

Fort Stanton Cave Snowy River South: Still No End

By Donald G. Davis



*We are not now that strength which in old days
Moved earth and heaven, that which we are, we are;
One equal temper of heroic hearts,
Made weak by time and fate, but strong in will
To strive, to seek, to find, and not to yield.*

—From *Ulysses*, by Alfred, Lord Tennyson (1833)

In my Fort Stanton Cave article in the Spring 2008 edition of *Rocky Mountain Caving*, we left the final Snowy River survey team in early May at the far southern station SRS181, in the Underground Railroad, where they “stared hungrily into virgin walking passage where their combined lights showed only more blackness in the distance.”

This was where the next trip was to begin on June 28, during the following FSC expedition. I was there, with Chris Andrews, Jon Broholm, John Lyles, Janae Hunderman, and Henry Schneiker. We began to set stations after traveling for several hours to the SRS181 starting point. The passage’s resemblance to a straight, narrow railroad tunnel, with steep silt banks on either side of the Snowy River calcite channel, didn’t continue for many more shots. The passage gradually became wider, with the calcite channel less regular and more twisting, and the adjacent silt banks lower and more gentle. With passage dimensions generally 15 by 15 feet, the ceiling never got below head height again, though we

sometimes had to lay plastic strips – called “magic carpets” by John Lyles – to keep our feet clean crossing silt banks, so we could avoid crawling through low meanders where Snowy River had undercut the wall (this practice had been adopted wherever in Snowy River that it made avoiding clothing changes possible). Old mud stalagmites along upper ledges were plentiful in some sections. The gallery turned more southwest and became sinuous again; we continued, seeing little further variation, to SRS214, where we ran short of plastic while the corridor went on big as ever. Nearly 2,500 more feet of passage had been surveyed during a trip about 23 hours long.

Bringing in many more plastic strips, the next team – myself, Jon Broholm, Jim Cox, Jon Lyles, Ed Peyton, and Lloyd Swartz – resumed work from SRS214 on July 1. The first few shots were much the same as before, with the passage twisting but trending generally west-southwest. However, at SRS218 there was something different: a cross-passage in

the ceiling, trending about 35/215 degrees. The southwest end appeared to either pinch or be filled with mud, but the northeast trend looked as if it might go, as a crouchway or smallish walkway. We could not climb up there without changing to dirty-clothing mode, and would perhaps have to cut steps and protect Snowy River from falling mud. Passing beneath, we kept on mapping the main trunk. But this was the first place since Turtle Junction where we had struck an unequivocally open, sizable side passage, so its presence seemed very interesting. Were we finally coming into more complex inner cave?

The main passage continued big, in a generally southwesterly direction. For about 200 feet in the SRS220 series, the flattish

Photo:

Cavers at Mud Turtle Junction prepare for another long Snowy River exploration trip.

Photograph by John T.M. Lyles.

ceiling was festooned with hundreds of small stalactites up to 10 inches long, old and dry, with little stalagmites, columns, and thin velvet flowstone along peripheral ledges. Some of this flowstone had originally been laid down on silt slopes, which had subsequently disappeared from underneath the calcite, leaving intricate, delicate canopy shells suspended. Aside from the endless calcite-lined floor channel, this was the most extensive decoration yet seen anywhere in Snowy River proper – reminiscent of Helictite Hall in the original cave.

Then at SRS241, the ceiling suddenly jumped to about 35 feet, with an alcove on the left. Looking up and back, we saw that another large opening appeared on a balcony, apparently crossing the lower passage from the north. This was the first apparent side passage on the scale of the main Snowy River trunk since the Metro off Snowy River North. Below it the airflow seemed to increase; our survey station flagging wiggled sometimes even when no one was near it. Again, this lead would have required getting dirty climbing up, and protecting Snowy River from mudfall, so none of us looked more closely.

Upstream from this junction, the passage cross-section at least doubled, suggesting that the Snowy River passage we had been following up to that point had been a drain pirated from the older upper lead, and that the cross-sections from the junction onward would represent the area of both combined. This proved to be the case, with the borehole being now about 20 feet wide by 30 to 35 high. We made three more shots that night, the final

one being 140 feet through a huge, straight canyon segment to station SRS244. Projecting ledges near SRS243 gave a creepy impression of the profile of a weird, goggle-eyed, big-nosed gargoyle. John Corcoran had suggested when the expedition started that we name a suitable new passage after the early FSC explorer Robbie Babb, who had died not long ago. We considered that this grand gallery was impressive enough to honor him fittingly, and therefore called it Babb's Borehole.

