



CAVE OWNERS' NEWSLETTER

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Department of Conservation and Economic Development
Commonwealth of Virginia
for the cave owners of Virginia

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Happy Holidays

You, the owners of caves in the Commonwealth of Virginia, are very important people. This underground wilderness is a fragile resource, sometimes of great beauty, sometimes home for very rare creatures, sometimes a site for unique recreational opportunities. We of the caving community have found a fellowship with others who share our interest in the world below that transcends lines that often divide people. In this fellowship we value the friendships that have grown with those who own cave properties. To all of you we send our best wishes at this holiday season.

CAVING: THE PASSIONS AND THE PITFALLS

Have you ever wondered what goes through the minds of active cavers indulging their avocation? By permission of the National Wildlife Federation, we reprint an article by Laura Alderson, a Virginian journalist and caver, that appeared in the April-May 1982 issue of National Wildlife Magazine and was copyrighted by the Federation in 1982.

Virginia writer Laura Alderson has been an avid caver for the past eight years. She is a reporter for the Roanoke Times and World-News. To find out more about caving, write: National Speleological Society, Cave Avenue, Huntsville, Alabama 35810.

This newsletter is edited for the cave owners of Virginia by the Secretary of the Cave Commission, Evelyn H. Bradshaw, 1732 Byron St., Alexandria VA 22303. Letters to the Editor and articles are welcomed.

The May sun warms our backs as we cross a cow pasture to a clump of trees on a low hill. Beneath the trees, a weathered 20-by-40-foot hole is visible. It is a pit cave — the first I've encountered. For 45 minutes, we talk little, concentrating on rigging our ropes. Then, one man disappears into the hole. Now it is my turn. A safety — or belay rope, as cavers call it — is tied around my waist. Metal rings called carabineers are clipped from my seat harness into a descending rope. Everything is carefully checked. The man below calls "on belay," ready to throw his weight onto the rope and jam my gear to stop an uncontrolled fall. I prepare to descend.

CURIOSITY has sent humans poking back into caves ever since their prehistoric forebears abandoned them. Today, that curiosity is attracting more and more people to the arduous sport of caving. Currently, the National Speleological Society, headquartered in Huntsville, Alabama, boasts some 5,500 members, but probably more than three times that many people venture regularly into caves around the country.

Unlike many other wilderness endeavors, cave exploration cannot always be

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RESTORATION PROJECT AT FOUNTAIN CAVE

In contrast to the large gathering of cavers in 1982 who attended the National Cave Conservation and Management Symposium in the plush surroundings of the Sheraton in Harrisonburg, this fall conservation-minded members of the local caving community came out in full force to camp out and work on cleaning up and restoring Fountain Cave, a former commercial cave that has been badly vandalized over the years. Nearly two hundred people spent the day brushing off graffiti on the walls, epoxying broken formations, repairing an entrance gate, and the like. Since the cave has been known for so many years, there were even some assigned to make careful documentation of any graffiti that might have historical significance.

CAVE OWNERS AND CONSERVATIONISTS HONORED

The social highlight of the weekend was a concert by cave-ballad-singer Dave Foster from southwest Virginia given in the large room of Grand Caverns. During the preliminary part of the program, the Cave Conservancy of the Virginias continued its tradition of recognizing cavers and caving groups for their efforts in the field of cave conservation, and of giving special awards to cave owners who have shown dedication to the conservation and preservation of their caves and to the cause of conservation in general. Honored this year were owners of two West Virginia cave systems (Organ Cave System and Sigaons-Mingo Cave System) and John "Buddy" Penley (whose story was featured in the second issue of this newsletter in February 1982) and Henry "Ted" Graves, owner of Luray Caverns who has played a leadership role in the National Caves Association (it consists primarily of commercial cave owners) and who heads the Commonwealth's Board on Conservation and Economic Development. Ted Graves has served on the Virginia Cave Commission since its creation.

