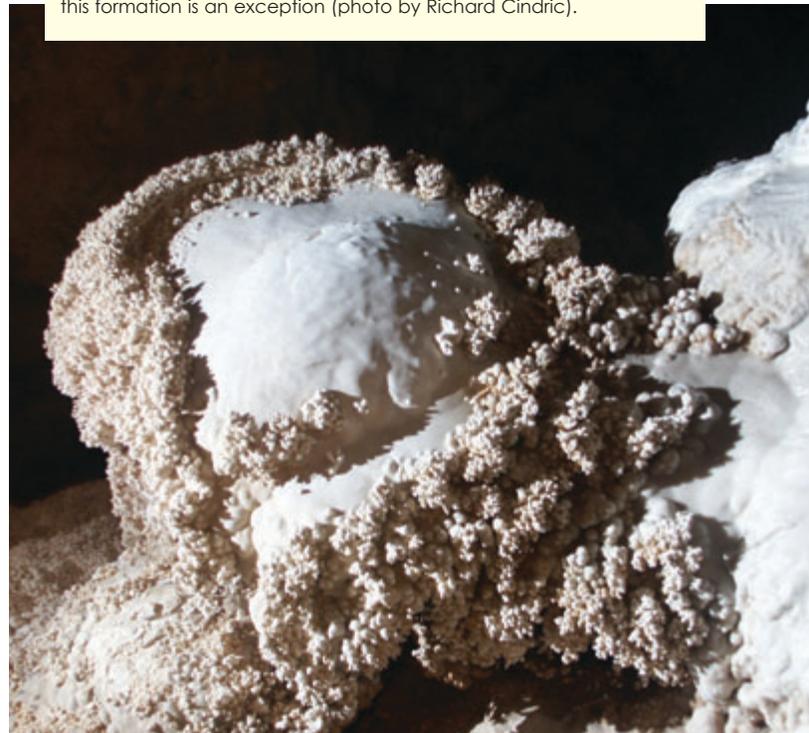
left with the notion that we wouldn't see a more magnificent cave the rest of the trip.

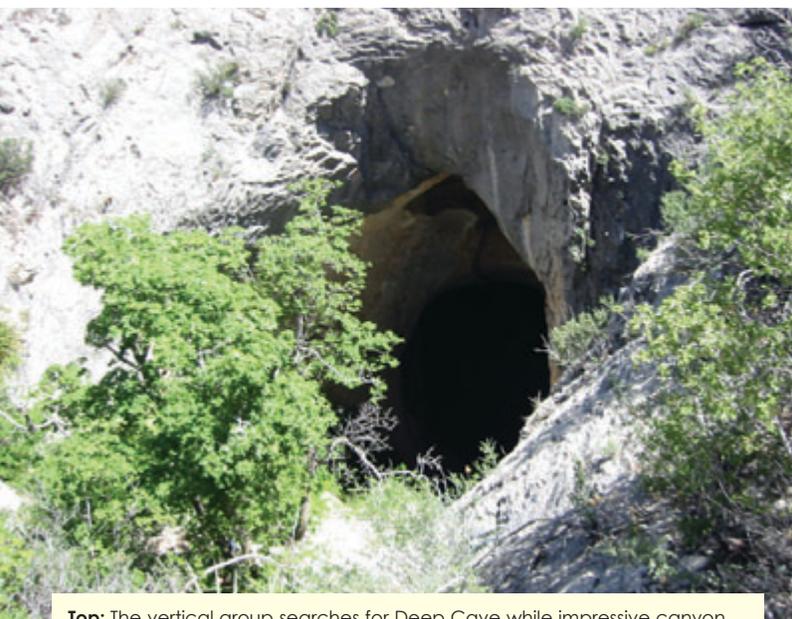
Tuesday, May 6

Travel day • RV breakdown • Hidden Cave

The next day, we traveled to Lincoln National Forest, where we had more caves on our schedule. This included a stopover at Sitting Bull Falls (see Gary's trip report) and a break down of the RV. The latter wasn't a big problem — just a failed bracket in the generator compartment that had the generator skidding on the pavement. We set about rigging a chain to hold the unit in place when a man and woman in a truck asked if we needed help. At first saying no thanks, Terry noticed an arc welder in the bed of the truck and quickly voiced his change of heart. The man was a pipeline welder who had all the equipment to lift the generator back into place and weld the bracket to the frame. A great stroke of luck. We were back on the road after about an hour. We got to our camp a bit too late in the day to go caving, but we did have Hidden Cave on our schedule for that day. We made a vain attempt to find it at

Above: Barry "Shooting Gallery Duck" Godsey poses in this profusely decorated section of Ogle Cave. Terry DeFraties looks on in the left foreground while Jerry Cindric supplies the remote flash (photo by Richard Cindric). **Below:** Most speleothems in Ogle Cave are dry, but this formation is an exception (photo by Richard Cindric).





Top: The vertical group searches for Deep Cave while impressive canyon walls loom in the distance. This composite photo was formed from multiple photos taken by Mike McKinney. **Above:** The entrance to Deep Cave (photo by Jeff Page). **Left:** Mike McKinney's RV broke down on the road to Lincoln National Forest, but a pipeline worker came to the rescue (photos by Jeff Page).

sundown, then abandoned the effort. We knew we had an aggressive schedule and some caves might need to be left for another trip.

Wednesday, May 7

Deep Cave

The story of our venture to Deep Cave is more about the trip to the cave than the exploration of it. From our camp, it was a 3.5 mile trip to Texas Camp on a rough gravel road. Texas Camp is the last spot where a normal vehicle could hope to go. We had one Jeep and two mountain bikes to transport five people and gear 3.2 miles to the trailhead. Regan and Barry had brought the bikes. There was enough room in the Jeep for two people and the gear. That left me the option of riding on top of the gear or walking. Trying the

former option for only a couple of bone jarring minutes, I decided walking was not all that bad. Regan let me ride her bike part of the way while she hiked or hitched a ride in the Jeep (she fit better on top of the gear than I did). Once we made it to the trailhead on top of Wild Cow Mesa, we had another mile to hike to Deep Cave. This was to be a 300 foot drop and the closest length of rope we had was 440. Needless to say, it was a slow hike carrying the rope and gear. It was also a hot, dry day on a windy mesa. After about an hour of hiking along the ridge, we began to doubt our directions to the cave. We saw an opening across the canyon that we thought might be the cave, but we never seemed to get much closer to it. We began to worry about our supply of water, which by now seemed inadequate.

We decided to turn back and retrace our steps back to the Jeep. Shortly thereafter, we looked down the slope we were on and saw the entrance to Deep Cave. We had overshot it on the trip out. We went down to

the entrance and talked about what we should do. We reached the consensus that there wasn't enough daylight left for all of us to get in and out of the cave before dark, and we would probably run dangerously short of water. Mike, Regan and I chose not to go into the cave. Terry and Barry would do the two drops to the bottom, then return to the surface.

There were very few options for rigging points for the 150 foot slope to get into the cave. A small tree would have to do. Terry satisfied himself that the tree would hold sufficiently.



Regan worked on her suntan, while Mike and I stayed out of the sun. Terry and Barry got into the cave and found a large rock to rig the long rope for the three hundred foot drop to the bottom. Keeping their promise not to explore the cave further, they returned to the surface in good time, and after de-rigging, we were on our way back to camp. Our instincts served us well that day. By the time we got back to the Jeep, we were nearly out of water. We vowed to return again to make a proper trip into Deep Cave.

Thursday, May 8

Hell Below Cave • Wrap-up

As with Ogle Cave, a guide was required for Hell Below Cave. Local caver Phyllis Boneau met us at our campground early in the morning as we were recovering from the prior day's trip. She affirmed that today would not require any grueling activities. Hell Below was a short trip from Texas Camp, maybe 0.7 mile. Since Phyllis had a truck and we had Mike's Jeep, we got there in relative comfort. The cave was only 0.2 mile from the trailhead. The entrance was a small, gated opening in the side of the hill. This cave would prove to be

the most technically challenging of all the caves we visited this week. How the cave got its name is not entirely clear, but there is no doubt it just goes down and down. The entire cave was a crevice system conveniently filled with rubble and dirt in places to make foot travel possible. The first drop, not far from the entrance, was only about fifteen feet. It took quite some time to rig. Then we were on to the second point, a fifty foot

rebelay from steel bolts permanently imbedded in the wall. That also took a great deal of time to rig. After all that was negotiated, we found ourselves in a wonderland of color and formations. Phyllis told us to rappel slowly in order to enjoy the beauty of this room. The bottom of the second drop placed us on top of a slope which divided the cave into two opposing passages.

