Underground at Natural Bridge

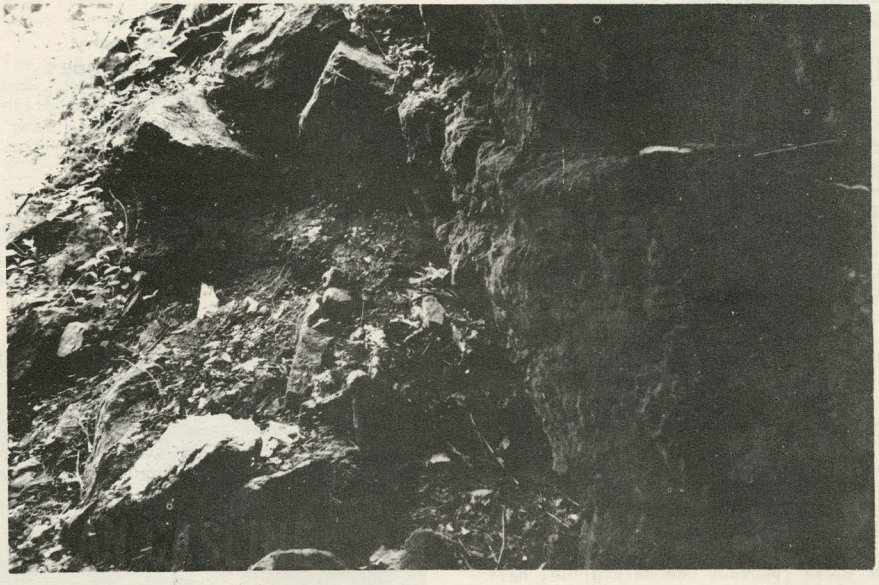
by ALAN CASLINE

In the fading light of the cavern's opening we observe a place of transition - a transition from light to darkness. Chlorophyll is the green in the plant cell allowing transformation of radiant energy into a chemical form. Here in pale light, leaf and root shrink away in distance from their sun source. Smaller and smaller grows the pigweed at the entrance to the underground. Smaller yet more numerous.

To the minnows the shallow water of the underground river is a perfect sanctuary. The larger fish cannot swim to reach them yet there are pools and passageways galore.

Local people say the suckers disappear after their spring spawning in the Indian River. They are not found in the electric lit commercial part of the cavern, but there are many entrances besides this one and miles of underwater tunnels. One old fisherman knows a spot where you can drop a line between two boulders at an entrance to a small cavern and almost always catch a good-sized bass.

"When we were kids, in the winter, when the river is frozen in the cavern, we'd come down here with our sleds, get a running start and slide all the way through," David Morgan tells me. David's family owns the land under which the cavern is located. He knows as much about the place as anybody. If they gave out awards for time spent underground he'd be eligible. "Sometimes I think my father just bought this place so we kids would have something to do," he



says dismissing his younger brother and climbing into the flat-bottom boat used for the underground boat tour.

Reading the story of the bottommost layer of oldest available rock is difficult because although this underlying layer is a distinct geologic formation it is a mixture of many types of rock. These rocks have been subjected to a long history of events - submergence beneath the sea, vulcanism, sedimentation, deformation, metamorphism, erosion, and mountain uplift. The bottommost layer, the one underlying all other North Country rocks and sediments, is connected, mostly under cover, with the Grenville Province of the vast Canadian Shield. The Canadian Shield has been called the backbone of North America.

Dated by modern geochemical methods the ancestral Adirondacks rose out of a shallow, sediment-filled sea 1100 million years ago. A collision of masses beneath the surface, similar to the few million year old collision of the Indian subcontinent into Asia that caused the present-day Himalayas, pushed mountains of materials to the surface. Miles below rocks underwent intense heat and pressure. The Natural Bridge Caverns were born, in a sense, when the Adirondacks were born. The rock that makes up the Caverns, a billion-plus year old metamorphisized calcitic marble (perhaps the oldest soluble rock in the world) was formed then in the heat and pressure occuring at depths as deep as 6 - 15 miles.

In the Adirondack region these and other deep-formed rocks have gradually surfaced. The ancient summits have been worn down by weather and erosion and, like an iceberg, the mountain range has risen up from below.

It's cool, windless. There is the slow drip of water. Currents brush the sidewalls in the channel passage. A feeling of space. I duck down as far as I can in the small rowboat. We half glide, half scrape along into a side passageway. Without light the ceiling opens high overhead.

