

Exploring passages in Wind Cave National Park is always a rewarding venture. This extensive system, now mapped at over 140 miles of known passage, yields new discoveries nearly every trip. Colorado Grotto members frequently explore and survey passage in Wind Cave and regularly report on interesting discoveries in this extensive, mazy cave system. I had gone on over two dozen such trips and was interested in doing more, so ...

In early 2012, I had just recently completed my trip leader training and obtained approval to sketch, and I was seeking a survey project that could give me a chance to both practice sketching and to lead trips in a part of the cave without much travel-time to the project area. Rod Horrocks, Physical Science Specialist at Wind Cave NP, offered me a modest project in the “historic” portion of the system (read “near the elevator”), with both re-survey and several unmapped leads, so I announced a trip at the next Colorado Grotto meeting and recruited three cavers for the first of four trips to a section of Wind Cave known as Lacework Canyon.

Lacework Canyon is a trunk passage that is connected though crawling passage from the Model Room, a stop on one of the regular tour routes, so access was relatively simple. The area had been named for its moonmilk deposits that follow horizontal bedding, the “lacework”. It was first surveyed using the designation “UQ” back in the early 1970s, however, those existing sketches were rudimentary and the area lacked an inventory of cave features. Half a dozen side-leads were marked on the original sketch, but had been left unmapped. Another connecting passage known as the “Popcorn Squeeze” links back to another room on the tour route, the Temple. The prior work showed that the canyon ends with a climb up to a station in the “TZ” survey.



The lacework in Lacework Canyon is bedding-plane controlled hydromagnesite (moonmilk) bands on the walls of the passage. All photos by author unless noted.

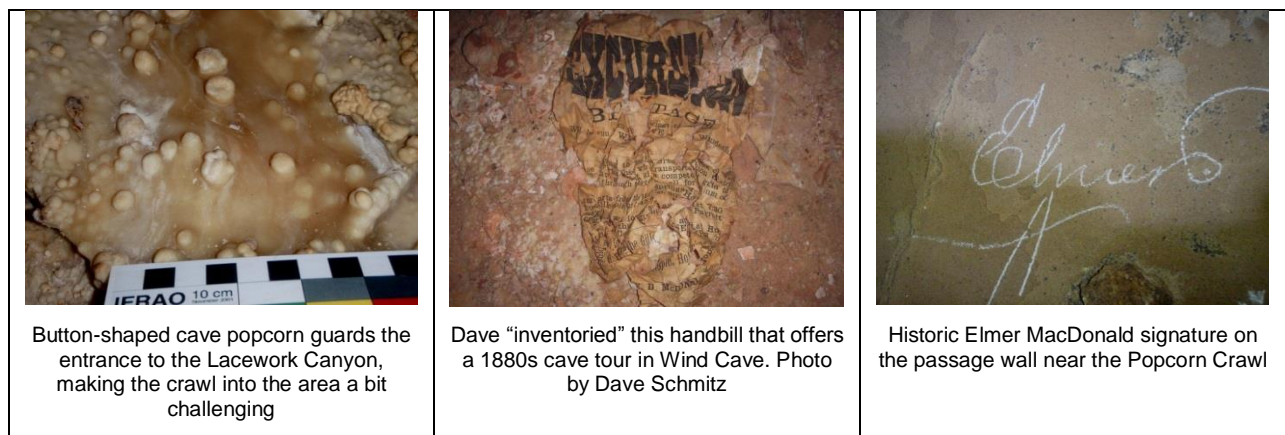


The March 2012 survey crew in the Wind Cave elevator lobby, ready to explore: Roger, Kevin, Robin & Dave