Phyllis informed us that she was involved in restoration work in the cave. The trails were all marked with flagging tape.

Taking the first slope (east?*), we climbed down to a point where we needed to rig a 20 foot hand line to get over one slick area. The bottom of this held some fine formations including coral. We stopped for lunch here before exploring the western half of the passage. Before going too far, we had to rig our last drop of about 30 feet. This path led down to a fine gypsum gallery which would be as far as we would go in the cave that day.

This cave proved to be special in different ways than Ogle. The challenge of the rope work and the diversity of Hell Below make it hard to decide which cave was more enjoyable. This was last vertical cave we would visit during the trip. We returned to Carlsbad Caverns and viewed the bats flying out for their nightly foraging. There were some other caves on BLM land available for Friday, but the descriptions were uninspiring and we were a very tired bunch by that time. Everyone felt the week had been a big success and it was time to head for home. ■

*I have no map of the cave and the directions are guess work based on my topo map and my admittedly faulty memory



Above: Guide Phyllis Boneau on rope in Hell Below Cave (photo by Mike McKinney). **Left:** Jeff Page on rope in Hell Below Cave (photo by Mike McKinney). **Below:** Delicate cave coral formations in Hell Below Cave (photo by Mike McKinney).

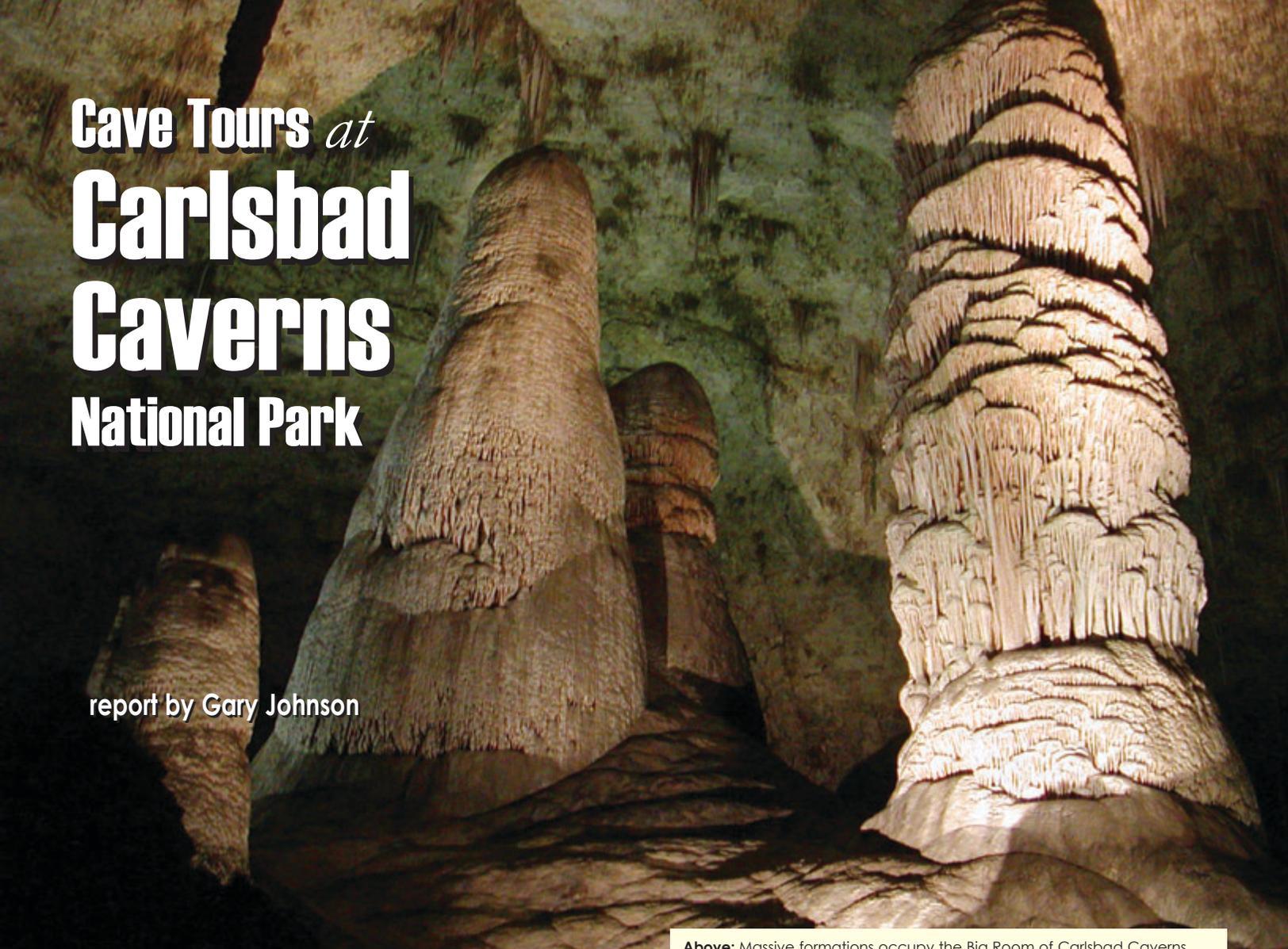


Cave Tours *at* Carlsbad Caverns National Park

report by Gary Johnson

On the morning after the grotto members arrived in New Mexico, we fittingly started our week of caving by visiting Carlsbad Caverns and taking the self-guided tours of the Natural Entrance and the Big Room. The Natural Entrance trail starts at the Bat Amphitheater, where the cave mouth is over 150 feet across. Cave swallows dart across the entrance. The smell of guano is pungent. A concrete path winds through a series of switchbacks that descend to the floor of the main room, a descent of nearly 300 feet. The Bat Cave passage extends to the east for over 1,600 feet, but no one is allowed to visit this section of the cave. It's where the vast majority of the Carlsbad bats hang out.

The main corridor path leads to the west. As first, it's relatively level, but after you pass Devil's Spring and Taffy Hill, the path heads



Above: Massive formations occupy the Big Room of Carlsbad Caverns (photo by Mike McKinney).

for more switchbacks as it descends to Devil's Den and the Iceberg Rock. This is all huge passageway that averages around 200 feet wide, with a ceiling height that varies from a modest 50 feet to a humbling 250 feet. Iceberg Rock is a huge breakdown block over 150 feet long that nearly blocks the passage. Most of the formations in the main corridor are dry. This is the oldest, highest section of the cave (next to the Bat Cave), so little ground water now percolates through the walls or ceiling of the main corridor. (The visitor center's parking lot has made this situation worse, so plans are now being considered to move the parking lot to a remote location.) The Natural Entrance trail ends at the Lunch Room, which (as billboards along New Mexico highways are quick to point out) is located over 700 feet below the surface. From this point, you can either take an elevator back to the surface or head for the Big Room trail. Here is where you'll find most of the cave's largest formations, such as the Giant Dome, a massive column. It's the tallest formation in the Big Room at 60 feet. In addition to large formations, the Big Room also features ominous drop offs, such as the Bottomless Pit and the Jumping Off Place. The latter looks over the Lower Cave, which passes nearly 100 feet below.

Later in the week, several of us took the King's Palace Tour,

which visits some highly decorated rooms. These rooms were once part of the self-guided tour, but they had experienced considerable damage from thoughtless visitors and now this section of the cave is only available by way of a ranger-guided tour. Sam, Dave, Pam, and I also took the Lower Cave tour. It involves negotiating three ladders and a relatively short section by rope. You get to see large beds of cave pearls and profuse displays of soda straws. On my final day at Carlsbad Caverns National Park, I also took the Left Hand Tunnel Tour. This ranger-guided tour equips each visitor with a candle lantern. So this tour has a bit of the old-time flavor. As described by the tour guide, the Left Hand Tunnel was used as a garage for many years. Rock from the elevator shafts was stored here. In addition, dirt from the tunnel has been removed for use in leveling the cave's paved trails. The first half of the Left Hand Tunnel is rather bland. It has been impacted significantly by contact with man. But near the end, the formations become more numerous and resemble the whitish grey formations of the Lower Cave. Far down the Left Hand Tunnel waits the Lake of the Clouds, the lowest point in the Caverns, and home to a small colony of fringed myotis bats. But this area is well beyond the tour's terminus.