ENDLESS CAVERNS STILL ON MARKET

One of our correspondents reports that Endless Caverns was supposed to be sold at auction to get the banks off the hook and possibly return something for the owners. The bank had been trying without success to sell the property outright for some \$600,000. A fair-sized crowd showed up at the scheduled time for the auction but at the last minute the sale was called off. Potential bidders had had to put \$25,000 to show that they were serious; perhaps this had something to do with the cancellation if there were few if any bona fide bidders.

COMMISSION MEETS JAN. 7 IN ALTAVISTA

The Virginia Cave Commission plans to meet Saturday afternoon, January 7, 1984, in Altavista VA. The meetings are open in case any of our readers would like to attend and meet commissioners and see what we do. We'd certainly like to meet more of you. Where would cavers be without your cooperation and interest? For information about the place, communicate with the Commission Secretary, Evelyn Bradshaw, 1732 Byron Street, Alexandria VA 22303 (703) 765-0669.

CAVE COMMISSION ROSTER CHANGES

In 1983 Robert Bell of Virginia Beach replaced David Hubbard on the Cave Commission, leaving the Commission at least temporarily without a professional geologist. The Commission continues to monitor the situation on Cave Hill in Augusta County VA where things did not go exactly as had been hoped for after the constructive meeting between the Grottoes Town Council and the Cave Commission. Contractors did dump dirt, rocks, and uprooted trees into a sink hole above the caves that could change the ecological situation below and spell a death knell for the tiny endangered critter that lives in Madison's lake. There may have been other infractions of guidelines proposed by the Commission to insure protection of rare fauna.

Why care about tiny creatures that one most naturally dismisses as "bugs"? A striking analogy is that of an airplane. Suppose you came across one with a mechanic methodically pulling out one rivet after another? And suppose when you remonstrated the mechanic shot back, "But it's just one little rivet. Who cares?" Yet obviously all these little rivets are needed to keep Planet Earth functioning as a whole. There's evidence that medical and scientific progress may depend on plants yet to be discovered or developed. Even some familiar species on which we depend may become weakened by lack of a diverse gene pool.

NO TAKERS YET FOR "CATCHING A VANDAL" REWARD

So far there've been no takers for the \$500 reward for information leading to the conviction of a cave vandal under the Virginia Cave Protection Act. As the National Speleological Society also offers a \$500 reward, the total "take" could be a thousand dollars in our state. We'd like to think that vandalism is on the wane and hence no one's been caught in the act. It does not have to be the property owner that goes into court when a case of vandalism occurs; cavers who witness the act can follow through. Can we help you catch a vandal?

SPELEOLOGISTS WATCH OUT FOR HUNTERS

In the autumn when the leaves begin to fall off the oaks is an excellent time to go ridge-walking, a pasttime often undertaken by cavers in areas underlain by limestone in the hope of finding new perhaps spectacular caverns. Since this is also deer-hunting season, there is a certain amount of risk involved. In fact, not so long ago a couple of the editor's friends found themselves looking down the business end of a sheriff's rifle because a worried landowner was suspicious of these two chaps seemingly wandering aimlessly on the hillside. (They had permission to be where they were but she didn't know that and it took them a while to clear themselves as they'd left all identification in their vehicle.)

There probably are some undiscovered caves yet under the hills in the western part of our state. Perhaps even another Luray or Skyline or ??? Members of the Cave Commission know of one quite impressive cave in a location which shall remain nameless--and the cave also may as well be nameless because it is owned by a quarrying firm that probably by now has quarried the cave out of existence. In another instance, construction workers drilling for the Gathright Dam drilled into a cavern whose existence had not previously been known. It's probably still there, filled with water and cement.

Even well-diggers and oil-drillers sometimes find their drills dropping into voids and getting lost in the process. One of the services that the Virginia Cave Commission has provided is to give information on known caves in areas scheduled for oil and gas exploration so as to minimize the chance of losing equipment by drilling into a cave.