The larger size of the passage was also making it more prone to collapse. Beyond station 244, a flow of large breakdown blocks had slid down from the left over the Snowy River channel. The calcite strip came out of a spacious white-lined crawl down to the left, while the main void crossed over the toe of the rubble toe. The next shot would require some planning, and it was already 3 a.m., so after naming this area "Buenos Aires," we once more started out, with more than 2,400 feet of survey. The last of us would depart the cave after more than 24 hours. As he had after the previous trip, John Corcoran entered the new data into his laptop as soon as the leading sub-team brought the book out, so the last team members out could see the plot of the extension as soon as they reached the fieldhouse. The cave had diverged from paralleling Cave Canyon, and was now heading southwest under some of the highest local ridges 500 feet above.

The final push trip of the expedition was scheduled to go onward starting July 4. I, Jennifer Foote, Brian Kendrick, John Lyles,

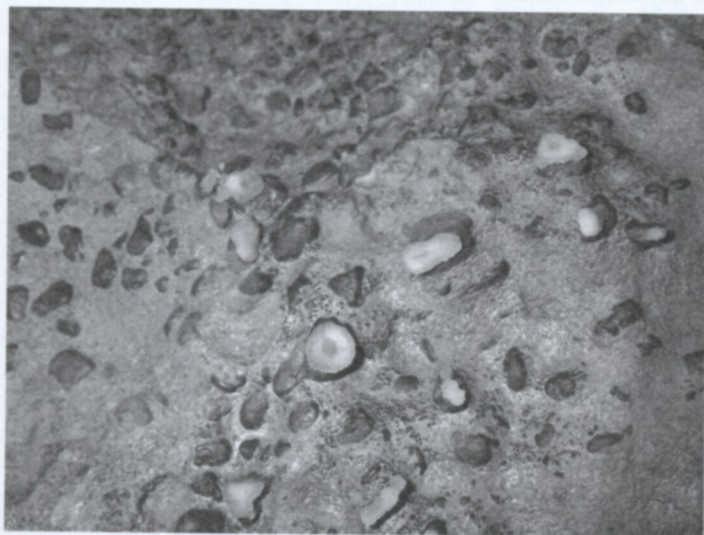
John McLean, and Lloyd Swartz headed in, taking more than seven hours for all to reach the new beginning of survey by 4 p.m. We negotiated the crawl under the breakdown past SRS244 and made a number of long shots through a new segment of sinuous borehole, interrupted by another short crawl around breakdown at 263-264. Then we came to another, larger breakdown flow from the left side, which nearly filled the main passage. From

SRS275 to 280, the collapse had pushed the Snowy River channel down along the right wall for more than 200 feet, where we surveyed through a series of open crawls with occasional windows up leftward into unexplored void above the breakdown. From this we emerged again into 40-foot-high corridor, with incised banks of layered, cross-bedded sandy and gritty sediment remnants extending many feet up the walls, testifying to the energy of the water that once flowed here before the Snowy River channel began to calcify.

At SRS285, the ceiling rose even higher, and a low-oval opening appeared high up on the right side, coming from the north. Above 286 and 287 were two more such balcony holes, each with a strip of thin, chalky flowstone, yellowish edged with white, running down from it. This flowstone is all old and dry (as is all of the sparse dripstone thus far found in inner Snowy River). These are probably all windows on an upper-level passage, even older than the one at SRS241, and possibly from a different hydrological system. Some protection hardware will probably be needed to climb to any of these.

At SRS288, the huge passage was again interrupted by another breakdown, mostly from the right, and with indefinite possible spaces above. Once more we followed the Snowy River calcite channel down under it, taking 10 short shots to negotiate about 200 feet. Then up at 298 into more big borehole. Four more long shots, and we were at the start of yet another breakdown mountain, this one centered over the original passage. Here the Snowy River calcite simply issued from under the middle of the rubble slope, without a convenient bypass crawlway to follow. From station 302 we made a Disto laser shot, along a 230-degree azimuth, 120 feet up a wide 20-degree rubble slope to where a dimly-visible passage leveled off at the top of the mound. Eddying breezes seemed to swirl around us as we gazed up into - where? John Lyles named the ongoing breakdown ascent Mount Airy.

It was 1:15 a.m., we had shot a remarkable 58 stations and gained just under 3,000 feet, and it appeared that no more could be done without a full garment change to dirty mode. So this seemed the right place to stop, with the biggest void of all looming ahead. We were somehow confident that the far side of Mount Airy would lead back down to more borehole. I felt very remote here, yet with the sense that we still stood only at the beginning of discoveries that would have been beyond imagining in the past. Turning our backs, we



Close-up of sediment bank in inner Snowy River South, with manganese-coated stream-laid pebbles and tiny "button" coralloids.

Photograph by Jennifer Foote.

split into two sub-teams to head outside, the latest of us getting out after 25 hours.

