

18

24

31

Features

The Tech Side of Public Safety Diving

By Mark Lonsdale

As sport divers expand the concept of what is recreational, public safe-ty dive teams may need to rethink what challenges they may face in underwater recovery operations.

Cave Controversy By Bernie Chowdhury

Being one of a few successful cave rescues seems like it should have been a joyous occasion. Instead, the incident sparked a firestorm of ill feelings that burn to this day.

Black Water: Search and Recovery with Challenges By Walter "Butch" Hendrick

Proper planning and well-rehearsed communication codes can lighten the tension that fills searches for evidence and victims in inky black

Black Water: Communicating with Zero Visibility By Andrea Zaferes

36

39

The importance of a preplanned contingency black water communication procedure including a black water communications primer.

Finders Weepers, Government Keepers By Peter Hess

Divers' rights to recover artifacts are coming under fire as tough regula-tions all but eliminate the age-old admiralty law of finds, and even more draconian measures may be on the horizon.

hin

International listing of Dive Shops

49

An alphabetical listing of where to get Immersed around the world.

Advertiser Index

62

.A. Sheriff's divers rush to challenging underwater recovery operations.

THE TECH SIDE OF PUBLIC SAFETY DIVING, PAGE 18

Nearly 90 percent of sport technical divers have not considered preplanned contingency black water communication procedures, even though they enter wrecks and caves where blackout and siltout conditions can easily occur. The cover photo, taken by Pete Nawrocky, shows a black water diver secured to a tether line, an important part of communication procedures.

BLACK WATER, PAGE 31 AND 36





Lady Elgin, now resting at the bottom of Lake Michigan, is being salvaged by Harry Zych, who received protection by obtaining possession of the wreck from the insurance company that held its title.

FINDERS WEEPERS, GOVERNMENT KEEPERS, PAGE 39

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Departments

5
ŀ
ı

LETTERS TO THE EDITOR

7



THE WHISPERED WORD

Happenings in the Diving Scene

8



EXPLORER

Air Pirate Gary Larkins

By Peter Hess

10

Some 60 vintage warplanes are on display or in the air thanks to Gary Larkins, who has faced jail, fines, crushing underwater depths, jungle heat and Arctic temperatures in his quest to preserve aviation history.



TECH-SPEC AND INDUSTRY NEWS / NEW PRODUCTS

BC's for Technical and Safety Divers

By Dennis Bulin

14

Public safety teams as well as cave and other technical divers all had a say in the design of three new vests from Zeagle Inc. that can be rigged for the toughest of diving situations.



RIGGING FOR SUCCESS

Black Water: Rigging

By Walter "Butch" Hendrick and Andrea Zaferes

32

Considerations for black water diving



BOOK REVIEW

Encyclopedia of Underwater Investigations

45

Cpl. Robert Teather's book shows why the Canadian Mounties have such a reputation for professional excellence.



TECH DIRECT

Worldwide Listing of Dive Centers and More 47



TECHNICALLY DESTINED

Off Beaten Paths: Cozumel and Fiji

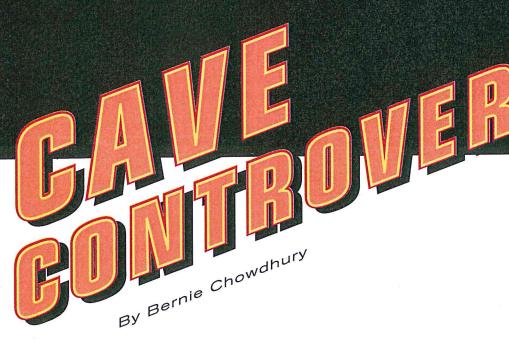
By Bob Sterner

52 and 58

Thousands of tourists pass through dive meccas of Cozumel and Fiji totally unaware of technical diving projects that are extending the understanding of ancient and natural history.

A Corsair waiting to be brought back into the air.

EXPLORER: AIR PIRATE GARY LARKINS, PAGE 10



f spirits could talk, 338 cave divers who had once been among the living would surely have screamed on Aug. 6, 1995: "Go no further; prevent your death!" Sadly, no such admonishments penetrated the rock walls or the muddy, cold water of Little Stream Cave near Tobermory, Ontario. There, Ric Browning — a fully trained and experienced cave diver - violated the most basic rule of cave diving by not maintaining a guideline to open water (see "Cave Diving - The Rules," page 29). This led to a nine-hour rescue effort involving many government agencies and several trained Canadian cave divers. If bookies took bets, the odds would have favored the cave by a huge margin. Successful cave diving rescues could probably be counted on one hand (see "Other Successful Cave Rescues," page 28).