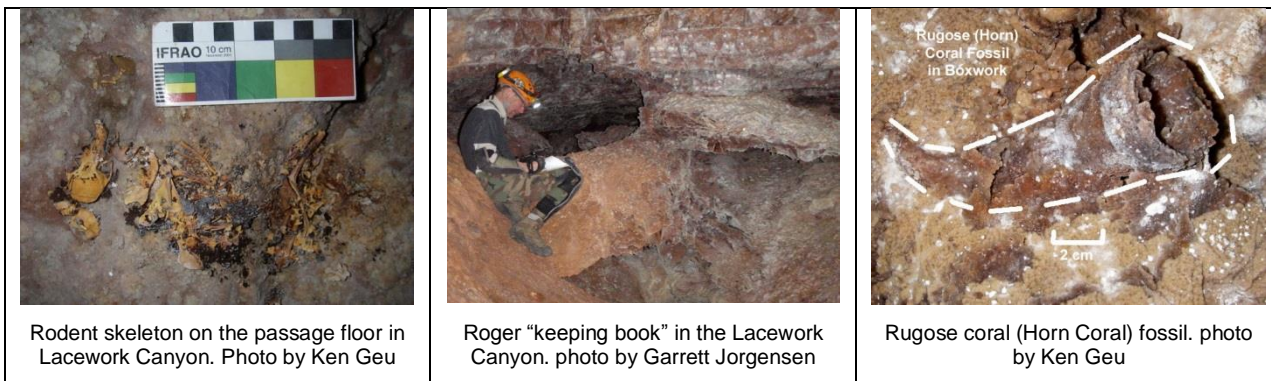


Kevin crawls past the Popcorn Squeeze

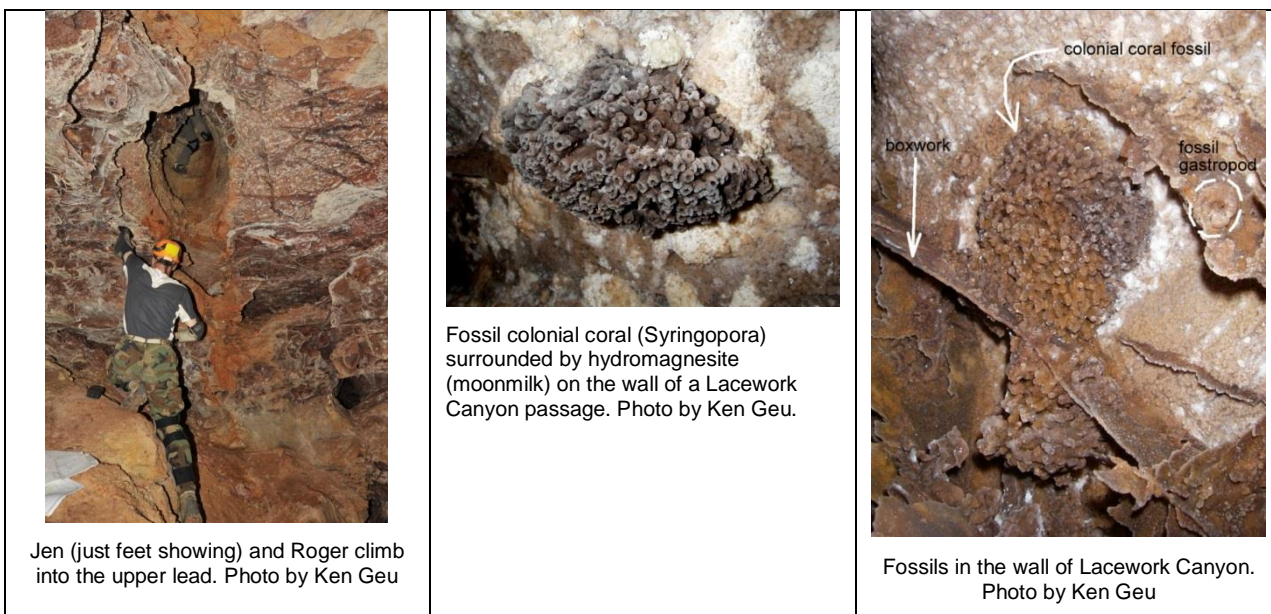
That first team was a Colorado Grotto affair. Dave Schmitz, Robin Bathurst and Kevin Manley joined me in March 2012 to survey the first segment of the canyon. We entered through the “Popcorn Squeeze”, a 9” high passage coated with “button” popcorn-features, making it a bit snaggy to crawl through. That day we focused about half our time on an unmarked lead, an unsurveyed lower level, and the day’s surveying totaled almost 200 ft. Some of the day’s work was taken up with sketching practice and compass training. Dave was doing inventory, and documented a handbill for a tour of Wind Cave from the 1880s: “Excursion By Stage ... Will be run from Hot Springs to the wonderful Wind Cave ... complete guide to ... through the caverns ... starts from the Hot Springs Hotel 7:45 AM ... A. D. McDonald”. Other finds included a boot sole and a tea candle, also assumed to be 1880s vintage. And on the way out of the canyon that evening, we spotted a previously undocumented 1880s signature of Elmer MacDonald, one of the original explorers of the cave system.



In May, after returning from an eight-day Lechuguilla trip, Adam Weaver (Papa Sapa Grotto) joined me for the second trip to Lacework Canyon. Wind Cave policy allows two-person teams in this close-in “Historic Quad”, so we took advantage of that rule and headed in. This time, we picked up our work at a station on the Tour Route, in the Model Room, and surveyed back to the March “work-area”, picking up a little over 500 feet of survey. We inventoried a rodent skeleton, a 1970s era leather glove, and more photos of the boot sole, clear signs that others had passed this way before. We noted fossils in the boxwork walls and enjoyed the complexity of passages that twisted, turned and looped-back to the trunk passage. A particularly tight passage tested our flexibility - a spot where one of those “turn-around-and-go-feet-first” maneuvers was required to negotiate the twisty, sharp bend in the passage. Later, when we emerged back onto the tour route, we encountered a group of park visitors, led by one of the park’s tour guide “Interpreters”. The tour leader made the mistake of asking Adam a general question about cave exploration. Adam complied and proceeded to give a lengthy and animated oration for the tour group, explaining our day’s work, as well as insights on our recent exploration in Lechuguilla Cave, and in nearby Jewel Cave. The group was entranced by his stories, but as another tour group caught up with the first, doubling his audience, the two Interpretive Guides began signaling to “wrap it up”, so they could get on with their tours. Adam received an enthusiastic round of applause before we bowed out.