NATIONAL SPELEOLOGICAL SOCIETY HEADED BY A VIRGINIAN

Not since Bill Davies of the U. S. Geological Survey was president of the National Speleological Society (NSS) back in the 1950's has a Virginian been at the helm until Paul Stevens of Springfield VA was elected to that post by the NSS Board last March. Stevens has been a dedicated worker for caving projects; for several years he chaired the District of Columbia Grotto which draws membership from the entire metropolitan Washington area and saw the club re-establish itself as the largest caving group in the country consisting entirely of NSS

members. He has co-chaired a project to complete surveying and scientific studies of the Organ Cave System in West Virginia whose over thirty miles of passage put it on the list of the world's longer caves. He was one of the founding members of the Computer Applications Section of NSS in 1980. In the working world he is a Sonar Project Manager with the Naval Sea Systems Command. On the more social side of caving, for two years he was co-chairman of the Oldtimers' Reunion in Elkins, West Virginia; this gathering annually attracts more cavers to one spot than any other caving event in the world and organizing the logistics to make such a party run smoothly is a challenge that Stevens met successfully.

BATS NEED FRIENDS

Bats made the front page of the Wall St. Journal Oct. 27-- and with good press too. The article was based on an interview with Dr. Merlin Tuttle, among a few dozen of the world's scientists who seriously study bat biology and one of the founders of Bat Conservation International.

Did you know that:

- Bats, for their size, are the world's longest-lived mammals, with some species surviving 30 years or more.
- The world's smallest mammal is a variety of bat the size of a bumblebee, living in Thailand.
- One species of bat almost single-handedly pollinates a \$90 million fruit crop in Asia. Bats may be the most important seed-dispersing animals in some tropical rain forests.
- Bats eat bugs by the billions. A single gray bat, an American species considered endangered, eats about 3,000 insects a night.

The rabies threat from bats is slight compared with other wild animals such as skunks, raccoons, and foxes. And even compared with household dogs and cats. Of 28 confirmed cases of rabies in the U. S. since 1963, only five have been traced to bats (dogs were the main culprit) and even some of these bat cases were suspect as to classification.

Cavers in Michigan were promoting construction of bat houses to lure bats away from attics (where they are a nuisance) and into their own homes. Bat droppings (known as guano) make good fertilizer. Many caves were mined for guano prior to the advent of chemical fertilizers. Bat house plans, anyone?

planned in advance. "You can study a mountain before you climb it, with telescopes and cameras. But in a cave, you don't know what the barriers are until you get there," observes Stephen Gates, former director of the Virginia cave rescue network. Even in those underground caverns that have been explored, maps may show pits and climbs, but the physical requirements needed to conquer them are often impossible to calculate.

In caves, each barrier must be crossed twice — once going in, and again coming out — which greatly increases fatigue. Cave temperatures generally reflect the mean annual temperature on the surface. Humidity, though, frequently approaches 100 percent and, inside a cavern, such dampness can send human body temperatures plummeting. Not long ago, a group of experienced rock climbers learned that lesson the hard way. Though warned against doing so by local cavers, the group decided to explore a West Virginia waterfall pit. While on the way out, however, one climber ran into trouble when his mechanical ascending gear apparently jammed. His companions had no spare rope to pull him up, and in the frigid waterfall, hypothermia quickly took its toll on the climber. He died, trying to free himself in his rope seat harness.

Like other outdoor activities, accidents represent the worst aspect of the sport of caving. Between 1976 and 1980, about 20 people died in North American caves, and more than 100 others were seriously injured. Some were cavers who took risks and lost. Others were victims of preventable accidents, such as the West Virginia rock climber.

There are some 200 local caving clubs (known as "grottoes") that are chapters of the National Speleological Society, and each of them assists in regional rescue operations. For the past few years, my husband Bob and I have been members of the Virginia Tech Cave Club, one of the country's oldest underground exploration groups. Though caving is the club's primary activity, we do participate in rescues whenever necessary.

One Saturday night not long ago, we were called by local authorities to New River Cave in Southwest Virginia. Somewhere inside, within the cave's five miles of passageway, lay a bloody college student. Earlier, he and two com-

panions had ventured below ground, bareheaded and wearing only light clothing and tennis shoes. Their explorations came to a sudden halt when the student slipped and fell headlong into a stream. A sharp rock lodged between his eye socket and skull, putting him into shock. After organizing our rescue gear, we joined about two dozen club members and went in after him.