In addition to the cave tours, we also attended an evening bat flight. The bats swarmed out of the cave in a counter clockwise swirl before soaring off to the southwest and eventually disappearing from vision. According to the tour guide for Left Hand Tunnel, bats also exit from the old Bat Cave shaft, which can be seen from the Nature Trail (a short distance from the amphitheater). This is why the Nature Trail is closed in the evenings.

I had originally reserved a spot in the Hall of the White Giant tour, which is supposed to be a real wild cave trip, with headlamps, knee pads, gloves, etc. It reportedly requires extensive crawling and squeezing through tight passages. But I decided it was best to get a head start back to Kansas City on Saturday, instead of trying to do the entire drive in one day on Sunday. So I reluctantly cancelled my reservation for Hall of the White Giant. The park also offers wild cave trips to Spider Cave, which is nearby but not connected to Carlsbad Caverns. The Spider Cave tour was completely booked for our trip dates, so be sure to make your reservations early. Both Spider Cave and Hall of the White Giant tours fill up quickly.

In addition to the caves at Carlsbad Caverns, the NPS also offers guided tours of Slaughter Canyon Cave. This cave is twenty miles southwest of Carlsbad Caverns in a magnificent canyon with a large limestone fin on the right bluff, named "The Elephant." I visited this cave on the morning of my first full day in the Carlsbad area, before the rest of the caving team arrived, so this was my first taste of Carlsbad. A steep trail leads to Slaughter Canyon Cave, climbing 500 feet over the course of a half mile. Not a bad morning hike, but I wouldn't want to do that climb in the afternoon in the summer. Thankfully a few shadows wait at the entrance, enough to shield most of the tour participants while the rest of the party is still making the climb up the hill. A group of Girl Scouts started immediately after me, so I had an extra incentive to keep going up the trail at a good pace — lest I get passed. That would that have been embarrassing to say the least. The Slaughter Canyon Cave tours accommodate up to 25 people. You have to show up with a D cell flashlight. I brought along my headlamp also. But the passages in Slaughter Canyon Cave were so large that the headlamp didn't really illuminate much. A D cell flashlight really is a necessity, preferably a big three-D-cell Maglite or a



Above: The Bat Amphitheater at Carlsbad Caverns (photo by Richard Cindric). **Below:** Switchbacks lead the way inside Carlsbad Caverns. Cave swallows have built nests in the numerous holes that pockmark the sides of the entrance shaft (photo by David Foran).



comparable model. A ranger named Steff served as our guide, and a young man named Domingo served as her backup. Steff had been leading tours at Carlsbad for over 16 years and was well familiar with the cave and its history. Slaughter Canyon Cave contains some huge rooms and formations. Most notable is the Christmas Tree and the Clansman. Both of these formations started as brownish flowstone, but then the primary deposit material suddenly shifted to white and the formations were subsequently covered with a thick coating of white deposits. This gave the Clansman a somewhat sinister appearance, as if it were a shrouded wraith of gargantuan size. The coating had just the opposite effect on the Christmas Tree. The deposits glittered like tinsel in the beams of the tour group's flashlights. This is one of the prettiest formations that I've ever seen. For a short time, guano was mined in this cave, until the mining company discovered that ground water had leached most of the beneficial minerals and nutrients out of the guano, leaving low grade fertilizer that wasn't much good for anything. So the mining operation went broke. Along the guano pit, Steff pointed out the tiny bones of innumerable bats, which looked like cherry stems embedded in the guano. She also led us to the cave "museum" — a federally protected trash heap of historic importance that included beer cans, inner tube parts, and flash bulbs. The trip through Slaughter Canyon Cave heads down well-trod paths, but it's still a fascinating journey and definitely worthwhile for anyone interested in caves. ■

H I K I N G T H E G U A D S

report by Gary Johnson



Above: Sam Clippinger enjoys the view from Marcus Overlook. The Brokeoff Mountains loom in the distance (photo by Gary Johnson). **Below:** Prickly pear cactus and an unidentified vine-like plant with orange flowers (both photos by Mike McKinney).

Many people come to Carlsbad Caverns National Park just to take the cave tours. However, this area also features several excellent wilderness trails in Carlsbad Caverns National Park, Lincoln National Forest, and Guadalupe Mountains National Park. I arrived a day before the rest of the caving team, and on that day, I headed for McKittrick Canyon in Guadalupe Mountains National Park. I hiked the first 3.5 miles of this trail (7 miles round trip). This is a marvelous canyon. A spring runs through the bottom of the canyon and that keeps the immediate area lush. The trail weaves past maple trees, Texas madrone trees (with their unusually smooth, reddish trunks), ponderosa pine, alligator juniper, sotol, torrey yucca, and many other unique plants. In the fall, the canyon turns red from the numerous maple trees and attracts large numbers of visitors. The lower trail ends at “the grotto” — an exposed section of cave, profusely decorated but now exposed to the elements and quickly deteriorating.



Later in the week, I returned to Guadalupe Mountains

National Park with Kathy, Dave, and Sam, and we hiked Dog Canyon on the west side of the park. This section of the park is fairly remote. It’s only accessible by way of Hwy. 137, which passes through Lincoln National Forest to the north and then dead ends in Dog Canyon. We took the Marcus Overlook trail, which climbs 1,000 feet in three miles and leads to a saddle that looks out over the Brokeoff Mountains to the west. A constant 60 mph wind met us at this saddle. The wind helped keep the



temperature tolerable. Along the trail we noted many large century plants that were preparing to bloom. They sent up wide fleshy stalks. Dog Canyon is not lush like McKittrick Canyon. It is a highland desert environment. (It got its name from the prairie dogs that once numbered in the millions, but they have long since been exterminated.) Before heading up to Marcus Overlook, we visited a short nature trail that describes the native plants. This was an excellent introduction to the area’s vegetation and I strongly recommend it.

In addition to the two aforementioned trails, Dave, Pam, and I also hiked a small portion of the Guadalupe Ridge Trail in Lincoln National Forest. After visiting Black Cave, Dave inspected my topo map of the region and noticed a short section of trail, about a half mile long, leading to “Guadalupe Mine.” So we parked down the hill from the ranger lookout station and headed down the Ridge Trail. The trail followed a wide, rocky path, which could likely be followed by a 4x4 vehicle. Along the way we noted numerous examples of pisolites (ancient cave pearls cemented together). The trail led down to a saddle, with a short spur heading north. We followed the spur and it led directly to the mine. Light fencing discouraged entry into the mine pits. We could see the



remnants of a ladder system in the larger of the two pits. We discovered plentiful samples of a rust-colored rock lying in fragments around the pit entrances. We conjectured that the rock was likely iron ore (possibly hematite).

I also hiked about half of the Old Guano Trail, which leads directly from the campground at Whites City to the Bat Amphitheater at Carlsbad Caverns. The route leads over a very rocky path. For the most part, you’re walking directly on bedrock. There is little if any soil. The path is

surrounded by sotol, lechuguilla, torrey yucca, and prickly pear. The trail provides some impressive vistas to the south across the gypsum flats. Along this trail near the Bat Amphitheater, you’ll find the old Bat Cave entrance pit, which is surrounded by a high wire fence. The pit is relatively small, only about 15 feet across. But it is still open to the cave below, and bats reportedly use the entrance for their nighttime flights (in much smaller



numbers than those that use the cave’s natural entrance). The smell of guano surrounds the area. To the south of the trail’s terminus at the Bat Amphitheater, you can continue with the Nature Trail, which is a short but informative journey through the desert vegetation. Many signs along the way identify the plant species. This trail serves as a good, quick primer

on the native vegetation.

Many additional hiking trails await ambitious visitors, including Rattlesnake Canyon Trail and Yucca Canyon Trail in Carlsbad Caverns NP, Last Chance Canyon Trail in Lincoln National Forest, and numerous trails that start at the Pine Springs Trailhead in Guadalupe Mountains National Park. To hike all the trails would take several weeks. ■

Above: Several examples of desert life (all four photos by Mike McKinney). **Below:** This view from the Guadalupe Ridge Trail shows the steep walls of Black River Canyon in the distance. A forest fire scarred the valley in the foreground (photo by Gary Johnson).





Above: Level 3 students practice pickoffs during NCRC training sessions at Washington Ranch. **Below right:** Bill Gee's campsite at Washington Ranch (photos by Bill Gee).

