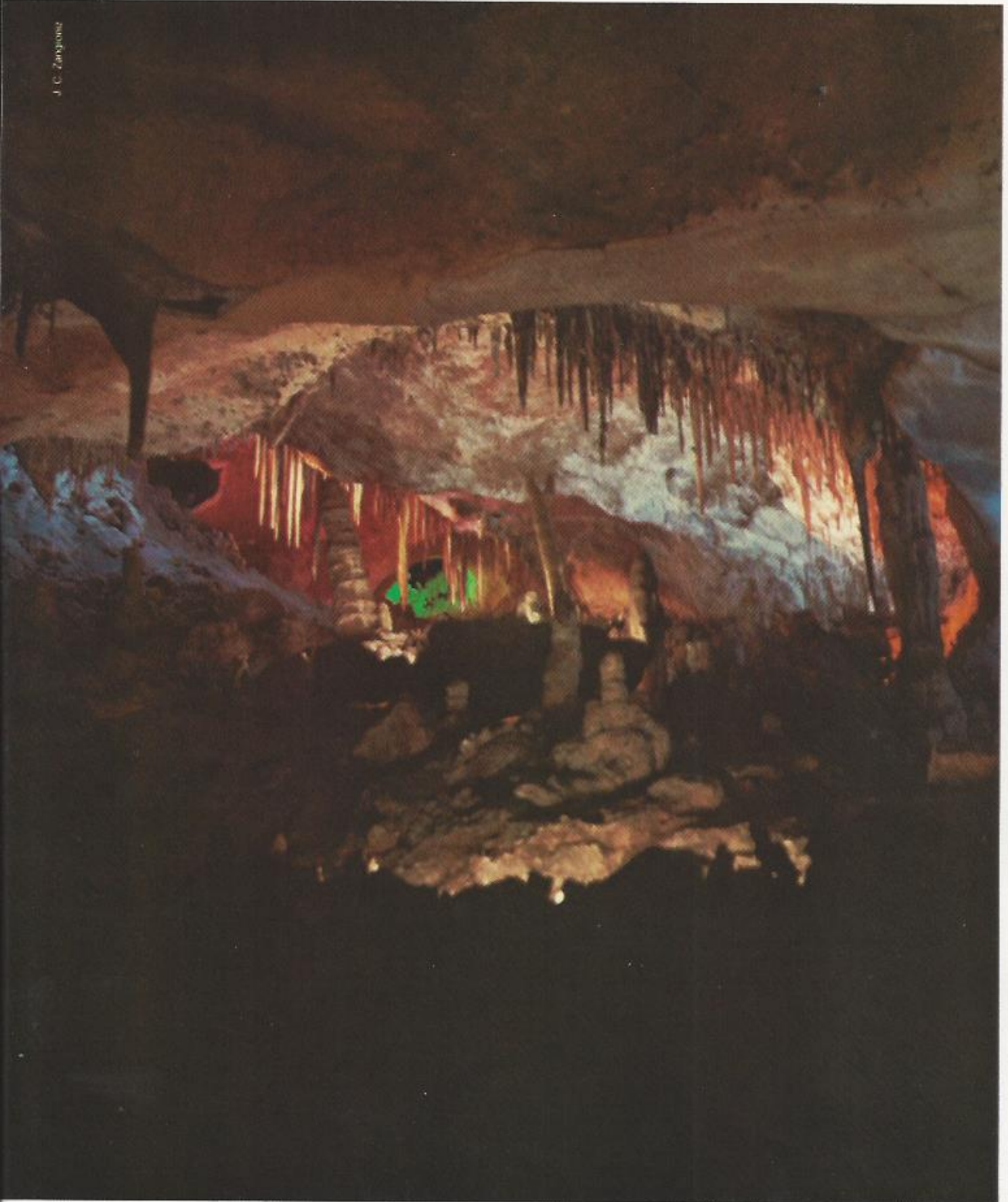


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BUTLER AVIATION'S  
CORPORATE INFLIGHT  
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# SPELUNKING

BY HENRY M. HOLDEN

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**A special kind of adventure awaits cave explorers willing to leave behind their daylight world and immerse themselves in the universe of underground wonders.**

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He was short, naked, and frightened beyond anything he had ever experienced. He was running, bent over to present a smaller target. Then it struck. The stone-tipped shaft buried itself in his back. The pain blinded him. He stumbled, fell, and rolled under a bush. Later, the same pain that had caused him to black out revived him. It was dark, and his enemy was gone. As the life oozed from him, he dragged his dying body back to his cold, dark cave. His companions soon noticed the stillness of his body and piled earth and refuse on him, where he lay.

The tribe moved on, probably in a never-ending search for better hunting grounds. The passage of eons helped those prehistoric remains disappear practically without a trace.