The most experienced members of our group packed the man into a stretcher after bandaging his head, and brought him to the first obstacle: a 15-foot corkscrew drop. While he cried for help, we rigged ropes and pulleys and lowered him. Then, foot by foot, along a giant centipede of hard hats and flickering miner's lamps, we carried him through the passages. Shortly

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after midnight — some six hours after the rescue ordeal had begun — we emerged from the cave, tired and dirty but in time to save the victim's life.

Despite such tragedies, however, we humans pose a much greater threat to caves than the tunnels themselves pose to us. The traffic alone of hundreds of people passing through the underground can destroy fragile rock formations and the habitat of cave wildlife. Caves cannot heal themselves. Below ground, there are no cleansing weather conditions. A stalactite, hanging from a ceiling, might take 100 years to grow an inch, as minerals are deposited one water drop at a time. One muddy human touch can destroy it in a second. "Once it's gone, it's certainly gone for our lifetime," says Phil Lucas, an avid caver for the past 23 years and president of the Virginia Cave Survey. "I've taken people caving for the first time," he adds, "and found that they want to break off a formation as a souvenir. It's nothing malicious, it's ignorance. They just don't realize the impact." Ironically, speleothems (cave formations) torn

from their ageless, protected cave environment, look like ugly, mud-covered shards in the sunlight.

I lean backwards over 125 feet of darkness. At first my feet won't move, but another caver yells "rappelling" to the man below and a wonderful, exciting curiosity takes hold of me. I begin my descent. For 30 feet, I push gently off the wall, dropping a little each time and then penduluming back to the security of the side. The sky becomes a bright gash in a dark ceiling. Then the wall bells out beyond my legs' reach and I swing free like a spider on a web. The pit swallows me. I am in a dark, silent cathedral, my headlamp sweeping across great rocky walls. The air smells musty, like a cellar. In this secret chasm, I am as anonymous as a fallen leaf. But the rope and my body join with reality. Long before I reach the floor, I have fallen in love with the sport of caving.

New River Cave will always be special to me. It was the first cave I had ever entered, and on that 1974 outing, I met my husband, who was on a cave mapping party at the time. I was a newspaper reporter, covering a detention home's wilderness outing. Caving? Why not, I thought — anything for a story.

Our trip leader probably chose New River because it is what's known as a "sacrifice cave." Its outer rooms are spray-painted with graffiti and heavily littered. The stumps of once beautiful stalactites hang desolately from the ceiling. Nevertheless, New River intrigued me. I was attracted to its craggy subways, its great 150-foot-long and 80-foot-high main room. Farther inside, I saw supernatural-looking formations, some wet and glowing.

Nature doesn't compromise when it creates caves. Beginning about two million years ago and continuing up to the present, carbonic acid (water mixed with carbon dioxide) dissolved its way through limestone to form most of the caves that exist today. Inside, a variety of strange shapes remained — shapes that have taken on such human names as "wedding cakes," "flowers," "bacon rind drapery," "popcorn" and "soda straws."

In the United States, there are some 20,000 known limestone caves and the list grows longer with each expedition.

Some run horizontally only a few hundred feet. Others, like a cave in Wyoming, go some 1,400 feet below the surface. Kentucky's Flint-Mammoth Cave System — the largest in the world — has over 200 miles of passageway, most of which lies beneath Mammoth Cave National Park. Missouri has more than 3,000 caves alone — more than any other state. Virginia is second with some 2,500 underground caverns. Most of these are located on private land, and experienced cavers guard their relationships with landowners carefully.

Why are some people attracted to caving? "Part of the fascination," notes Gates, "is that even a casual observer can make contributions to speleology. It's still a young science." Adds Don Anderson, a 43-year-old systems analyst who began exploring caves 30 years ago as a Maryland teenager: "It's the ultimate mental and physical avocation. When you go rock climbing outside, you have the rock and the view. But in caves, there is so much more — the dark mud beneath your feet; slick, watery walls; a ceiling pressing on your back or soaring hundreds of feet beyond your lamp's reach.

