Fort Stanton Cave

Exploration

To Crystal Creek and Metro

BY JOHN T.M. LYLES

North on Snowy River

September, 2004

When we arrived on Friday evening before Labor Day, camp was buzzing with a strange mix of cavers, from old timers to youngsters, diggers, CRF cavers, SWR cavers, Lechuguilla cavers, CO, AZ, and TX cavers. The Southwest Region had converged with a project weekend at Ft. Stanton Cave. Permits, paperwork, and people, all were ready to go. Master organizer John Corcoran had organized teams for various duties in the cave, and on the surface.

On Saturday morning, the first two teams entered Ft. Stanton with new instructions to haul clean outfits and packs inside their dirty gear. They were to pick up the survey of Snowy River (SR), which was begun during the July 4 project week. It had been surveyed for 2780 feet going south. North had not been pushed until a plan was devised for changing from clean to dirty clothes and vice versa. On Sunday morning, between 2 and 4 a.m., the two survey teams exited the cave, telling exciting stories of going passage both north and south in SR. With no obstacles in their way, John McLean's team surveyed north for 3277 feet, while Donald Davis' team surveyed south for 2148 feet. I woke North team sketcher John Ganter to hear his story; it sounded too good to be true. Walking (dry) passage, going like a cement highway. It eventually ducked under a wall, so hauling dirty outfits would be needed for the next push. Donald Davis' team reported similar going passage, but they had been slowed by the repeated outfit changes due to the crossing of muddy banks when SR was obstructed.

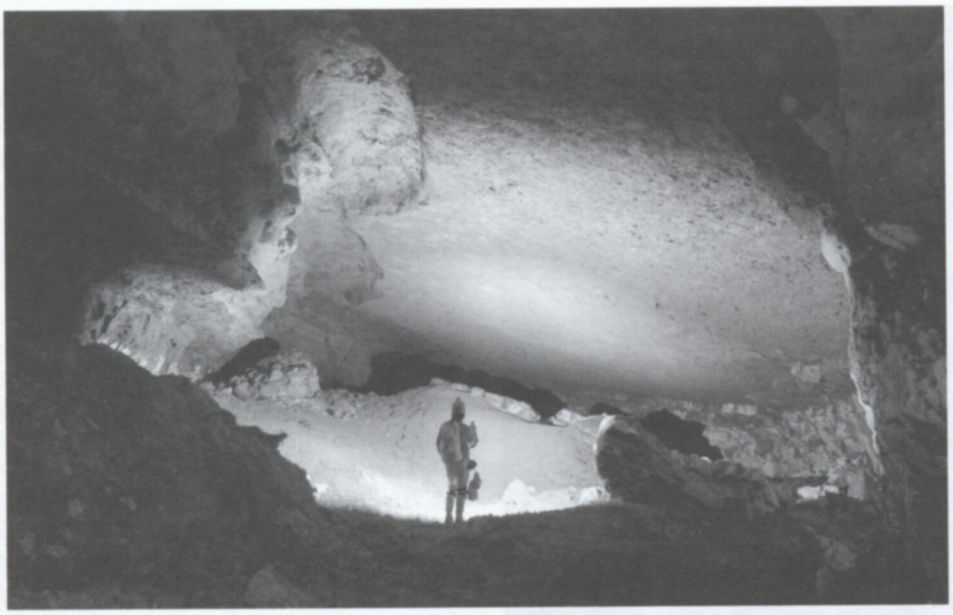
I suited up to join a fresh team led by Hobbs cavers Kat Rix and Andrew Grieco, Colorado caver Chris Andrews (sketcher), and Santa Fe caver Carrie Finn. We entered at 9:30AM and promptly reached the new P7 gate. Following us was John Cochran's photography team. As we crawled along, I couldn't help but notice "a few" unstable-looking ceiling chocks and boulders. This dig had been going since the 1970s, rising up along the bedrock wall beside a large breakdown chamber. Old digging utensils were passed enroute, like burned-out weapons of war. It was an impressive excavation. There were several delays as packs were passed, or rockfall zones were individually crawled through. Andrew told me the insane story of how he and the breakthrough team had jumped down a large fissure, only to find that they simply could not climb back up. They eventually escaped by standing on top of one another. Now it was rigged with a convenient cable ladder. When we reached the lowest level, the route became muddy and low again, requiring slogging along in a damp bellycrawl to Starry Nights. A small hole with tell-tale flagging fluttering in the wind told us this was the way, and led to the "boat ramp" – it's not really a ramp into water, but a changing-over place before entering the pristine white SR. Unfortunately, the muddiest part of the trip was through Starry Nights.