When Rod looked over our survey notes, it was apparent to him that we had by-passed an interesting lead shown on the 1970s sketch. I assured Rod that we would check it more thoroughly on the next foray into Lacework Canyon. So, in August I returned to "push" that lead. It involved a climb out of a sizeable room (26' x 18' x 8' high) and, although what I had incorrectly marked as "TT" (too tight) tight previously, the passage continued past a boxwork "squeeze" and led into 150 feet of passage. This continued to a surprising ending in an obscure tight crawl back into the Cathedral Room, just up the tour route from our previous entry. This feat was accomplished by two NM cavers, Garrett Jorgensen & Jen Foote, with photo-documentation by Ken Geu. I tagged along, struggling to sketch this complex, cork-screw passage. That day netted 560+ feet of survey, but there was more passage to explore for yet another trip. With Ken's photos of a variety of fossils that he expertly documented in the walls of Lacework Canyon, our exploration area was continuing to yield intriguing discoveries.



Ken's wife, Robin acquiesced to take our team photo for that trip, and we had the privilege of being joined by another team entering the cave that day, the legendary Wind Cave explorers, Art & Peg Palmer.



The August team of Lacework Canyon explorers – Jen Foote, Roger Harris, Ken Geu, Garrett Jorgensen and other intrepid Wind Cave explorers that day, Art & Peg Palmer. Photo by Robin Geu.



Lacework Canyon "boxwork" walls



Lacework Annex lead left for the next team ... off into who knows where

Garrett & I vowed to finish up the Lacework Canyon exploration on a trip in December of 2012. The passage height increased as we continued to the north, ending in a 25 foot climb up a boxwork canyon. This time we surveyed mostly new footage, netting 356 ft., with 160 ft. of resurvey, to complete the connection to the TZ station. Yet we failed to "finish" the job. In a lower-level room, dubbed the "Lacework Annex", we left one going lead, with moving air; a tight, "key-holing", 2 ft. wide lead going off in to darkness below the TZ passages. It appears to offer no easy way for any explorer to turn around, and looked to be quite the struggle to gain access to its hidden secrets. Garrett offered to push on, but this trip leader was getting anxious about the "out-time" on the trip permit, so we left it behind ... anyone want to return and push it? After all, nearly ever Wind Cave trip yields new discoveries!

Roger Harris
January, 2014



Lacework Canyon

Wind Cave, Wind Cave National Park
Custer County, South Dakota

Pahasapa Limestone (Mississippian age, 340-360 my)
Suunto Compass, Clinometer, & Fiberglass Tape Survey
Surveyed: 3/10/2012 to 12/28/2012

Date Processed Using COMPASS software

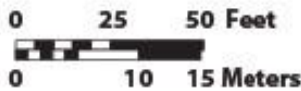
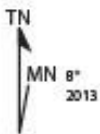
Map Drawn By Rodney D. Horrocks, 1/22/2014
using Adobe Illustrator CS5

Surveyed Length: 1,782 Feet (0.34 Miles or 543 m)

Surveyed By: Roger Harris (4 trips), Garrett Jorgensen (2 trips), Kevin Manley (1 trip), Dave Schmitz (1 trip), Jennifer Foote (1 trip), Ken Geu (1 trip), Adam Weaver (1 trip), & Robin Bathurst (1 trip)

Legend

Survey Station	Loose Sediment	Cone	Flowstone
Passage	Calcified Sediment	Ceiling Height	Gypsum
Unsurveyed Passage	Pile of Sediment	Ledge Height/Pk Depth	Popcorn
Underlying Passage	Mud Cracks	Water Depth	Bedrock Floor
Lead	Frostwork	Upper Middle Level	Div Below/Above Datum
Breakdown Choke	Stalactite	Middle Level	Breakdown
Too Tight	Stalagmite	Lower Middle Level	Slope (opens down)
Pk	Column	Upper Lower Level	
Floor Ledge	Drapery	Lower Level	
Ceiling Ledge			



MODEL ROOM

POPCORN SQUEEZE

SHOE SHOP

LACEWORK ANNEX

LACEWORK CANYON