When the final data had been plotted (with the expedition total more than 1½ miles), we learned that we had just crossed under the Devil's Canyon/Regional Airport highway intersection, nearly 500 feet above us, with the cave continuing ever farther southwest and heading into a still higher topographic block. It seemed incredible that we were finally fulfilling, and I had lived to see with my own eyes, the reality of the vague fantasies that our younger selves had indulged in nearly half a century ago, when we speculated about what lay beyond the blowing Lincoln Caverns breakdown. Now, we had already passed around, and more than a mile beyond, the Lincoln Caverns breakdown, converging on an extension of the Lincoln Caverns trend. Does one (or more) of the high leads go back north to the inward side of that breakdown? Is one the extension of the Metro beyond its terminal breakdown? Perhaps an extension of Helicite Hall? Or do they lead to places yet unguessed?

The Snowy River channel continues at a remarkably low gradient. The Compass plot shows 6000.8 feet elevation at SRN75 (in the downstream end near the short dropoff to the Crystal Creek spring). SRS302, the upstream-most station, more than four miles along the channel, plots at only 6042.9 feet. When the 2,400+ feet of survey in the SRS214-244 segment were processed, the plot showed SRS244 about 20 feet lower than SRS214, which was opposite the true slope as evidenced by the flow direction of Snowy River itself. There were no clear backsight/foresight blunders, but on the next



Cavers surveying in inner Snowy River South.

Photograph by Jennifer Foote.

trip, the inclinations were reshot to make sure. The new compilation still showed SRS244 about 7 feet lower. Both of these results, of course, were still within less than the 1% error that most cave surveyors consider acceptable, but they demonstrate that the precision of Suunto inclinometer readings is inadequate to show definitively the true inclination of a passage so exceedingly flat as Snowy River.

Here I should give credit to John Corcoran, Steve Peerman, Wayne Walker, BLM staff, and the many others who planned and worked on the Sawyer Hall/Mud Turtle connection shortcut dig. I begrudged the years of delay after BLM closed Priority 7, but safety issues aside, I don't think that we would be nearly as far along in the exploration now if we still had to endure the slow, exhausting Priority 7 breakdown gantlet every time we travel to Snowy River and back.

Fort Stanton Cave's passage length now stands at 13.2 miles. Also, the cave's areal

extent, or "footprint" on the topographic map, has now become impressive, with 3.01 miles in a straight line between the two most distant points. This far exceeds the same dimension of Lechuguilla Cave! The travel distance from the entrance to SRS302 is 4.45 miles. The next expedition into Snowy River South may add much more to these numbers.

Unfortunately, it is not clear that this will happen as planned during the next scheduled FSC expedition in October. On July 27, a massive rainstorm hit the Ruidoso area, with local news media reporting up to seven inches that day (even 14 inches in the Sacramento Mountains). The result was said to be a 100-year flood, causing extensive property destruction along the Rio Ruidoso and its tributaries. The Rio Bonito appeared to have flowed five feet deep and 50 feet wide past the BLM fieldhouse near Fort Stanton. On July 31, New Mexico caver Steve Peerman saw Government Spring – the apparent outlet for Snowy River – gushing strongly.

John McLean had planned a non-exploring interim expedition for August 2-9, primarily to extend surface resistivity studies further across the cave area. On learning of the flood, he conferred with fellow caver-electronics builders and extended his plans to include assembling multiple types of water-detection sensors and water-depth loggers to be placed in the Snowy River channel at Turtle Junction. We hoped that despite the ominous boiling up



Cross-bedded sand and gravel bank along wall of far Snowy River South.

Photograph by Jennifer Foote.

of Government Spring, Snowy River might somehow still be dry, and that these devices could be placed in time to date the reappearance of water in it.

However, when a team reached the junction on August 3, Snowy River was found to be back in full flow, at least as high as – or a fraction of an inch higher than – in July 2007. In the next four days, two or three more thunderstorms each dumped an inch or more in parts of the Ruidoso/Fort Stanton area. A followup visit to Turtle Junction on August 8 found Snowy River still flowing vigorously, though perhaps 1/4 or 3/8 inch lower than on August 3. The new water-detection instrumentation was too late to catch the start of the current Snowy River flow episode, but should record the time when the water goes down again, as well as the next rise.

Steve Peerman took this opportunity to make a dye test from Snowy River to Government Spring (whose connection had been considered almost certain, but had never actually been proved). A pound of optical brightener was poured into Snowy River at 10 a.m. during the August 3 visit. Hourly samples were taken between 2 to 10 p.m. that day by immersing cotton balls in Government Spring and testing for fluorescence under UV light. The results up to 10 p.m. were negative, but another test at 7:15 a.m. August 4 was strongly positive, proving the Snowy River water did indeed resurge at Government Spring. A final test at noon was again negative, showing that the tail of the dye pulse had passed on by that time.