But Browning beat those odds. His wife and three children have their loved one back. A happy ending, right? Well, not quite. Although Canada's Governor General awarded one Star of Courage, one Medal of Bravery and one Certificate of Commendation to the rescuers, Browning's nine-hour ordeal sparked a firestorm of controversy. Questions have been raised about the conduct of the dive, and there have been accusations of publicity seeking and charges that the rescuers lied. It led to the only contested Medal of Bravery in Canada's history and even raised questions

about the validity of cave diving training. So what really happened?

Ric Browning's wife, Sandra, said, "It all started as a weekend of fun open water diving. Naturally the cavers in our group were not to be satisfied with that." The group consisted of Ric, Sandra, Dr. David Sawatzky and his wife, Dana. Sandra and Dana are open water divers, while Browning and Sawatzky are both seasoned cave divers.

n Saturday, Sawatzky and Browning climbed 25 feet / 8 meters above Lake Tobermory to take a preliminary look into the entrance to Little Stream Cave. Sawatzky had been told that the dry passageway would lead to a sump, a body of water impeding further progress to dry cavers. What they found confirmed the reports. It looked like a promising dive. On Sunday, they returned to have a look at the submerged part of the system. Making their way through 200 feet / 61 meters of dry passage and then another 100 feet / 30 meters of mostly flooded rift passage, they arrived at the sump, where Sawatzky donned a tank with Y valve. He planned to dig into the fine gravel restricting the bottom of the sump to create an entrance into what was hoped would be an underwater cave system. And then came the fateful decisions that are still questioned today.

"I elected not to use the line reel as I could ascend directly to air from the dig site and there was nowhere else to go," Sawatzky wrote on Aug. 6, 1995 — the day after the incident — in a draft of an article that would appear in Canada's Diver magazine, for which he writes a regular column.

He dug through the restriction, then backed into a passage "...approximately two feet high and three feet wide....I could feel with my legs that the passage closed down and made a tight descending corner in solid rock. It felt too small to be passable. I returned to the surface and reported what I had found to Ric. He elected to have a quick 'look' at what I had found and mentioned that he also wanted to check out a possible opening on the opposite side of the sump."

rowning has had time to think about his action now, two years after the ordeal. "If anyone's asked you to throw on a tank and look under the dock for a lost ring, that's what I did. It was a walk in the park. David gave me a verbal description and I went. He told me there was no place to go, that I would hit a restriction." What about the No. 1 rule of cave diving: Always run a continuous guideline to open water? "I had no lines at all. My belly pouch was left at the cave entrance." So lines weren't even an option, they were back at the entrance, 300 feet / 91 meters away. And before the dive, he was assured by David that "there was nowhere to go." Is this the sign of recklessness or incompetence?

Veteran Canadian cave and wreck diver John Reekie assesses the divers' skills. "Would I cave dive with David? Yes, I would and have. Would I trust my life to David? Yes. David is a very competent cave diver for the systems we have in

A successful cave rescue seems like cause for a joyous occasion. Instead, the incident sparked a firestorm of ill feelings that burn to this day.

Canada. In fact, as far as Canadian cave systems are concerned, David is probably the most experienced cave diver. He was a self-taught cave diver and was probably cave diving for five to six years before getting trained, which I insisted he do. David had a background in dry caving, and he adapted his speleological experience to cave diving in the tightly restricted, muddy systems we have here in Canada. He created his own system that worked in our environment. I've never dived with Ric, but they're two peas in a pod: both dive together all the time and have been cave diving explorers for a long time."

Browning donned Sawatzky's tank and regulator and backed into the system, just as Sawatzky had done. But Browning discovered a way to go somewhere. He makes an analogy: "Imagine a pitch-black room that you go around and around, and then you come to a door that's slightly open, and you slip through without realizing it. When you go around the room again, you're on the inside, and you don't know it. Then, when you do know it, you can't find the way out because the door's at a weird angle." Once inside the "room" Browning's buoyant drysuit floated him into an air pocket. "If I had had a guideline, I could have gotten right out. I knew where I was, but couldn't risk swimming for the opening once I found the air pocket."