The cave had everything we had hoped for — mud banks, deep pools, spectacular formations, nice climbs, even some breakdowns (boulders that have fallen from the ceiling or walls). We reached a new room, and I saw the balcony passage first: a big black hole far above us. With a little searching, I found a way to climb up to it. After alerting the other members of my party, I headed down the dark, low tunnel. Gradually it shrank, and I resorted to moving on my hands and knees, then to belly crawling. The sounds of the other people faded out.

It was New Year's Eve, 1965, when John Holsinger, a cave biologist at Old Dominion University, found a bottle with a note in it in Virginia's Endless Caverns. Some 20 years earlier, members of the New York Explorer's Club had left the note, challenging its finder to take the bottle to the undiscovered end of the cave. Holsinger did just that. "It turned out that the end of the cavern was only 100 feet or so further up-

stream," he recalls.

One of the country's foremost underground researchers, Holsinger has discovered more than 100 new species of cave life during the past two decades. Because the country's subterranean habitat is so unique and isolated, the wildlife that inhabits it has made some extraordinary adaptations. These troglodytes (animals that exist only in caves) live in complete darkness, subsisting on minute food particles washed in by streams. "Any time an animal loses its eyesight and pigment and its body changes shape, it is evolutionary," notes the muscular, 47-year-old scientist. "The young are born larger, there are fewer of them, and true cave species live much longer than their surface counterparts." There is evidence, says Holsinger, that one crayfish found in an Alabama cave might live up to 100 years. The average life span for a similar creature above ground is about one year.

Holsinger's specialty is a small crustacean called an amphipod. Not long ago, he identified a new species living in a 700,000-year-old cave in Alberta, Canada. "It looks like a little shrimp, a quarter-inch long," he says. Until now, most scientists presumed that such forms of life had been completely destroyed during the last Ice Age. "These things probably survived deep beneath the glaciers," he adds. "Finding this particular species provides us with some clues as to the extreme conditions some forms of life can exist under."

Bats are, of course, the most renowned underground cave dwellers. But according to Radford University biologist Virginia Tipton, they are not always as widespread as is commonly believed. Tipton, who monitors bat populations in the Southeast, notes that almost all of the nation's two million or so gray bats hibernate in only nine caves. Major populations of the endangered Indiana bat inhabit six caves and one abandoned mine, she says. Tipton monitors endangered bat populations only once every two years. "You go in with as dim a light as possible," she observes. "The slightest disturbance could be very dangerous to the creatures." In winter, such a disturbance could cause the bats to burn up fat reserves too quickly. In summer, it could

cause mothers to drop and then abandon their young.

The tunnel became a small hole; I put my head through it. Soft wind, a sign of further passage, swept across my face. I was on the lip of a giant funnel the size of a roller skating rink. I lifted my head to shine my lamp across the pit and heard the sounds of tiny rock formations shattering. They cluttered up the hole far too much to have allowed other cavers through. Virgin passage! The first I had ever discovered. "It goes! It goes!" I yelled down at my companions.

Most cavers agree that the ultimate experience is to discover a tunnel or room where no one else has ever ventured. They call it "virgin passage." "To be the first person to see something that was created a million years ago is a mind-blowing experience," says Don Anderson.

In recent years, 17 states have adopted laws to punish cave vandals. Fines range anywhere from \$5 to \$10,000 and a year in prison. In addition, Virginia, West Virginia, Texas, Georgia and Maryland now outlaw the sale of cave formations. Needless to say, however, most laws are difficult to enforce. As a result, two years ago, a group called the Virginia Cave Conservancy began offering a \$400 reward to anyone who provides information leading to conviction of cave vandals. "It was time for something to be done," says John M. Wilson, leader of the group. "There are a few individuals who constantly steal from caves. Some try to sell formations, others are involved in rock collecting."

The best advice for anyone who wants to try caving is to contact one of the country's 200 grottoes. Each chapter offers a variety of programs for novices on safe caving practices. "Every cave," says Tom Rea of Plainfield, Indiana, a former president of the National Speleological Society, "has something nasty about it — a crawlway or a tight spot or a pit. But I'm in there with people I choose to be with. And I'm not coming out until I'm ready." □

NOTE: As reported on page 2, the reward mentioned above has since been increased in amount.