Ninety centuries later, Russell Cave, near Bridgeport, Alabama, is again filled with life. Today's visitors stand several feet over the ancient cave dweller's makeshift grave, for over the centuries, tons of earth and silt continued to accumulate and preserve the hunter's remains.

The silent blackness has a profound effect on the intruders. Its magical drawing power beckons them to go deeper into the seemingly endless abyss.

This cave has no dangerous sulphurous fumes or hissing, fire-breathing serpents once believed to inhabit the underworld. Its air is cool, fresh, invigorating, and filled with excitement.

Stark, white beams from carbide lamps stab the inky blackness. The narrow opening the intruders entered has widened into a commodious chamber of rock. They tread carefully, advancing with caution and awe behind their sabers of light.

Magnificent stone terraces open before them, their limestone walls slick with moisture. Normal daylight no longer ac-

companies them. They have ventured beyond its friendly reach. Without lights from their helmets, they would be immersed in total, disorienting blackness.

Deeper into the blackness they probe. The chamber narrows and around a turn, it opens into an enormous, vaulted cathedral. Stalagmites rise from the floor and resemble limestone Christmas trees. Above each one, drip stalactites, sprouting fresh, moist tassels of stone. The beams of light crisscross the chamber, revealing coral-like calcite projections and glossy helictites, glistening like crystal worms frozen in time. Heligmites lay like stone snakes and lepidopterous shapes in pale yellows and pinks seem to fly through the moving beams.

Their quest is over; these spelunkers, sobriquet for cavers, have found their "Holy Grail."

Spelunking (from the latin *spelunka*, for cave) is the art and science of cave exploring, and spelunkers come from all walks of life. They are doctors, lawyers, corporate executives, clerks, men, women, young and old, all looking for the special kind of adventure cave exploring offers. They are a rugged bunch, willing to subject themselves to chilling temperatures, ice-cold water, narrow crawlways, mud, bats, and bugs to explore the underground wonders that have waited eons in silent beauty.

These cave crawlers have been described as "underground alpinists," and many will describe their experiences as mountain climbing on a moonless night. Others say it is like being inside a huge snowball, surrounded by cold, white, geometric patterns.

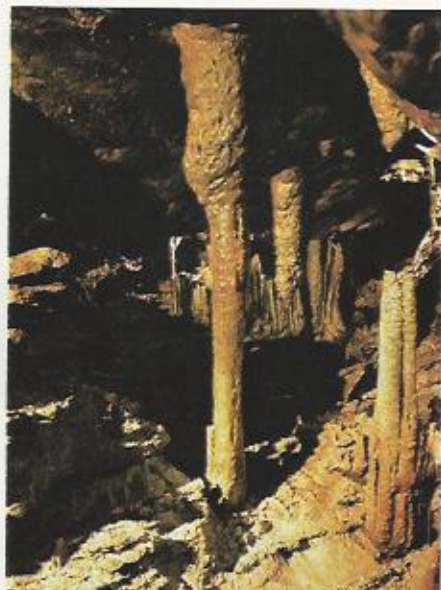
Spelunking is a relatively new sport. It was organized by a dedicated group of amateurs, in England, in the 1890s. It was

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*Artificial illumination highlights formations in the Cave of the Winds, at Colorado Springs.*

## SPELUNKING

Continued



Oregon Economic Development Department



FPG International/Peter Barney

At top, formations of the Oregon Caves in the Siskiyou National Forest. Below, the entrance to Kentucky's Mammoth Cave.

formalized into The British Speleological Association in 1936.

Americans followed suit in 1941, by forming the National Speleological Society. In America, however, cave exploring didn't begin in this century. It predates the founding of our country. History records that the father of our country was an early

cave explorer. George Washington, as a young surveyor, explored a cave in Virginia, later named for him. He also explored Madison's Cave in Virginia and left his signature carved in limestone. It's dated 1748.

The father of American spelunking was another famous American president. Thomas Jefferson was also a trained surveyor and was the first to discover the fossil bones of the large, long-clawed ground sloth, extinct for more than 8,000 years.

Caves have been around since the beginning of time and have been used for animal as well as human habitation and shelter. The first human cave dwellers are believed to have occupied the Lascaux Cave, in France, some 30,000 years ago.

Caves have provided refuge for moonshiners, hermits, runaway slaves, train robbers, and Mark Twain's Tom Sawyer. They served as clandestine dance halls for Pennsylvania Dutch children in the late 1890s as well as candle-lit ballrooms in the Antebellum South. The artifacts and fossils that have been left behind are just some of the magnetic attractions that draw cavers.

While spelunking attracts biologists, geologists, and other scientists, they are in the minority. Most cave crawlers are there for the adventure, the thrill of discovering rare crystal formations or to photograph a thin, hanging drapery of stone.