We began the laborious process of changing our clothes and packs, leaving some gear behind and bringing a select set of dirty gear in a pack or bag, for later crossovers. Kat tried the 185 KHz induction radio on a 12:30 schedule but had no luck raising the surface radio crew. As we headed north in SR, we immediately had to duck under and crawl with our packs, avoiding touching the low ceiling or dropping debris on the floor. After a short crawl though, it opened up into walking trunk, 10-15 feet wide, often taller, with a white highway. At first I hiked cautiously in my aqua sox. After a while I became more comfortable with this; it was not like anything I had caved in before. Parts of Lechuguilla Cave are white in granular gypsum powder from floor to ceiling, but this was a stream trunk with a white "pavement" down the middle. Later we walked through the remnants of shallow rap-

Photo

Looking north through stalactites and stalagmites toward station 1SRN76.

Photo by John Ganter.



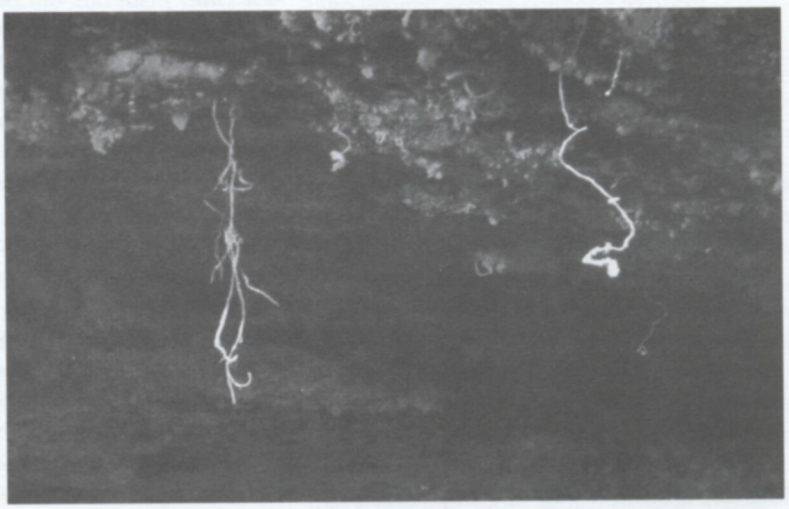
Large passage at 1SRN67, looking south.

Photo by John Ganter.

ids or overflows in pools. We reached SRN60 and began to survey to SRN76, at the terminus of the walking section of SR. The previous night's survey had netted many 60-80' shots in the easy walking passage. The creamy white floor gradually darkened to a tan/beige hue, with small dry plunge pool basins. One had 10mm-sized pea gravel thathad been polished into what looked like Chiclets gum. These "pearls" were probably formed by tumbling action of running water. Some of the gravel was loose, and was white/gray, while the cemented pieces were beige like the basin. The loose gravel must have washed in late in the last wet period, and hadn't been completely coated. Our survey shots averaged 43 feet, shorter than the straight sections of the night before. Since SR had disappeared under a low crawl, we created a changing zone at SRN75, and climbed up into a paleo passage to continue. I spent about 20 minutes looking for my compass, which was inadvertently lodged in my coveralls during the change, behind my kneepads. Everyone joined in the search, which embarrassingly ended in my own britches.