2003 NCRC Cave Rescue Operations and Management Seminar at Washington Ranch in Carlsbad Caverns National Park

report and photos by Bill Gee

Day One, Thursday • June 19

On the road

I packed the camper Wednesday night and was on the road at 5:20 a.m. Thursday morning. 709 miles later, around 6 p.m., I camped at Lubbock RV Resort. This is not a good park. The park hosts a lot of seasonals, and it is very close to the highway and the airport. I was rained on heavily while going around Amarillo. There was more rain overnight, maybe 1/4 inch.

Day Two, Friday • June 20

Arrival • Washington Ranch • Guadalupe Mountains National Park • Guadalupe Peak Trail

I left Lubbock at 7 a.m. Central time and arrived at the NCRC site shortly after 10am Mountain time. The trip was about 210 miles. I walked around a bit, found a place to park the camper, and set up camp. Most of the instructors were already there.

The NCRC site was at Washington Ranch, a private facility next to Rattlesnake Springs. It has a swimming pond (which was empty), housing for up to 120 persons dormitory-style, kitchen and meeting facilities, and an obstacle course. Unlike the general area, there are a lot of trees at Washington Ranch, including many cottonwoods. I parked between two very tall trees, one on the east side and one on the west. I had the camper in shade while the solar panel was in sun most of the day.

After lunch I drove to Guadalupe Mountains National Park and hiked up the Guadalupe Peak trail. This trail is 4.5 miles long

and gains 3,000 feet of elevation. I left the trailhead at 12:40 pm. The trip to the top took about two and a half hours. I spent half an hour taking pictures, reading register entries, and writing my own entry. The trip down took about two hours. I drove back to the NCRC site, had dinner, worked on this report, and took a shower.

The Guadalupe Peak hike is very strenuous. The trail is well marked but runs in limestone almost all the way. It's like walking on cave blasting rubble. The trail is so rough the park will not let horses on it. Most animals could not negotiate this trail. At times the cliff face on one side is 200 feet straight up and the other side — 4 feet away — drops 200 feet straight down.

About half the elevation gain is in the first mile.

Once you get to the top, the view is stupendous. Guadalupe Peak is the highest patch of dirt for hundreds of miles. I saw three thunderstorms in the plains and could hear thunder from two of them. A plane flew by ... below me!



The last time I hiked up Guadalupe Peak I had a blowout on my right boot while coming back down. That time I took longer coming down than going up. No such adventures this time. I did get a good bruise under the ball of my left big toe and a big blister on my right big toe. Fortunately, neither bothered me during the week. The bruise went away in a couple of days and the blister was not a problem in my caving boots. I also had some sore muscles.

Day Three, Saturday • June 21

Washington Ranch • Vertical Gear

In the morning, I registered into the seminar, then took my camera and walked around the site taking pictures of most everything. Camp Washington Ranch is an oasis in the middle of the desert. Besides the swimming pond, there are two other ponds on the grounds. The upper pond is fed from Rattlesnake Springs. There is a small canal running from the upper pond to the lower pond over a distance of two or three hundred feet. The lower pond can be drained into the dry bed of the Black River.

The first meal served on the meal plan was lunch. Everyone met at the dining hall where we were served in a lunch line. The dining hall has a kitchen on one end, seating area in the middle, and offices and restrooms on the other end. There are doors exiting on both sides. It has room for perhaps 150 people if they are very good friends. There was no air conditioning, only a couple of swamp coolers that could not keep up. As a classroom, it left a lot to be desired. The main problem was acoustics. The echo was very bad and there was no sound system.

After lunch the program began. Dave Ashburn got up and started things off. Everyone went around introducing themselves and saying where they are from. There were people from all over the United States, plus a couple of guys from Puerto Rico, one from Canada, and one from New Zealand!. Both coasts were represented. One girl was from New York City, not exactly a hotbed of caving.

The first program was on Leadership/Followership. This emphasized the elements of being a good leader and a good member of a team. Everyone got to participate in a decision. Once a decision was made, everyone either got on board or got out regardless of whether they agreed.

Late afternoon brought the first-day check-in requirements. For Level 1 students, that basically means gear check followed by a demonstration of basic rope skills. I had no problem going through equipment check. Then I asked if my vertical rig was suitable. The requirement is for two gripping attachments above the waist. My rope walker rig has a QAS tied to the seat harness. The other gripping attachment is the knee ascender which is tethered to the seat harness. The instructor doing the checking said there was no problem: this was an acceptable rig.

Once I got out to the rope course (a quarter mile hike!), the instructor there turned me away, saying the tether was NOT suffi-



Top: The trail to the top of Guadalupe Peak crosses this bridge. The cliff drops 150 feet below this bridge (photo by Bill Gee). **Above:** The view from the top of Guadalupe Peak, looking southeast over the top of El Capitan. There were several thunderstorms out in the plains, which is why the view looks hazy (photo by Bill Gee).

cient. I was peeved, to say the least. I walked back to the equipment check-in area and got hold of “Lurch”, one of the instructors. He got John PUNCHES and Dave Ashburn to take a look. All three confirmed that in a double-bungee system like mine, the tethered knee ascender counts as the second gripping point. We all walked back out to the rope course. They made sure all the instructors out there knew what was going on.

Had the decision been otherwise, there were several vendors there selling gear. I could easily have got a croll and tied it into my seat harness. The thing that got me upset was having instructors give different interpretations of the requirement.

Once this bit of excitement was over, the actual rope check-in was anticlimactic. The course materials said I needed to be able to climb 20 meters up, changover to rappel, and come back down. The actual climb was only 5 meters or so, just enough to see that I knew how to make the rig work on a rope. Changeover and rappel down was easy.

I was amazed at how many of the people there did not have all the right gear. Several light systems were turned away, as were some home-made climbing rigs. A couple of people were using an all-Prussik system for climbing. That was OK as long as they had a handled QAS. Some people made quick trips to Wal-mart to get boots with blonde soles. Besides the business with my climbing rig, the only thing I came close to having trouble with was my helmet. I've washed it often enough that the Snell certification sticker inside it is gone. Fortunately there was another person there with the exact same helmet, which had its Snell sticker intact.

Day Four, Sunday • June 22

Ferno litters and SKEDs • Knots

This was the first full day of training sessions. In the morning we had a couple of lectures in the dining hall. The first was on the cave environment and was mostly aimed at the agency people. Some of them have never been in a cave before. I was surprised to find out that at least one of the guys from the Carlsbad Fire Department had never been in a cave, not even Carlsbad Caverns!

The course was completely sold out. We had just over 50 Level 1 students, about 10 Level 2 students, about 20 in Level 3 and about 20 going for Instructor Qualification. Add about 25 instructors and we had a full crew.

Ken Laidlaw brought out his collection of climbing gear and went through it. He showed many interesting and odd devices that are not used anymore. He explained the difference between a Gibbs ascender and a Rescuscender. Lots of stuff was passed around.

After Ken's talk we were shown how to package a patient in both a Ferno litter and a SKED. I had seen this before at the weekend orientation last September. Still, it was good to refresh the skill.

After lunch we divided the Level 1 students into four groups. I was in group 3 with 12 other people. Each group took a Ferno and a SKED and practiced packaging a patient. After we had done that several times, it was time for the obstacle course.

The instructors had laid out two obstacle courses on the grounds of the Ranch. Groups 1 and 2 went to one course while groups 3 and 4 went to the other. Our course was laid out in a section of river bed. It had some ups and downs, rock crevices to get through, green cave formations to avoid and even a mudhole! They hooked up a sprinkler over one low point and let it run for a few hours. It made a nice mud hole 6 inches deep and 8 or 10 feet long.

We started at opposite ends of the course. My group started with a SKED. We packaged up a patient, chose a team leader, and started off. We met the other team at the mudhole. Everyone was glad to be there since the sprinklers were still going. It cooled us down nicely! There was a lot of confusion over how to let the two groups pass each other.



Above: A small part of the obstacle and rope course at Washington Ranch (photo by Bill Gee).

After we got through, we chose another patient, another team leader, and switched to the Ferno. The Ferno is much easier to handle and more comfortable for the patient, but does not fit through some tight spots as well. We had an easier time of passing the other group. After debriefing and discussing, we cleaned gear and went to dinner.