Most serious spelunkers study cave structures and their formations. They have a knowledge of chemistry, physics, meteorology, and hydrology. Some even study paleontology and archaeology.

Every state except Rhode Island possesses known caves and the National Speleological Society has identified more than 11,800 caves in the United States. Most have been at least partially explored and they believe perhaps at least as many are yet to be discovered.

American caves are classified into three basic categories, with most having been formed tens of millions of years ago.

Lava caves, found from Oregon to New Mexico, were formed by the outflowing of molten rock from active volcanoes. This flow formed sinuous tunnels and blister-like grottos.

Sea caves, found along the West Coast, were formed by wave action on the ocean cliffs and carved by blowing sand.

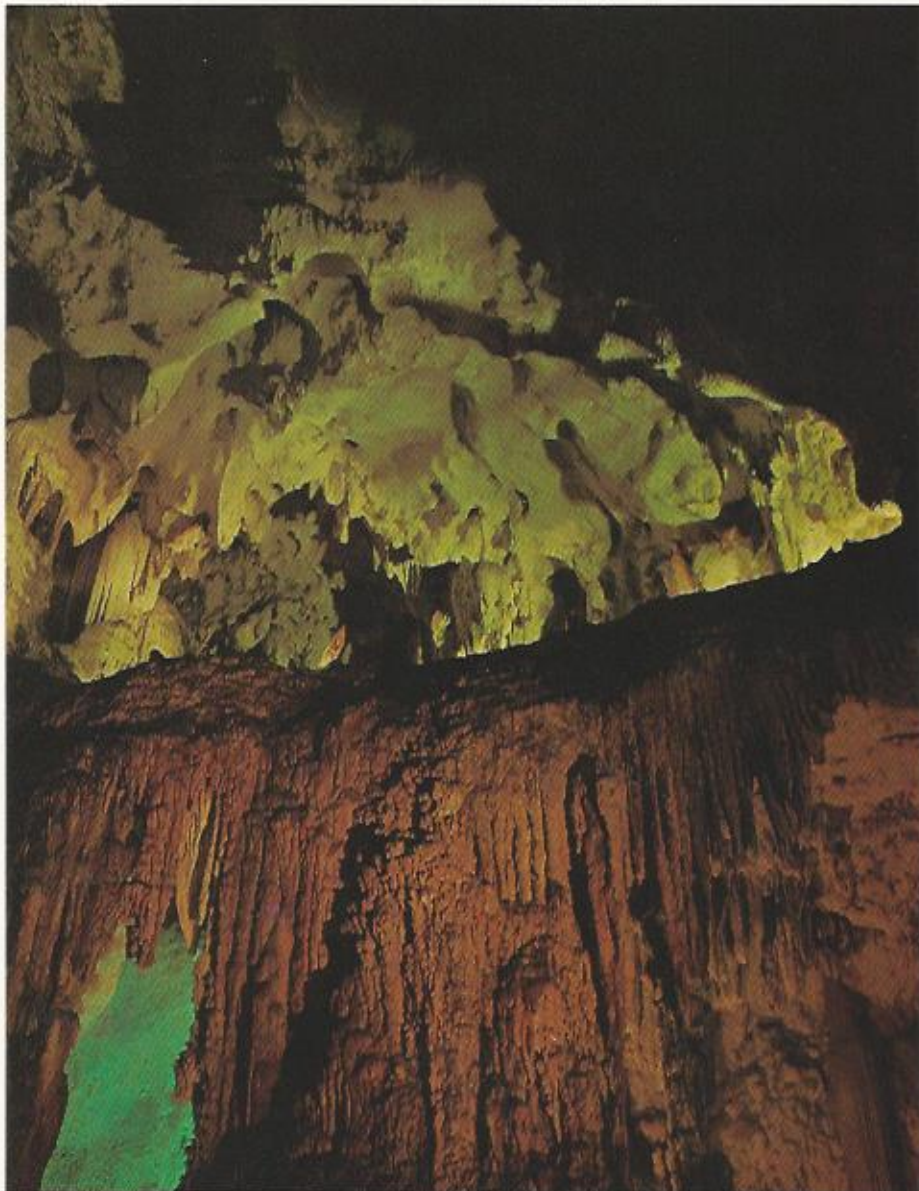
Limestone caves are the last category and the one in which the vast majority of caves in the United States are found. They are formed by acid-charged ground water leaching through limestone, dolomite, and gypsum bedrock.

For many years erosion by underground rivers was believed to be the way caves were formed. While many caves have underground rivers, the underground river theory of cave formation becomes doubtful when the structure of a cave is examined. Speleologists have demonstrated that most caves consist of

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**The largest concentration of caves is found in Kentucky, which has over 100,000 miles of limestone labyrinths.**

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J. C. Zangroniz

large, essentially disconnected "rooms" with high, domed ceilings. They also have maze-like passageways, running at right angles to each other, features highly unlikely to occur along a flowing waterway.