When we reached the chamber above, it was vast and dirty. The walls had a distinctive bathtub ring halfway up. The room was shaped like a giant bathtub 25 feet tall, 35 feet wide, and approximately a hundred feet long, so I called it Lincoln's Bathtub. At the opposite end, a muddy slope dropped down to the continuation of SR. It had emerged from a breakdown wall and was no longer beige, but was brown with a hard muddy crust. Everything was sticky and slippery. Ceiling height was still over 20 feet, and the passage was still going. Kat discovered that the muddy crust was fragile. As she stood near a small ledge at the end of SR, she noticed running water trickling out from the underlying bedrock! Kat called this Crystal Creek. The sizeable stream passage continued into the distance. After some discussion over what to do (we were awestruck at this point and were having difficulty coming to a consensus) we agreed to stop the survey, as the rules in the EA called for BLM decision if pooled water was reached. Running water could be even more significant. 4195 feet of passage had been surveyed from the boat ramp to Crystal Creek. We had stopped about 550 feet south-southeast of where Highway 380 would cross on the map. Snowflake passage, the previously known northern limit of Ft. Stanton Cave, ends a horizontal distance of about 450 feet from the road. Crystal Creek is roughly 2000 feet east and plots lower in elevation than the end of Snowflake. We could not determine if it would indeed sump or continue downslope under the highway and into the ridge on the north.

The evening was young, and we felt like we were finally on a roll. As we retreated back to the boat ramp, we stopped to survey into a big lead going east near SRN13, noted by the first north team. A shallow mud bank was a perfect place to set up the shower curtain sheet as a changing place. I used another plastic bag to cover SR so that any dirt that rolled down would be captured. Kat and Andrew rested under space blankets in the trail, and Carrie and I began setting stations. Chris assumed that it was a blind dome that would be easy to sketch, so he rested while we called the numbers to him. We changed back into dirties, and started to climb a steep unconsolidated debris slope to a large dome, which we called Saguaro Dome. The angle of repose was such that it was nearly impossible to climb without losing ground (sliding down), and there were no hand- or footholds. We had seen a dark rectangular window high up on a wall beside the slope. Carrie discovered a muddy ledge leading to the dark window, and called out that she was under the dome. We attempted a long laser shot from SR to her station, as we didn't want to drag our tape across the mud. The laser wouldn't allow this length, so we broke it into 4 shots covering 160 feet. Carrie and I gasped and rolled our eyes when we saw a 15 x 15 foot passage going south from the dome. We called to Andrew and Kat and told them the news, as they were about to go back to the boat ramp, to set up for their midnight radio contact. By now Chris had joined us, and the team was surveying at 1SRN5. We passed though a dry mud-covered room, which had profuse mud cracks. It had one



Fragile erratic gypsum in the Metro at station 1SRN17 near the Painted Cliff's south end.

Photo by Chris Andrews.

lead in the ceiling. The mud coating covered everything with flat surfaces. We led a single path, and surveyed a 69-foot shot into a unique passage. It was highly eroded, and had various small holes and joints in the walls. Chris was about ready to call it a night, when I rounded the next bend. I begged for two more shots before quitting. We had a deal. Around the bend, I had looked up a slope into darkness!

We made the final 53-foot shot up a 34-degree ramp to a block in the middle of a large north- and south-going passage. We called the approach the Escalator, as it delivered us up to the train-sized tunnel at 1SRN10. The walls were 40 feet apart and the ceiling was 20 feet above. This trunk passage we named the Metro. The floor appeared to be composed of unconsolidated small breakdown, rock flour, and dry mud. The walls were ringed with steeply dipping bedding; a lighter siltstone bed cropped out near the ceiling. There was a faint but noticeable breeze, similar to what is experienced in the main trunk of Ft. Stanton. The north direction seemed to go also, around the escalator ramp. The south direction was going as far as our laser rangefinder could measure (130 feet or so).

I wished for our train to continue in Metro, but I stuck to my deal with Chris - we turned around. The excitement of the big passage gave us an adrenalin boost, which we now needed to use to our advantage to get out of this cave. The radio contact had again been unsuccessful at the Boat Ramp, so we packed our stuff into our dirty packs and headed out. The air whooshed through parts of P7 as we departed. We reached the surface at 3 a.m., and were debriefed by John and Dorothy Corcoran and others over their delicious spaghetti dinner. The radio problems were traced to a miscommunication, so that the surface team had gone to the wrong location. I got about 3 hours of sleep and rose to address cavers buzzing with questions about what happened on our shift. We packed up for the drive home to Santa Fe.