There is no experience like the blackness of an unlighted cave. With your eyes wide open, you stare into the heart of darkness. Usually, this is experienced by cave divers and speleologists as part of a planned training exercise that leaves a dramatic impression about the critical nature of lights. Light failure being inevitable, explorers carry many of them. For being left stranded in a dark cave system, with no sense of time, you are faced with a blackness and desolation usually

Incident Report

On Aug. 6, 1995, Ric Browning and David Sawatzky, M.D., set out to explore a previously undived water-filled portion of a cave at Tobermory, Ontario, approximately 300 feet / 91 meters from the cave entrance. Sawatzky conducted the first dive to dig into the loose gravel at the bottom of a pool of water 12 feet / 4 meters deep to see if a passage could be opened up for divers. Because he would be digging in open water, Sawatzky did not use a guideline. He backed into a narrow passageway and was in constant touch with walls on either side of him, as well as the ceiling and floor. He felt around with his feet and determined that the passage narrowed to the point where a diver could not pass.

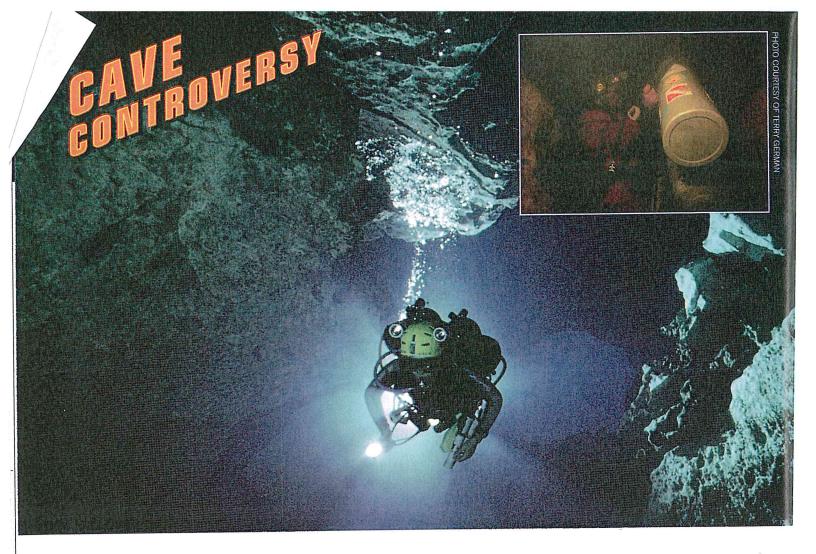
Sawatzky surfaced and described the situation to Browning, who decided to go in to have a look, also without a guideline. He wore a drysuit to protect him from the 38 degree F / 3 C water, but no weight belt. This was a practice common for the dive team when exploring shallow sumps that usually led only a short distance underwater to further air-filled passageways. Browning backed into the passage, then suddenly found himself floating upward as the result of his buoyancy. His squirming stirred up sediment, limiting his visibility as he floated into an airbell. Without a guideline to open water, he could not find his way back out. He was stranded.

"I elected not to use the line reel as I could ascend directly to air from the dig site and there was nowhere else to go." David Sawatzky





"Not to begrudge anyone their roles in the rescue but David was the one who actually went in and got me. He risked it all." Ric Browning



reserved for the worst nightmares. But in a cave you can't escape by waking up. The darkness forces you to stare deep into your soul. And into the very essence of your sanity.

Browning can now calmly relate that while waiting, lost, inside the cave, "I was pissed off, mad. Mad at myself mad at David because he was taking so long. I screamed curses at the walls and sang songs stupidly in the dark. But I knew he would be there." He also knew that Sawatzky was his only hope of getting out alive: "Because of Canadian regulations, commercial divers here are prohibited from entering caves because they can't stay tethered, can't get surface-supplied gas, diver-to-surface communication, etc. Even police divers can't make cave rescues. Other cave divers have to do it," Browning said. He passed his time using his tank to periodically bang on the cave walls, in the hopes that his "signal" could be heard. His trust in Sawatzky was absolute.