Besides the checks done on the first day, everyone had a checkoff sheet of skills to demonstrate. Evenings were given over to doing the checkoffs. An area was set up outside the main building. Most of the instructors gathered to help. As each student felt ready to get a checkoff, they approached an instructor. Each instructor was working with multiple students at a time, usually 3 to 5. When they were happy with how you did a skill, the instructor would initial the item on the sheet. There were about 40 items on the Level 1 checkoff sheet.

I spent Sunday evening learning knots and getting them checked off. I knew about half the knots when I arrived but had to learn the others on the fly. Sunday was also the day for litter and packaging checkoffs. For this, two students worked at a team to package a third. This was a full package with all the vapor barriers and wool blankets, so the victim got very hot. I did this portion of the checkoff with Martin Roest. Martin is from New Zealand and is working for the summer at Jewel Cave. Martin and I did everything right and got our checkoff.



Above: A patient packaged in the SKED (photo by Bill Gee).

Day Five, Monday • June 23

Pickoff practice • Classes

The day began with some schedule changes. Due to the heat, the schedule was changed to allow most outdoor activities to take place in the morning or the evening. Another announcement was made. On Wednesday evening, Tom Beamis and Stan Allison, both of whom work at Carlsbad Caverns, would take the entire group on a nighttime lights-out tour of the Big Room and the King's Palace. Woo Hoo! The only rule was that each person going had to have all checkoffs done.

The first session of the day was a demonstration of the two-rope, conscious-patient pickoff. Two instructors demonstrated while we all watched. It only took them a few minutes. The essential element of this pickoff is two tethers. One is longer than the other. The rescuer climbs up to the patient and slightly above. On the way past, the rescuer ties the longer tether between their seat harness and the patient's seat harness. They also unhook the foot ascender if the patient is in a rope walker system.

After climbing slightly above the patient, the rescuer changes over to rappel and locks off their rack. This drops them a little bit, close enough to tie in with the short tether, which must be hooked directly to the eye of the rescuer's rack. The next thing is to disconnect the patient from their rope. The main thing is to provide a foot loop the patient can step up in, slacking their ascenders for disconnection. The patient then sits down and is now

hanging from the short tether and the rescuer's rappel rack. The rescuer unlocks the rack and controls the descent of both people.

The pickoff demo was done about about 9 a.m. We all went back to the dining hall and spent the entire day in classes. Topics were medical considerations, hypothermia, anchors and haul systems, and lower. The last two are used to raise or lower a patient in a litter using a rope. In several of these lectures, we broke into our small groups and practiced around the dining hall. We all set up tensioned back ties, several kinds of anchors, and several mechanical advantage systems.

After dinner, I went over to the rope course and did my pickoff. I really wish I could have had more practice on this. As it was, I was being tested on the very first time I did it. Another student and I paired off. I was the first victim and Peter rescued me. Peter did a pretty good job considering he was using a Frog system and had never seen a rope walker before. The sequence of things to detach is different. Peter also managed to climb too high above me and had trouble changing over to rappel.

I did not have any tethers, so during a break I had made a pair of loops in webbing. I used a double Frost knot (which I learned the day before!) with unequal size loops. The idea was to attach the middle loop to my seat harness and then use the other two loops as the tethers. The instructor doing our checkoff approved the system before I started.

Climbing up, getting the first tether on my patient, and changing to rappel was easy. Then I realized something ... I had tied the Frost knot loops to my seat harness carabiner instead of to my rack. In order to use my nice invention, I would have to open the carabiner on which I was hanging. That was not going to happen, so I improvised.

As it happened, Peter was still wearing all his gear including both of his tethers. I grabbed his short tether and used it. That brought up the second problem. Rope walker systems don't have a foot loop for the patient to use! Again I borrowed Peter's gear. The only real problem we had was getting his QAS at the right height. It had to be low enough so he could sit on the short tether without loading it but high enough so he could step up and let me unfasten his seat harness croll. We got the job done with a minimum of fuss.

It was dark by this time, so I took a shower and went to bed. I was less than half done with my checkoffs but figured I had seen Carlsbad before and could finish Wednesday while everyone else was gone.

Day Six, Tuesday • June 24

Raising and lowering practice • Parks Ranch Cave

We spent the entire day on outdoors activities and cave activities. In the morning, we all went to the cliffs to practice rigging, anchors, raising, and lowering. The cliffs are along Dark Canyon Road about 6 miles west of US 62/180, about 30 minutes drive from the camp. Each team chose a location along the cliff. We rigged for a mainline, a belay line, and edge tenders. We lowered and raised several people who were just wearing their seat



Left: Rescue training takes the participants to Park Ranch Cave. About five feet below the main passage entrance is another entrance that goes into the sewer passage (photo by Bill Gee).

from 3 to 5 feet wide.. The floor was dry and dusty with many loose rocks laying around. The walls were mostly scalloped gypsum with no formations. The scallops here were fairly large, 3 or 4 inches across. We took the left fork.

There were several sections where we had to do a lap pass. That gets a lot of people behind the litter where they cannot do much good. The biggest problem we had in this tight passage was getting people from behind the litter to in front of it. It's doubly hard trying to crawl over the patient without stepping on him.

We went several hundred feet, and then encountered the other team coming at us with a Ferno. The passage was up to about 4 feet high though still very narrow. After considerable discussion, we decided to change to a new patient and team leader and swap litters with the other team. Each team would continue in the direction they were headed. This took close to an hour to decide and do.

Very quickly after changing to the Ferno, the passage opened up to standing height. This was not an improvement! It was keyhole shaped, about a foot wide for the bottom three feet and then opening up to about three feet wide. We wound up having to carry the litter at shoulder height for the entire passage. After a few hard turns, we improvised a variation on the turtle carry. Instead of the turtles being under the litter on hands and knees, they were standing up with the litter on their shoulders. We got two people under the litter like this. Two more people attended the head and foot, guiding the litter and supporting a little of the weight.

We had one very difficult corner where we had to set the litter down on one end, then sort of rock it around the corner. There was room for only two or three people to get hands on the litter, so they were working very hard. Once past this corner the rest was fairly easy. We had only one more adventure. We found a puddle of water about ankle deep which apparently contained cow manure. It was ... ripe! It stank very badly and could not be avoided. You had to walk in it to get by. Yech!

We came out of the cave about 4 hours after going in. The big lesson to me was that too many people make things go slower. A smaller team could have carried the litter much faster through the cave.

After dinner I went to do as many checkoffs as I could get done. Things were hopping in the checkoff area, but much to my surprise I got everything checked off. It was late, almost 10:30, when I finished. The thing that helped me most, I think, was standing around watching others do their checkoffs. By listening to how they answered the questions, watching how they did the litter rigging and listening to the instructors give corrections, I learned as much as I had in the lectures.

Since I had finished all my checkoffs, I decided to sign up for the Carlsbad trip.

harnesses. Then we put a patient in the Ferno and lowered them along with a litter attendant. At the bottom, the patient switched out, and we raised them back up. It was only a 30 foot drop, but it gave us much good experience. Even with a 3:1 haul system and four beefy guys on the haul line, it is hard work pulling up the cliff!

We drove back to the camp for sack lunches, and then went to a cave to practice litter handling in a real environment. Groups 3 and 4 went to Parks Ranch Cave. This cave is just across the highway from the camp on BLM land, about a 15 minute drive. Most of that time is spent bouncing over a really rough road. I was very glad for my high-clearance truck. One of our other team members had taken himself and four others to the cliffs. However, his truck would not start when we headed for the cave, so they quick piled into my truck. I had a heck of a load with seven people and gear.

Park Ranch Cave system is a bunch of drains in a maze spread out over several hundred acres. There are about four miles of mapped passage on many levels. The cave is prone to flash flooding. There are no less than 28 known entrances. Two of the entrances are fenced off. Most of the cave is fairly small passage and is lined with gypsum. Since it floods often and forcefully, there are no formations. The area is apparently a popular party spot.

As with the obstacle course, we started with the SKED. We packaged up a patient and moved into an entrance. The entrance we used goes down a rocky channel in the rock at a pretty steep angle, then down a five-foot chimney into a belly crawl. We managed to get the SKED into the crawl, but after about 10 feet, the shoulders both hung up. We could not move either forward or backward. Our patient was getting a little nervous! We finally decided to untie him and slide him forward in the passage. That took a little time but was no great trouble. The guys behind then brought the SKED through the tight spot. We repackaged our patient and carried on.