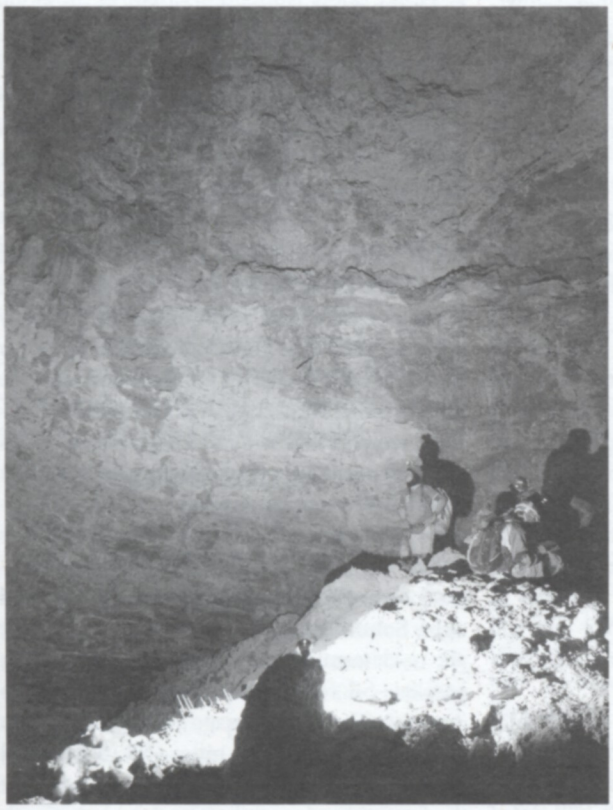
October, 2004: Metro

The October expedition began where we had left off. On Saturday, October 11, a team composed of Lloyd Swartz, Chris Andrews, Carrie Finn, Jim Cox and Chad Posten had surveyed 62 stations going south in the Metro. They left going trunk passage, as Metro was living up to its name. They had even found tree roots in one large room. Metro undulates vertically about 100 feet, with a high ceiling of breccia/siltstone in contact with underlying bedded limestone. Further south, the floor had dropped in elevation, creating relatively large borehole passage.

On Tuesday, October 14, I was invited to join a team composed of Lloyd Swartz, Chris Andrews, John Ganter, Cliff Snyder and Jim Lawton to continue surveying in Metro. We entered the cave around 9 a.m., hauling in several heavy hydraulic jacks that had been purchased locally, to leave in various locations in P7. This mission was accomplished, and we were at the turnoff of Snowy River to Metro in a few hours. I climbed to the top of the scree slope at Saguaro Dome, knowing that there was no way to come back down safely via the same route. I was digging my hands into loose rubble for holds, finding few that I could trust. I kept my center of gravity low and reached the peak, calling back down that I would check it out. On the northern edge, I could see a low passage coming in, meaning Metro continued north also. On the southeast edge of the dome, another low passage dropped and I scrambled down to follow it. I did not want to have to descend that slope I had climbed and hoped for a better route, perhaps to the north edge of the upper escalator passage. In a few hundred feet I was overjoyed to find this was the case. I rushed back down the escalator to reach my comrades who were beginning to arrive via the discovery route. Now we had two directions to survey in Metro!