What kind of a diver was he trusting? Sawatzky's instructor, Lamar Hires, remembers David among the 600-plus cave divers he has taught since 1984. Hires lives and breaths cave diving. The former training chairman of the U.S.-based National Speleological Society, Cave Diving Section, Hires now chairs the NSS-CDS board. He recently bought Dive-Rite Manufacturing Co., which specializes in cave and technical diving equipment, after being vice president since the company's inception.

"Yeah, I remember him," Hires recalls in his soft-spoken Florida accent. "I like David, and we still maintain contact. Although lots of people have claimed he's arrogant, I've never had a problem with David. When he came down for training, he'd already had about a hundred cave dives under his belt in the Canadian systems. I think he came down with the attitude that he was going to teach me some things, instead of the other way around.

His techniques might have worked in the Canadian cave systems, but they were lacking in the large solution caves we have in Florida. Once he understood that, he was really open to learning."

nce it became obvious to Sawatzky that Browning was lost, he left the system to get another tank and regulator. Sandra recollects, "When David came out of the cave without my husband in tow, several unbelievable emotions went through me. Fear of being left alone, fear he was dead and the most unbelievable pain." Of re-entering the restriction, Sawatzky wrote, "I used my weight belt to secure the end of the dive line as there was no place to tie it off. I backed through the restriction and carefully felt the tight passage behind me, discovering to my surprise that it was possible to squeeze through. I backed in until my legs were out into wide open cave and felt around. There was a small amount of air up by the

The importance of site specific training becomes evident in this simple comparison between the clear and spacious Florida caves (large photo) where **David Sawatzky** received his official cave training and the narrow, muddy caves of Canada (insert).

The Awards

The awarding of Canada's highest civilian decorations for bravery was fraught with bitterness.

David Sawatzky's commanding officer asked Terry German for a sworn statement about the rescue, which resulted in Sawatzky being recommended for a Medal of Bravery, Kim Martin said. The girlfriends of German and Martin recommended them for awards. Martin was awarded a Medal of Bravery, an honor that was contested by Sawatzky and Ric Browning and their wives.

Martin notes bitterly, "I never asked for the medal. I never wrote an article about the event or made a big deal about it. David and Ric did. The military asked Terry and me to back up David's recommendation for a medal, which we did. We basically helped David get the medal; then, he turns around and contests mine. A Medal of Bravery has never been contested in our nation's history! How do you explain that to your family and friends? It's humiliating. This thing has been the worst thing that's ever happened to me. If Browning and Sawatzky ever need my help again, I'm going to get as far away as possible."

Martin said a showdown over his medal was averted by the awards committee by bumping Sawatzky's award to the higher Star of Courage. "This left my awarding of the Medal of Bravery as it stood. At the ceremony in Ottawa, things were very uncomfortable because the committee knew that there was bad feeling between David and myself, so they had to make sure that we were not seated together or in close proximity the whole weekend. It was awful."

Three decorations for bravery were awarded for the rescue. These decorations "express symbolically the nation's gratitude to those people who risk their lives to save or protect others, defying in the process the instinct for self-preservation." The Star of Courage is "awarded for acts of conspicuous courage in circumstances of great peril." The Medal of Bravery is given "for acts of bravery in hazardous circumstances." Sawatzky was awarded the Star of Courage, Martin received the Medal of Bravery, and German received a Certificate of Commendation.

roof, so I knew that Ric had gone through. It had now been two hours since Ric had started his dive and his tank would have lasted at most 45 minutes....I knew that Ric was either dead (most likely) or in an air pocket where he could probably survive for several hours....It was not safe for me to proceed with the equipment I had, so I elected to leave and get the appropriate gear and some help."

Police, Coast Guard, and Parks Canada were called and extra equipment was donated in short order by a local dive shop. By chance, two other highly skilled Canadian cave divers, Kim Martin and Terry German, were in the area exploring another cave system. (See "Explorers: Canadians Terry German and Kim Martin." Immersed, Fall 1996. and "Exploring a Horizontal Mount Everest: The Leopard Frog Cave System," Immersed, Spring 1997.) Even though Martin and German had just completed a two-hour exploration, they readily agreed to help.