The actual circumstances required to produce underground passageways like the one found here includes a good combination of faulting and, more important, a good stream near a sudden change in relief. At the entrance to the cavern marble rock on the west meets igneous granite on the east. The granite is insoluble but the marble is not. When it was first discovered in 1812, the entire flow of the Indian River passed into the marble arch and through the caverns. River erosion, both mechanical and solutional, widened the first passageway until today when The Natural Bridge Cavern is at least twice as extensive and far better developed than any other known cave in the same type of rock. Its quarter-mile end-to-end traverse is one and one half

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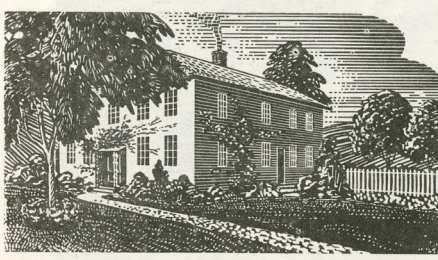
times as great as any other northeastern marble cave (either Grenville or Taconic Range; the latter being more soluble but 1/3 as old). Water in the Indian River, made slightly acid by organic matter and carbon dioxide from the air, has slowly dissolved away the marble wherever contact was prolonged.

"There are no large stalactites in the Cavern," David tells me, "because most of the Cavern was underwater up until 1900 or so." Stalactites form from the roof of a

Walter Blanchard (on far left of photo) ca. 1940

cave by evaporation of dripping water full of lime. "Here's a stalactite." He shows me a tiny sliver by his finger. A stalactite grows one cubic inch in a century.

The walls of the cavern are smoothly polished. Protruding from the smooth marble ceiling are small chunks of granite which provide convenient handholds for propelling the visitor's guideboat.



The ex-King Joseph Bonaparte mansion, built in 1829, dismantled in 1902. Natural Bridge, N. Y.

The first road in the region took advantage of the land crossing provided by the river's sudden dip underground. Hunters and trappers knew about it and used it. The land was owned by Joseph Bonaparte, ex-King of Spain, part of a "reservation" one mile square. Bonaparte first came to look over his lands in 1828. He was much impressed by the arch and proximity of his lake, "Lake Bonaparte." He constructed a residence here in 1829. The Count spent part of three summers in his large, bullet proof house. Local legend has it that the ex-King's celler was connected by secret passage with the cavern. No one has yet found the opening or any of the silver coins he allegedly hid there.

The Indian River had for ages flowed through its fairly open entrance, twisting and turning a short distance before totally submerging the cavern with water. Much of the Natural Bridge was underwater year round and remained unexplored until the coming of man caused a rapid change in the local ecology. Logs and drift from timber cut up river, mixed with sawdust and shavings from nearby mills as well as with debris from many added sources, piled into the underground passage. They blocked the passage forming a sort of Natural Dam that

forced the river to cut a new channel. This lowered the water level so that, for the first time much of the cavern was explorable. Meanwhile, Bonaparte's house had been converted into a four family apartment, and about 1902 was demolished entirely.

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Showing a peculiar irreverence to their "natural wonder" the townspeople in the early part of the century used the cavern's entrance as a community dump. When Walter Blanchard and Commercialism arrived at the great cavern they found the place quite a mess. As a boy he had played in the caverns and so when touring with Mrs. Blanchard on a southern highway it's not surprising that they became interested and stopped at a southern cold cave attraction. As a result, in comparison Mr. Blanchard was more impressed than ever with the "natural wonder" at home and quietly resolved to obtain possession and develop the cavern.

In 1934 he had the first opportunity to purchase a half acre plot containing the entrance, and a short time later purchased sixteen and a half acres across the highway containing the outlet and the then known ground over the cavern. He hired men and mules and in the dry season they went down and worked, drawing out wedged in logs, moving mud and rock, and deepening the channel so boats could ride the current and allow adequate headroom for visitors. They stopped at about half way along the distance at a natural opening where stairs were built for an easy exit to the surface. The rest of the cavern remains uncleared.

David Morgan has been the rest of the distance. The Cavern continues much the same way as before, except rotting timbers and loose stones make the going more treacherous. The end point is a large and apparently deep pool. Someplace at the bottom of the pool is an outlet. The water lies black and still. David has waded near the pool's edge but has not gone swimming in it.

The final outlet to the outside is known. We visited there and looked down at the streambed's sudden beginning. Last summer two scuba divers tried to swim back up the passageway. They turned back before reaching the surface of any underground pool. To date no human has traced the entire route of the Indian River's natural bridge. When it finally happens it will be scuba equipment that makes it possible.