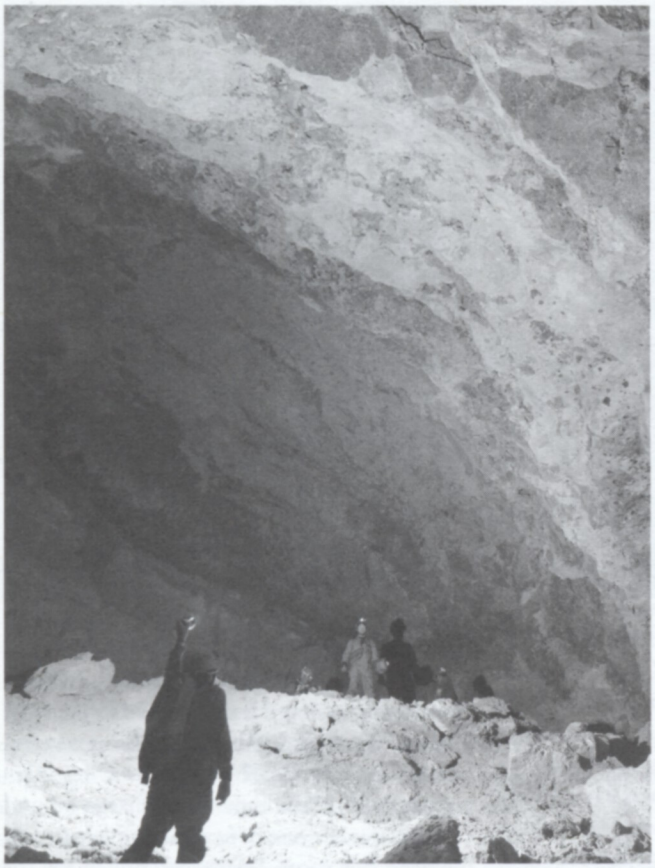
At the top of the escalator ramp, Metro headed south with passage averaging 30-50 feet wide and 10-20 feet tall. Near 1SRN11, a large segment had been named Roundhouse. A large descending lead dropped to the right here, and we left it untouched as had the earlier team. We began marking our path with strips of flagging, to minimize further impact. Between 1SRN12 and 13, the passage was called Painted Cliffs, for its color and shape. Another unexplored lead dropped to the right down a hole, near 1SRN13. The floor was frequently scarred with drip holes, leaving spectacular mud splash cups. In one large mound of rubble under one of several domes, we saw the dead tree roots. I packaged one in foil for C14 dating. A large canyon appeared in the floor between 1SRN14 and 15, which we crossed via a traverse along the west wall. It looked to be over 20 feet deep, and had been named Scary Carry by Saturday's team. At the bottom, passage appeared to parallel Metro at a lower level. At 1SRN20 the floor dropped while the ceiling followed the contact between bedded San Andres limestone and the less soluble overlying layer. This made the passage even larger, typical Ft. Stanton trunk passage.

At 1SRN24 we examined an alcove on the right, in a corner where Metro zigzagged. Fine gypsum flowers and beards hung under a ledge, so Chris and I set up for photos. A high lead went up into the corner in a joint. After another 15 minutes we reached Rabbit's Eye View of a Carrot Patch at 1SRN39. Carrot Patch was named for many small stalactites covered with brown cave velvet. Near this point, we were close to Snowy River South, but no connection could be found along the west wall. We reached the survey starting point, and began our work. We continued to mark our trail, and crossed large banks of silt. Finally we reached a very obvious paleo stream passage near 1SRN70, which was exposed down to small gravel and cobbles. The gravel was gray and coated in places, a reminder of the nearby Snowy River passage. The water flow had left directional clues,



Team members look down the steep slope of Disappointment Dome.

Photo by John Ganter.



Looking up the steep slope of Disappointment Dome.

Photo by John Ganter.

which indicated that the water flowed north, as had also been observed in SR. A flat gravel bar provided a rest spot for lunch and observations. The stream passage was disrupted at each end by the large sediment deposits.

We continued following Metro as it now diminished in size, and reached a pretty area with velvet coatings of golden calcite. After a photo shoot, we continued surveying across, reaching a steep climb. The way to go was up, as the streamway was blocked by collapse We shot high-angle to the top of a large pile, beneath a tall dome about 75 feet in diameter. The route was unstable with loose breakdown strewn about. While Chris sketched at the top of the pile, we looked for the way on; it continued directly across and back down the far side. There was still a slight breeze. The drop down the far side of the pile was clear of boulders and was a long slope with few handholds. After Lloyd descended, I started down, losing control and sliding down on my rear for the entire way. Near the bottom I believed I would slide off the floor into dark space, so I grabbed a formation, and averted doom. Breakdown was even larger on this side of Disappointment Dome. Metro then played a horrible trick on us. At the far side of the final room, a breccia collapse covered any continuation, and a blank wall ended our survey at 1SRN84. We spent time chasing for air, but found none here. Later we thought that perhaps the airflow had changed in the cave, so that it was probably a poor time for airflow checks. There was 4489 feet of surveyed passage between Snowy River and this south extent of Metro.