It was decided that Martin should make the first attempt to find Browning. He said he searched for "13 minutes, in zero visibility [and] could not find room to negotiate a passage he had located." Without the presence of a line from Browning's previous dive, he could not be sure he was in the correct passage. Martin surfaced, then Sawatzky went in again, despite stress and fatigue. But how far in had Martin gone? He says, "I went into the restriction, but couldn't find a way through." Sawatzky offers this opinion, "There wasn't a physical reason [Martin] couldn't go through the restriction. He just hit his comfort wall and came back out. I have no problem with him doing that. It's the right thing to do and it's admirable. What I do have a problem with is his claiming to have done this daring rescue."

erman counters that he and Martin never claimed to have made the rescue. "But we were an important part of it," he adds. Sawatzky refers to the article about Martin and German that appeared in *Immersed*, Fall '96, which did not state that Sawatzky was the one who brought Browning out of the cave. It has led some to accuse Martin and German of lying about their roles in order to build up sponsorship for their expeditions and documentary films.

Sawatzky went in and found Browning — cold, tired, mad that it had taken so long to find him — very much alive. But Browning couldn't exit the cave just yet. Sawatzky handed him the guideline leading to open water, and told him that he would be back with another tank of air. Left alone in the darkness again, he knew that rescue was only moments away.

German recalls that Sawatzky surfaced and shouted, "He's alive! He's in an air chamber. Do you realize a rescue like this has only occurred three times in history?" Minutes later, after nine hours, Browning left the cramped walls of the cave for the GOTTE STATE OF THE BROWN BROWN

wide-open Canadian sky and countryside, finally breathing fresh air. Looking back, he said, "[David] was under tremendous stress. He could have left it for another day. After all, everyone thought I was dead. He wasn't just a cave diver when he went in to get me. He didn't know where he was going, or what he would find. I think he crossed the line: he risked his life to get me. Not to begrudge anyone their roles in the rescue, but David was the one who actually went in and got me. He risked it all."

Sawatzky's article, along with newspaper accounts, and a television appearance led to accusations that he was seeking publicity. Martin and German felt that he was not duly crediting their involvement. Several others prominent in the cave diving community — who asked to not be mentioned in this article — said that Sawatzky is arrogant, and this arrogance was apparent throughout his article in *Diver*. Even Browning said he didn't like the story. "I don't like the tone and the manner in which it was written. I can't really put my finger on it. Someone else should have written it. Or, it should have been

written in the third person."

Because he is both a medical doctor and a military officer, Sawatzky is used to having authority. But as one well-respected caver says: "David and his buddy screwed up. Yes, David went in and got the guy, but when you've created the problem in the first place, why make yourself out to be the hero when you fix the problem? But that's David. And his focus was never 'Wow, we screwed up, that was a close one,' but more like 'Hey, I did only the third successful cave-diving rescue in history.' Wrong focus."

In his "Diving Medicine" column in Diver, March 1996, Sawatzky took issue with a letter written by Keith Olsen. "When I first heard about the incident, the first thing that came to mind was 'Idiots'!" Olsen wrote. "After reading in one of the major papers that Dr. Sawatzky was involved, I must say that I was appalled. As Dr. Sawatzky points out, quite clearly, in his article, he is supposed to be an expert in this field. I have just a couple of questions: 1) How could an expert allow such a stupid error to happen? 2) Throughout the article, Dr. Sawatzky emphasizes that his buddy made all the mistakes. Did Dr. Sawatzky make any mistakes?"

In reply to Olsen's letter, Sawatzky maintains that he wanted to publicize the incident A) to let others know what happened, B) to remind all divers, including cave divers, how easy it is to get into serious trouble, and that the experienced should not become complacent, C) because it was news, and D) "to help people understand what we were doing. To ex-



Other Successful Cave Rescues

While those involved in the effort thought that Ric Browning's was only the third successful rescue of a cave diver, there have been more.

Steve Gerrard, now an instructor at Mexico's Aquatech / Villa Derosa, led cave divers to safety on two occasions. He and John Orlowski, both cave diving instructors in Florida at the time, were summoned to a cave in the state of Falcon in Venezuela in July 1991. There they rescued Gustavo Badillo, who had been trapped for 36 hours in an air pocket. In October 1990, Gerrard pulled a nearly unconscious Mickey Chambers from an air pocket in the Ho-tul Cenote in Quintano Roo, Mexico. Unfortunately, Chambers's buddy, Mike Ripley, drowned.

Cave diving veteran Woody Jasper's rescue of two divers in May 1990 is perhaps the most well-known rescue; it was re-created on CBS television's "Rescue 9-1-1" show. A third diver drowned in that incident at Otter Spring in north-central Florida.