The entrance bellycrawl is only about 15 feet long, then the cave forks and opens up to a hands and knees crawlway ranging

Day Seven, Wednesday • June 25

Slaughter Canyon • Helen Cave • Carlsbad Caverns

In the morning we split up into our four subgroups. Each group went to a cave to practice making a haul system and pulling a patient up. Two of the teams went to Parks Ranch. The other two had a considerable hike in Slaughter Canyon. We were one of the teams that got to hike in. From the Slaughter Canyon trailhead, we went up the riverbed about $\frac{3}{4}$ of a mile, then started up the hill. We wound up taking a wrong turn, so it was almost an hour before we got to Helen Cave. The other team hiked up the Slaughter Canyon Cave trail to a cave on the opposite side of the canyon from us.

Helen Cave is about a 30 or 40 foot pit with some passage at the bottom. We began by looking around for anchors. Eventually we found several suitable rocks. It took us another hour to get a haul line, belay line, change of direction line, and an edge tender line rigged up. The change of direction had to happen twice. Fortunately, we had brought plenty of rope.

An instructor and two students rappelled into the cave. The rest of us lowered the Ferno. One of the students became the patient and the other was the litter attendant. They rigged in and we pulled them up. It took 15 minutes to get them over the edge because of the way the ropes were rigged. The whole exercise took longer than we thought it would. It was 11:30 when we finished. Rather than run back, we all decided to bounce the pit just to say we had some cave time.

The entrance pit goes down about 30 feet to a landing area, then goes down another 20 or so on a slope. The pit and the area around the slope is profusely decorated with flowstone and drapery formations. They are completely dead and covered in dust. It's all the color of the desert outside. At the bottom the passage goes right about 25 feet to an area with some nice stalactites. The left passage goes through a gate and on to the rest of the cave. We did not go through the gate even though it was unlocked.

After everyone was down, we immediately started climbing out. The first people out derigged all the lines except the climbing line. Everyone was back out by about 12:30. We hiked back to the cars in about 30 minutes. It was much easier because we knew where we were going and it was downhill. Even so, walking on the old stream bed is hard work. Those rocks are all rounded off and slip very easily under your feet. You can't get a good push off them.

We arrived back at the ranch an hour late, right at 2pm. The other two teams were also late, so they cut some of the lectures a little short. We only missed about 10 minutes of class time. The afternoon classes were on hazardous atmospheres, water problems, Incident Command System, and psychological considerations. "Water Problems" means cave flooding, not personal hydration.

In spite of the late start, the lectures were over early. I had enough time before dinner to get a shower. Dinner was early since we had to leave for the Carlsbad Caverns Visitor Center no later than about 6:50 p.m.. I drove up and took another Level 1 student with me.

At the visitor center, we all kind of milled around for a while. Half the students had brought their helmets so they would not have to unmount their cave lights. I carried my cave light hanging over one



Above: The entrance to Helen Cave (photo by Bill Gee).

shoulder, with an extra light in my pack. We probably made many of the bat flight visitors curious about what we were doing.

Since it was only 30 minutes until sunset, we all decided to watch the first part of the bat flight. Tom Beamis led us around to a side room at the back of the visitor center where everyone with helmets dropped them off. We did not want too many questions from the other visitors.

We all tramped over and watched the beginning of the bat flight. About 8:15 p.m., just as it was really getting going, we headed back to the visitor center. Tom ran one of the elevators to get us all down to the Carlsbad Caverns lunchroom. It took five trips.

The lunchroom is a different place when the lights aren't turned on. The lights were out because there is an endangered species of bat that roosts in the Left-Hand Tunnel, near Lake of the Clouds. When they leave, they fly right through the lunchroom. Artificial lights disturb their flight as does too much noise.

Eventually everyone was down and we set off for a tour of the Big Room. After the first few hundred feet, Tom started turning on lights. We were far enough from the lunch room that the bats would not be bothered. The group stayed on tourist trails. We managed to spread out far enough that the people in back were behind the turned-on lights. They wound up seeing the whole cave by helmet light.

After going around the Big Room with a rest stop at The Top of The Cross, we went on the King's Palace tour. I have never seen this part of the cave before. It is somewhat downhill, perhaps 40 feet of switchbacks. Though smaller than the Big Room, it is just as decorated. There are a couple of places where it is obvious a tunnel has been blasted through a rock. Again, Tom turned on lights as we went, but the group spread out enough that some used their helmet lights for the whole tour.

We gathered back at the elevators and rode up. I spent 15 minutes looking at the stars while waiting for my passenger. If you've never seen stars in the desert, you need to. We got back to the ranch just a few minutes before midnight.



Above: Going down the cliff with an empty Ferno. Later we had to haul this back up with a patient and an attendant (photo by Bill Gee).

Day Eight, Thursday • June 26

Rescue practice

The morning was the last of the lectures. The topics were cave search techniques and public relations. After the lectures we talked about the walkthrough rules, then took a written test. The test was 100 questions, all multiple choice.

In the afternoon, we split all students into three groups. Each group included Level 1, 2, and 3 students. Each group went to a different cave to practice rescues from beginning to end. My group went south on highway 62/180 to a place about a mile north of the Texas border near the top of an escarpment. The cave was 30 feet from the highway, which made communication interesting.

I never did learn the name of this cave. It was not really a cave in the proper sense. It was a narrow crack 40 or 50 feet deep where the top was plugged by rock fall. We never really got into a dark zone.

We ran through four mock rescues. Each took a little less than an hour. In each case, a Level 3 student was chosen as Incident Commander. Then a reporting party (one of the instructors) came up and made a report. The IC then directed the process of getting hasty teams into the cave, getting a comm team going, and basically directing the rescue.

For the first scenario, I was on the first hasty team into the cave. We found our patient about 150 feet back in the cave. She was hypothermic. The person in front of me was a paramedic and took care of the medical diagnosis. Since our patient was still conscious and able to respond, we decided to “feed and beat” her. Basically we put some warm water and high calorie food in her, and then got her to her feet to start walking. I had to guide every step for the first 20 or 30 feet. Then others took over and she started walking better on her own.

The second scenario involved a tib/fib fracture. I was on one of the evac teams that helped carry the stretcher out of the cave. This one was made a little more interesting because the patient had a weapon in his pack and was combative and obnoxious.

For the third scenario we had one person in the cave whose light had gone out. That one was easy. The complicating factor was the

second patient. She was not in the main cave at all. We had to run a surface search. She was eventually found in a small hole above the main cave with a fractured femur. I was on the extraction team for that one.

The last scenario was played to make us really think. The reporting party was not concerned about his two friends, but he said he had not seen them for several hours. We did a cave search and found nothing. A surface search found nothing but footprints leading down the road. Eventually the two lost souls just wandered into the staging area and asked what was going on. They had been snoozing in their car the whole time.

After debriefing and discussing, we all headed back for dinner. After dinner everyone met in the dining hall to talk about the rules and procedures for the day-long mock rescue planned for Friday. The Level 2 and 3 students went and packed four equipment caches in preparation for the mock.

Day Nine, Friday • June 27

Mock rescue • Return to Parks Ranch Cave • Extraction

We had breakfast extra early, at 5:30 am. Right after breakfast we were randomly assigned into four groups. A drawing was held to determine the order in which the groups would respond to the event. I wound up on the first group.

The reporting party came in and gave his report in front of the whole group. He and four other friends had been drinking the night before. He heard them say something about going caving, then fell asleep. His friends were not back yet. He did not know what cave they went to but could lead us to the one they often used.

As it turns out, the cave he led us to was Parks Ranch. We all arrived on the scene about 45 minutes after the initial report came in. We were very fortunate to have in our group Ken Halvey, who owns an old ambulance. He has fixed up the ambulance as a command post for search and rescue. His ambulance was immediately taken for the command post.

One of the Level 3 students took over as Incident Commander. It was not really a choice of the group. He just did it. No one had any problem with that as DJ turned out to be very good. When other teams started to arrive, no one contested him for the position. DJ remained for the entire incident. Another Level 3 student became the Operations guy. Two of the Level 1 students became the scribe and general handy person. After a while, they were so integrated into the command team that they almost did not get any cave time at all.

I was appointed as Entrance Control. I got my chair, some paper, and an FRS radio and opened the log at 7:33 a.m. I was at an entrance we eventually called “Central”. This area actually contains 7 or 8 entrances, all of them surrounded by a big fence with a single gate. That gate was a natural checkpoint. I was only 75 feet from the command post and could easily hear everything that was going on.