Steve Peerman also led the construction and placement of a plywood V-notch weir in the Government Spring channel, to allow measuring the outflow and perhaps establish a spring level that indicates when Snowy River is running. However, events during the week showed that the weir will give meaningful measurements only when the Bonito River surface flow is at less than two feet on the gauge just below Government Spring. Higher flows than that back into the Government Spring channel, overriding the free fall from the weir that is needed for it to work correctly. Bonito levels above three feet overflow the Government Spring channel's west bank, mixing the waters.

The August 2-9 expedition also demonstrated that flooding of the Main Corridor and Snowy River is not synchronized. Not only did the Main Corridor *not* reflow during this week, the mud left over from the 2007 flooding had dried further and was no longer very sticky, as it had been in early May. Because the Snowy

River rise following the monster Ruidoso storm was so "flashy," we still have some hope that if repeated heavy rainfall stops soon, Snowy River may drain fast enough to allow further exploration in October. (On September 6, a recon trip to Turtle Junction found Snowy River still flowing, though not quite as much as on August 19.)

Meanwhile, resistivity results suggest (with some ambiguity) that large cave continues southwest from Mount Airy. Other resistivity lines hint that the extension of Lincoln Caverns may be more westerly than southerly.

Each Snowy River survey trip seems to go faster per mile of cave than the one before, as

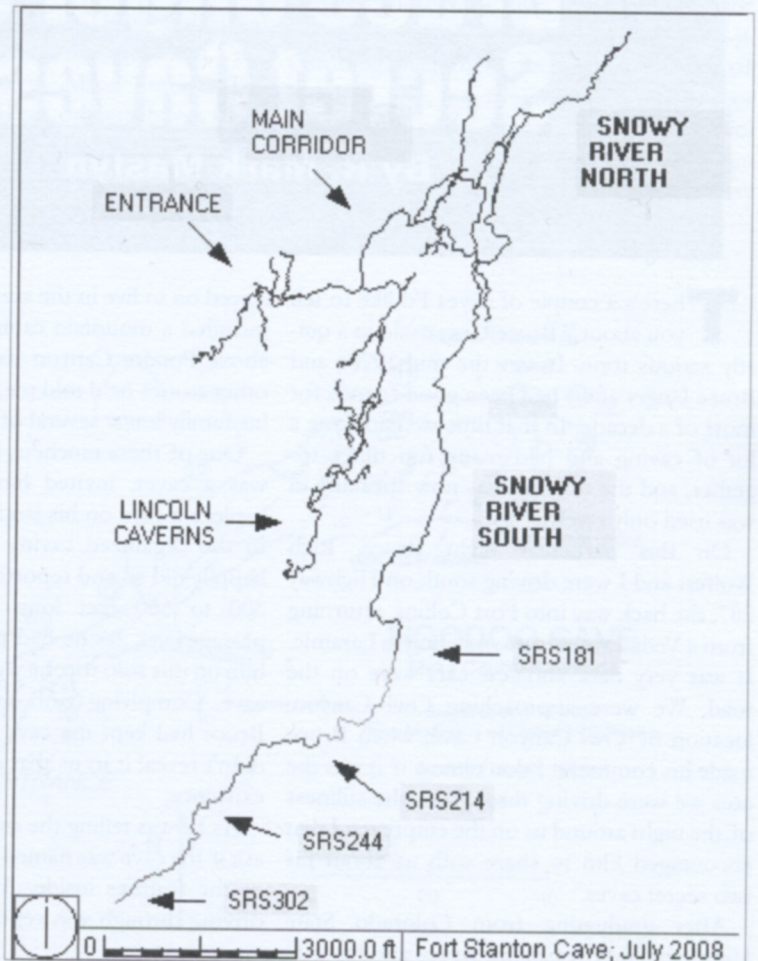
we learn route nuances better, refine some techniques, and have more plastic bridges in place. However, these forays still go farther in each time, and at 70 years old, I'm not sure how many more such trips I can make (unless camping can be instituted) before reaching my absolute endurance limit for such exertions. But I'm not quite there yet! There are still too many mysteries. Where did the water that formed the cave come from long ago? Where does the calcite-bearing Snowy River flow come from now?



High lead with flowstone cascade, about 50 feet above floor, near SRS285 in inner Snowy River South. Flowstone is about three feet wide.

Photograph by Jennifer Foote.

Do the upper leads ramify into tens of miles of Mammoth Cave-style multi-level networks? This idea now seems less far-fetched than it did 40 years ago. I'll never learn all of the answers, but maybe some of us (or our posterity) will. ■



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