I headed back into the space between the pile and the entrance stream passage, and spent 15 minutes crawling through both wedged and dangerously loose boulders. Eventually I established voice contact with John Ganter who was at the face of the collapse. After thorough searching under this breakdown I concluded that there was no further route along the stream. The only way on was probably under the floor somewhere in the terminal room. We turned around and followed our trail back to the beginning of Metro at the escalator. It was still early evening, so we began surveying Metro to the north from 1SRN10 at the Escalator.

In the connecting passage from upper escalator to the top of Saguaro Dome, we found beautiful layered siltstone slabs, which showed swirled patterns like polished wood. Several had a glossy appearance where they had fractured or sheared. As we climbed up the connection to the Dome, I noted what appeared to be some type of deposits similar to corrosion residue. There were splotches on the upper surface of a rock, which didn't look like droppings from the ceiling. The passage was dripping with condensation and had a noticeable draft. The deposits were fluffy and brown, and reminded me of residue in Lechuguilla Cave. A future science trip will analyze this to see if it is merely mud or perhaps a bioactive speleosol.

The route into north Metro didn't look good, starting with a crawl through breakdown. However, within a dozen feet it became obvious that it was a paleo stream of smaller dimensions than South Metro. It meandered along with cracked mud floor with undercut walls. Further on, we reached a dome with more roots, hanging from the ceiling. I packaged one in foil for C14 analysis, and we continued. The passage became lower and wide at this point. The floor was composed of finely ground rafts, in a texture like the micaceous clay of Northern New Mexico. It was mushy and deep. We made a route along one side. The passage continued with decreasing dimensions, until we were crawling in a low airy space. It widened here and I had a feeling that we were near a surface hole, due to a cold breeze. It was after midnight now, so we called the trip at 2SRN24 and packed out. We reached the radio set at the landing at 1a.m., and again tried to contact base with no luck. We packed out and reached the freezing surface within a few hours for debriefing and dinner with John, Dorothy, and Kat. We had surveyed 1106 feet of new passage.

On Oct. 17, Donald Davis, Chris Andrews, Lloyd Swartz, John McLean, Jim Lawton, and Steve Lindsley went back to Metro, to survey some of the remaining leads. They began RH survey in the right lead from Roundhouse near 1SRN11. The bedded limestone between the upper left Metro and lower right lead dipped steeply westward at about 20 degrees. The first shot descended 18 degrees for 78 feet into a smaller passage, which was followed past a junction for 734 feet. It proved to be the passage seen below the Scary Carry slot. Along RH12 to 14, there was intermittent gypsum crust up to 2 inches thick. Some hair-thin gypsum flowers were seen that were 3 inches long. Beyond RH14, the passage rejoined Metro at ISRN22. Three major leads were merely entrances into this vadose conduit.

The team then headed to North Metro, and added one more 34-foot shot to the low crawl at the northern end. This became increasingly tight, so they quit and headed back to SR. It was now 1052 feet from the Escalator ramp to the northern end. They did not notice the airflow, which I had felt a few days before. With the exception of a few crawling leads, and a climb, Metro appears to have ended. The upper crawl was plotted and found to cross above the north branch of SR. At this northern point the Metro was extremely low and tight. South Metro will need to be checked for air, to determine if a dig may be possible. It parallels SR for about a third of its southern distance. The total passage surveyed in Metro is 6275 feet, or 1.19 miles. SR South and North have the highest-potential leads, but the former has low ceiling, and the latter is administratively closed pending biological evaluation . ■