The first order of business was to send out surface search teams. We also verified that the vehicles in the area belonged to the lost persons. The surface search teams quickly found several clues, including a trail of beer bottles leading to a hole about 1,000 feet out to the west. Another surface team went about 2,000 feet east and found a patient at the bottom of a hole.

The patient in the west hole had tried rappelling down but had slipped and broke his tibia and wrist. This patient required a vertical extraction. Rigging and extraction teams were sent out with gear. It took them two hours, but they eventually got the hole rigged and the patient out. The teams involved in this rescue reported they had way too much discussion. The leader of the rigging team finally had to get firm. They also rigged the main anchor five times for no good reason. The instructors commented on this in the review. Every one of the anchors was a good one. They had no need to do it five times.

The patient in the east hole had a badly sprained ankle. After splinting he was able to get out with assistance. By 10:00 a.m., we had two of our four patients out of the cave.

Then the surprises hit. Surface teams turned up another entrance that looked like it had been used. Search teams were sent in and discovered a patient who was hypothermic. Evac teams were sent with a litter. When this patient arrived on the surface, we discovered he was not one of the four missing people! Two people were still missing.

Hasty search teams were sent into several entrances of the cave. At this point some of the teams discovered why Park Ranch is never visited twice. Remember that smelly stinky puddle we found on Tuesday? The whole lower section of the cave, hundreds of feet of passage, has 1 to 2 feet of that same kind of smelly sewage, stagnant water in it. And in some places the passage is only a foot high with 6 inches of water in it. Double yech!

Fortunately for me, I remained on Entrance Control until after lunch. I did not have to go in any of the seriously smelly stuff. Several cavers were completely soaked in it. One team even pulled comm wire through the muck.

The search teams found another patient without too much trouble. His lights had all failed but he was otherwise unhurt. He was loaned a spare light and walked out. The last patient was the hard one.

By 2:00 p.m., Incident Command thought the whole cave had been searched. The searches had taken place over most of the morning, so they were worried that we might have a moving party on our hands. IC decided to inundate the cave with search teams. No less than 10 three-person teams were sent out to redo the search. The team I was on was told to poke into every nook and cranny in the first 150 feet of the 8 entrances in the central fence. We did that, getting in to the muck about knee deep in the process. Just when our time was up and we were going back to report, we heard the patient had been found.

He was in a side-side passage about 1,000 feet in. He was comatose. We reported back to staging. As it turns out, there was a comm node near the patient, so IC ordered two of the search teams to merge and become an evac team.

The diagnosis was diabetic coma. That meant hurry was the order of the day. To move things along, IC set up 6 more evac teams and staged them along the exit route. I was on the second to last evac team. Each team carried as fast as they could, burning out just about when they reached the next team and handed off the patient. In this manner, it took about an hour to get the patient out of the cave.

After doing roll call and checking entrance logs, we packed everything up and headed back to the ranch. We got back about 5:00 p.m. Several dozen people went into Carlsbad for a real Mexican dinner, leaving the dining hall somewhat quieter for the rest of us.

Day Ten, Saturday • June 28

Review • Amarillo • Finding a campground

The last day was only a half day. In the morning we all met and reviewed the mock rescue. All the team leads, the Incident Commander, and many others gave brief talks about what they did and learned. Dave Ashburn gave a high-level time line of events.

The reason we had not found the last patient was that some of the search teams said they had been through that passage when in fact they had not. We had two excellent large maps of the cave plus many photocopies. Every team that went in had a small map. Even so people got mixed up as to their location.

The instructors checked on the “patient” three times during the day. He was right where he was supposed to be. After lunch they even switched in another instructor! The point is that everyone needs to be real careful about details. IC had bad information on which to make decisions.

After the debriefing, we were given certificates and took group pictures. I went back to the camper, finished loading, and was on the road by 10:30 a.m.

I intended to drive to somewhere near Amarillo, about 6 hours or so, and find a place to camp. There is a campground about 10 miles south of Amarillo that I had stayed at several years ago. It is only a few hundred feet from the Interstate and is very noisy, so I bypassed it and kept going. The first campground east of Amarillo was nothing more than an overpriced patch of grass. No facilities, power or anything and they wanted \$20 per night. I kept on going.

My Woodall's directory showed a campground near Grimes, but it was nowhere to be found. I kept on going and wound up about 5 miles west of McLean, halfway from Amarillo to the Oklahoma border. A gas station had a few pads on a gravel lot. \$15 per night for electric, water, and sewer hookups seemed reasonable; and it was after 6 p.m., so I took it. Mistake!

The electric outlets were completely destroyed by repeated short circuits. I never tried the water. The sewer connection was clogged, and the Interstate was still only a few hundred feet away. I put in earplugs and got a decent night's sleep. Several storms came through overnight, including one with winds over 40 mph.

Had I kept going another 5 miles, I would have found an excellent campground at McLean. Sigh ...

Day Eleven, Sunday • June 29

The road home

I got up very early, had breakfast, packed up, and left. I was on the road by 6:30 a.m. Very soon after I left, I ran into a rainstorm. It rained for the next two hours, well into Oklahoma. The weather cleared and was clear until about Emporia. I got another dose of rain coming out of Emporia. I arrived home at 4:30 p.m.

Total driving distance was about 930 miles each way to Washington Ranch. Pulling my trailer, I got about 15 miles per gallon.

Conclusion: I highly recommend everyone take this training if at all possible. You learn a lot about cave rescue. Perhaps as important, you learn how much you still don't know! You meet people from all over the country, making an excellent chance to network with other groups. ■

largest and most forbidding canyons in the entire area — Black River Canyon. With incredibly steep canyon walls, it resembles the Grand Canyon.) Even though we couldn't enter the lower passages of Cottonwood, we nonetheless found the cave to be quite impressive. The entrance rooms are filled with huge formations. Many were large enough they would have easily looked at home in Carlsbad Caverns. The formations were largely dry and dead —

with the cave being located near the top of the ridge (it must be one of the oldest caves in the area), but the formations were still exceptionally impressive. In some respects, the cave was similar to Goat Cave. Both caves have huge passageways and the entrance areas to both caves are covered with the powdery remains of animal dung. But whereas Goat Cave was largely devoid of formations, Cottonwood was a showcase of the largest formations that the horizontal cavers encountered (outside of Carlsbad Caverns). Some stalagmites were easily 40 feet in diameter and at least as much in height. Some of these formations are even visible from the cave mouth. The back third of the entrance level is largely breakdown. The cave floor slips down precipitously at the back, and this is where the gate for the lower level is located. It's a simple double-bar gate in a shallow metal shaft. From discussions with Ransom Turner, this section of the cave houses some fragile aragonite crystals and other rare formations. Denied access to this level, we inspected the tunnel at the very rear of the cave and found nice-sized dog-tooth spar calcite crystals lining cracks in the limestone bedrock. We also inspected a lower breakdown room. It contained no formations. Dave was quite interested in the tunnel at the back of the cave and spent several minutes exploring it. He even coaxed Sam to join him as they theorized about the material used for graffiti on the tunnel wall. I was more interested in the huge formations in the cave's main passages and returned to spend additional time re-examining them. This is a magnificent cave. It might not contain formations as large as those in Ogle, but the Cottonwood formations are very impressive nonetheless.

Black Cave

We set off from Texas Camp atop the Guadalupe Ridge with a very detailed step log that contained at least 30 turns. But most of the turns simply followed the twists of the one clearly defined path that led to Cave Canyon. So the cave was easy to find. The hike was nearly two miles long. It led along ridge tops where plentiful junipers and pines restricted the vista. The trail was rocky and wide. Before beginning our hike to the cave entrance, we'd met briefly with Phyllis Boneau, who would be accompanying the vertical team to Hell Below Cave, and she said the dark residue on the walls of Black Cave was soot — the result of fires in the cave. I was expecting the usual explanation for black formations — manganese oxide. But subse-

quently I found an article by Carol A. Hill in which she said the black residue is indeed soot.

The formations in Black Cave weren't as big as those in Cottonwood. They were only a small fraction of the size. But they were still impressive. One formation was quite unique: whereas most formations involve a stalactite and a stalagmite, a formation in Black Cave had three levels: 1) a soda straw dripping from the ceiling, 2) a mid-level stalagmite/stalactite that pointed up as well as down, and 3) below this midlevel formation, we found a stalagmite.