There no doubt have been other rescues that did not command the international attention of these incidents, and those divers remain quietly grateful to be alive.

plain it in enough detail so that they would see that although we were doing a very high-risk activity, we were not suicidal, we took reasonable precautions, and we were being quite cautious and conservative in our approach."

Pete Butt, the current NSS-CDS training chairman, comments, "The cave diving rules - typically called the Rules of Accident Analysis — are so basic that we'd like to think the first five apply to all cave diving situations. If you take chances with them, there are consequences. That being said, for guys with the experience, who are out there exploring, they're on the pointy end of the stick. If they choose not to follow the rules, or if they modify them, that reflects their experience and personal choices and can't necessarily reflect back on the training they had, provided the training was proper. It doesn't take away the validity of training and accident analysis."

Browning has stated that if he'd had a guideline he would have been able to get out of the system without a problem, as he did when a line leading out of the cave was brought to him. Yet in a recent phone interview, Sawatzky stated, "When you're in the type of system that I was in, you back up, feel ceiling, walls, floor surrounding you and you totally familiarize with it. When you're in constant touch with all of the walls and it doesn't branch out, you don't need a guideline."

This sounds a lot like the wreck diving method of "progressive penetration," where a wreck diver goes only one body length into a wreck and thoroughly familiarizes himself with it before penetrating further — on another dive — and then on the next dive only goes in two body lengths and so on. Sawatzky remarks, "I don't believe in that. I know a guy with hundreds of hours of wreck diving. He never ran a line and one day he silted out inside a wreck. He's dead." Sawatzky fails to see the connection, but when Browning is asked whether he'll run a guideline in the future, he responds with an emphatic, "Yeah, I sure will!"

Cave Diving Rules

In the late 1970s, U.S cave diver Sheck Exley conducted accident analysis on cave diving fatalities in Florida. The work was published by the National Speleological Society's Cave Diving Section under the title Basic Cave Diving: A Blueprint for Survival in 1979, and the NSS-CDS has reprinted the book numerous times since then. Exley, looking for patterns in fatal dives, found 10 key factors. Exley used the knowledge gleaned from this analysis as the cornerstone for the first sanctioned cave diving training conducted by both U.S.-based cave diving training organizations: the National Association for Cave Diving, Tallahassee, Fla., and the NSS-CDS, Branford, Fla. Cave diving courses still teach the rules Exley formulated, and his book is still required reading for cave diving students. Here, briefly, are Exley's 10 basic rules:

- Always run a continuous guideline from open water throughout the dive.
- Always use no more than onethird of your air supply going into the cave, and save two-thirds for the exit and an emergency
- 3. Do not dive on air below 130 feet /40 meters in caves.
- Avoid panic by building up experience slowly and being prepared for emergencies.

- 5. Always use at least three lights per diver.
- 6. Always use the safest possible scuba.
- 7. Avoid stirring up silt.
- Practice emergency procedures with your partner before going cave diving, and review them often.
- Always carry the equipment necessary for handling emergencies, and know how to use it.
- Never permit overconfidence to allow you to rationalize violating recommended cave diving safety procedures.

More recent accident analysis, conducted after cave diving training was initiated, has led to slightly different emphasis of these rules, according to Pete Butt, NSS-CDS training chairman. The NSS-CDS places priority on:

- A. Training: Be trained for the cave dives you seek to undertake.
- B. Always use a continuous guideline to open water.
- C. Use no more than one-third of your air supply going into the cave, and save two-thirds for the exit and an emergency.
- D. Don't dive deep on air.
- E. Mechanical: Always use at least three lights and have a redundant gas source. ■

Warning signs such as this safety message bluntly wave off inexperienced divers from caves.



STOP

PREVENT YOUR DEATH! GO NO FARTHER.

FACT: More than 300 divers, including open water scuba instructors, have died in caves just like this one.

FACT: You needed training to dive. You need cave training and cave equipment to cave dive.

FACT: Without cave training and cave equipment, divers can die here.

FACT: It CAN happen to YOU!

THERE'S NOTHING IN THIS CAVE WORTH DYING FOR! DO NOT GO BEYOND THIS POINT.

COURTESY OF THE NATIONAL SPELEOLOGICAL SOCIETY