With SCUBA diving becoming popular, a new area of cave exploration opened up. Today's cave explorers can don aqualungs and plumb the underground, water-filled caves found in abundance from Missouri to Florida. This type of cave exploration adds yet another dimension to the always-present danger and excitement of discovery. Divers swim the syphons or water-filled sections to reach the dry, unexplored caverns beyond. The potpourri of equipment needed for spelunking is strong, lightweight and functional. Wire ladders, nylon ropes, carbide lamps, hard hats, canteens, food concentrates, snag-proof clothing and lightweight sleeping bags are collectively called, "spelunk junk."

The largest concentration of caves is found in Kentucky. It has more than 500 caves with more than 100,000 miles of limestone labyrinths. Among the most notable are Cascade, Hidden River, Mammoth, Flint, and Crystal.

The largest of these is Mammoth Cave. In 1972, spelunkers searching for a connection between Mammoth and Flint caves found a narrow passageway that joined the two. Today, the Flint-Mammoth Cave System stretches more than 144 miles, making it one of the largest continuous cave systems in the world.

Mammoth Cave, first discovered in 1799, is truly one of the great wonders of the world. It contains eight waterfalls, three rivers, and a great dead sea, all underground.

Mammoth Cave first came into prominence during the war of 1812, when the saltpeter that lay on the floor of the cave was mined for Commodore Perry's navy on Lake Erie and General Jackson's riflemen at the battle of New Orleans.

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*Many caves are formed by acid-charged ground water leaching through limestone.*

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## SPELUNKING *Continued*

Mammoth Cave, like most caves, has formations that are one-of-a-kind. Giant's Coffin is a 40-foot rock weighing more than 2,000 tons. It broke off from the main cave and is named because of what it resembles. There is the Great Star Chamber, named for the many star-like formations hanging from the ceiling, that sparkle when light strikes them. The cave has a motionless body of water called the Dead Sea (actually fed from a stream below) and a body of moving water aptly called The River Styx.

In another section of the cave, spelunkers found stone formations that resembled a frozen Niagara Falls. Its onyx cascades look like tons of water pouring from the ceiling. It is 50 feet wide and 75 feet high. It has been estimated that it took 100

years to form a single cubic inch of this cave onyx, and at that rate, Frozen Niagara took several million years to take shape.

Like the limestone caves of Kentucky, the caves of the Southwest are also noted for their stunning beauty. They also have a reputation for supplying an unusual product. Carlsbad Caverns, in the southeast corner of New Mexico, was discovered by a cowboy riding the range. Its first value came not from spelunker's discoveries but from a California businessman's interest in fertilizer.

Most caves contain bats. In the larger caves, the bat population numbers in the millions, and their droppings, called guano, make a rich and valuable fertilizer.

Carlsbad Caverns, estimated to be 60 million years old, contains millions of pounds of easily mined guano. In the first years after its discovery, and before spelunkers discovered its beauty, the cowboy

and the businessman mined over 100,000 tons of guano for California orange growers.


Early spelunkers had difficulty in Carlsbad Caverns. Many narrow, winding tunnels that twisted back and forth tended to disorient the explorers. One day, they discovered the King's Palace. This circular-shaped, huge chamber is decorated in gleaming onyx and large stone curtains. It is one of the most spectacular stone chambers in the world, with thousands of glimmering stone pendants hanging from the ceiling, resembling stone chandeliers.

Other chambers are named with a flavor for the area and Indian mythology. The Papoose Room has stone formations that resemble miniature wigwams. Shinav's Wigwam is named for a Navajo god so powerful he used petrified trees for arrows.

The stalactite formations at its entrance look like war clubs and the walls of the wigwam are decorated with trinket-like stone pendants and draperies of shimmering onyx.

The caves of the Northwest are also unusual. The Oregon Caves in the Siskiyou National Forest have mammoth limestone blossoms which ring like bells when tapped with metal. They are known as the Marble Halls of Oregon. They contain miles of winding passages, giant formations, and pink and white crystals that glow with a brilliance of jewels.

Spelunking is a unique sport. There is mystery in the dark, silent blackness of a cave. It is like coming face-to-face with primordial nothingness. For cave explorers there is the ever-present excitement waiting down the virgin passageways, a pioneer spirit, and new discoveries around the next turn. It offers elements of danger, and adventure as well as a sense of accomplishment. Every cave is unique, with each one having a different history and a combination of features that can be seen nowhere else in the world. Using water as a tool, and minerals for color, nature has carved and decorated wonders yet to be discovered.

For more information, contact the National Speleological Society, Cave Avenue, Huntsville, Alabama 35810. Tel.: (205) 852-1300. 

*New Mexico's Carlsbad Caverns are believed to be 60 million years old.*



FPT International, J. Slavitt