The most interesting area of the cave for me was a canyon passage. When we found this passage, I approached it cautiously because there was a drop off of 8 feet into the canyon and I wasn't sure I could get back out if I dropped in. But after spending some time analyzing the situation and crawling along the ledge to the right, I became rather confident that getting back out wouldn't be a problem. The limestone walls were nothing like Missouri dolomite, which becomes quite slippery when wet. This New Mexico limestone had a ribbed, non-slip surface — just about the easiest surface to climb across that I've ever encountered. And Dave had a handline if we needed it. So we were set. In addition, Phyllis Boneau had told us that there was a long passage beyond the pools, so I was looking forward to testing my chimneying ability and investigating the canyon passage. Because the Guadalupe Mountains have experienced much reduced rain levels over the past several years, the water level in the canyon passage was relatively low. Dave and I found only a few inches of water. Instead of walking through the water, however, and possibly clouding the water and trampling on any life, we decided to go ahead and chimney the passage. The first part was quite easy. I could place one foot on one side and my other foot on the other side and pretty much walk right down the passage. But eventually the canyon sides got far enough apart that I had to place both feet on one wall and both hands on the other and slowly move sideways down the passage. Once again, the ribbed surface of the limestone made foot traction ideal and chimneying wasn't a problem. Dave followed and eventually



Above: While trekking to caves, we frequently encountered lizards (photos by Mike McKinney). **Below:** David Foran looks into the entrance of Black Cave (photo by Gary Johnson).





Above: White's City campground is surrounded by prickly pear, yucca, and other desert vegetation (photo by Mike McKinney). **Above right:** From the west edge of White's City campground, a trail heads over a hill. This is the Old Guano Trail. It's the route that early explorers took to the mouth of Carlsbad Caverns (photo by Mike McKinney). **Below left:** This castle-like structure sits on the hill to the north of White's City campground (photo by Mike McKinney). **Below right:** This profile of the Guadalupe Mountains greets visitors as they approach Carlsbad Caverns from the north. That's El Capitan at the left (photo by Mike McKinney).



Sam also followed, while Pam and Kathy stayed back at the lip of the canyon passage. All of us found the passage to be rather easy to negotiate. At the far side, I found a tiny squeeze between some rocks that led to a continuation of the passage. This was maybe the tightest squeeze I've ever attempted to negotiate. But once through the squeeze, the passage immediately opened up. I continued chimneying my way up the side of the canyon while Sam and Dave watched below. I kept expecting to reach a large passage, but before I knew it, I was looking at a dead end. Unlike Phyllis' assertion that the passage continued for a long way, we discovered only about 70 feet of passage beyond the water. But it was a fun side trip nonetheless. We retraced our steps and crawled back up and out of the canyon passage to join Kathy and Pam and explore the rest of the cave.

Side note: we had originally planned to also visit Little Beauty Cave. The Lincoln National Forest cave expert, Ransom Turner, had described the cave as short, only about 200 feet long, but profusely decorated. However, we didn't receive a complete step log for Little Beauty. The step log only contained directions to Texas Camp. I knew the cave was at least a mile, maybe two, beyond Black Cave and down Cave Canyon, but without an actual step log, we didn't try to find the cave.

A few miscellaneous topics

About the drive to New Mexico: This is a murderous drive, particularly the seemingly endless stretch from Oklahoma City to Amarillo. I drove the entire route by myself and I don't recommend that for anyone. It's horribly monotonous and I had to fight off a couple of drowsy spells. And be sure to wear your seat belt in Texas. A state trooper — going in

the opposite direction (across a median even) — picked me out of the traffic and tracked me down. As the trooper told me, "We take seat belt violations seriously in Texas." So consider yourself warned. (The fine: \$100.) As you close in on the town of Carlsbad, New Mexico, you begin to see the Guadalupe Mountains on the horizon. They run far to the south where they immediately terminate at El Capitan in Guadalupe Mountains National Park — a sheer vertical drop of several hundred feet and an impressive sight on the horizon. In fact, it was so impressive, I made the split decision to head for Guadalupe Mountains National Park, set up camp, and do some hiking. (The rest of the grotto wouldn't be arriving in New Mexico for a couple days yet.)

About White's City: We spent most of our evenings at the White's City campground. It's located immediately outside the entrance to Carlsbad Caverns National Park. There are no campgrounds within the National Park. White's City is the one and only campground for several miles. So we didn't really have any options. The campground is somewhat run down, but it served our purposes well. Grass cover was a bit sparse so the best campsites were quickly gobbled up. The campground is surrounded by extremely thick patches of prickly pear and other flowering plants (in fact most of the photos of desert flowers in this issue of the *Guano* were actually taken beside the White's City campground). I suspect this campground doesn't really get busy until the summer. Then it's likely a mad house, with a waterpark and knickknack shops attracting hordes of families. But for most of our time at White's City, we had the place to ourselves (except for the evening that a church group set up camp and spent most of the night strumming songs and trekking through the middle of our camp on their way to the restroom). A strange abandoned castle-like structure sits high on a hill to the north of White's City. One evening, several of the curious donned their headlamps and trekked up the hill to do a little exploring. White's City includes a filling station, a motel, a bar, a restaurant, a souvenir shop, a small grocery store, and some sort of arcade/tourist trap. We also had access to a swimming pool. This is one of the most expensive campgrounds that I've ever encountered, though. It costs \$20 per campsite.



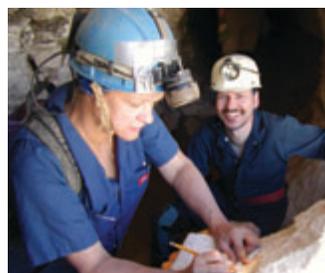
About the wind: The Guadalupe Mountains have to be one of the windiest places I've ever visited. Several members of the caving team experienced broken tent poles. Winds even claimed Barry and Regan's large shelter tent, which had previously seemed indestructible. I had my tent guyed out on all four corners and it withstood the wind, but later I discovered one of the fiberglass pole sections had split (but after applying a little duct tape it was fine again). Winds at the White's City Campground were strong, but the strongest winds awaited us in Lincoln National Forest. We set up camp in Dark Canyon to the north of the Guadalupe Ridge (about 1,000 vertical feet below Texas Camp and the ranger lookout station). We shared the area with cattle and horses. Here, winds ripped through camp, twisting tents and making it difficult to sleep. Winds typically arrived in the middle of the night. Tremendous 60+ mph gusts that brought along dust and grit. The dust was so fine that it worked its way into everything I owned. It went right through the tent's ventilation mesh and coated all the contents. But luckily the winds also made the New Mexico heat quite tolerable. During the days, we experienced temperatures in the mid 80s. But the constant wind made the air seem much cooler. If you head to the Guadalupe Mountains, be sure your tent is sturdy and in good condition. And by all means take an extra 10 minutes to guy down the tent corners. We experienced drastic changes in the wind direction, so don't try to get away with guying down just one corner. Do all four. And it's probably a good idea to be carrying a repair kit for your tent poles.

About the drive home: Kansas gets a bad rap. People say it's flat and boring. But on my return drive home from New Mexico, I found Kansas to be anything but flat and boring. Most of the highway from New Mexico to Kansas City is indeed dreadfully flat. The land surrounding the highway in the Texas panhandle and western Oklahoma is brown and parched. This is mostly cattle country. Not many farmers try to till this soil. Trees are few. Most ground cover is sparse. But the closer I got to Kansas, the greener the land became. Trees became taller and thicker. North of Wichita, the land became absolutely verdant. Everything was green. And then the Flint Hills sent ripples across the landscape, causing the highway to dip and curve. I'd never seen Kansas like this, contrasted with its flat and dry neighbors to the south. It was nothing less than inviting and (dare I say it) beautiful. Kansas? Okay, it was still spring and the deadly summer heat had not yet parched the Kansas soil. But during early May 2003, Kansas looked nothing like its critics say. It was a green carpet in contrast to the rocky flatland to the south. Sometimes it takes a different perspective to make you appreciate what you have, to appreciate the land that you call home.

Wrap-Up

Overall, this was a great trip. We were in New Mexico for a full week and saw many caves, but I feel like we only scratched the surface. Carlsbad Caverns alone can keep you busy for several days with all the tours that they offer, and the hiking trails in the National Park and in adjoining Lincoln National Forest could keep you busy for several weeks.

Thanks go to Richard and Jerry Cindric for putting together this trip. This was an incredible experience, and I'd eagerly go on another trip like this in the future. ■



Above: All photos by Mike McKinney, except the Carlsbad formation, which is by Richard Cindric.