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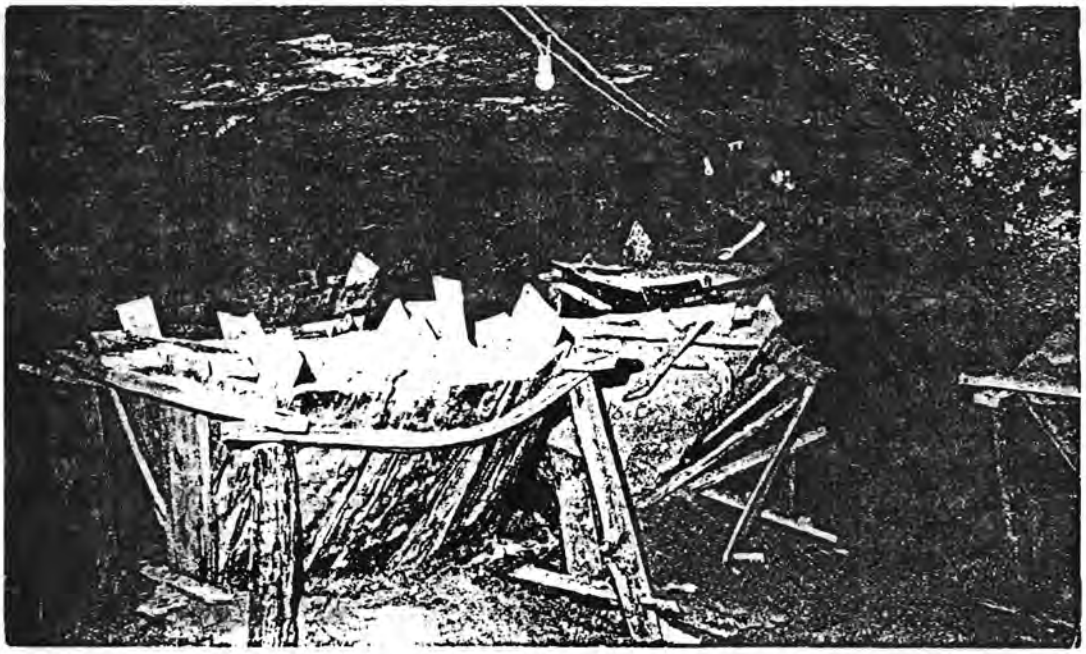

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THE ASSCCIATION

The American Spelean History Association is chartered as a non-profit corporation for the study, dissemination, and interpretation of spelean history and related purposes. All persons who are interested in those goals are cordially invited to become members. Annual membership is $5.00; family membership is $6.00; and library subscriptions are $5.00. ASHA is the official history section of the National Speleological Society.

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FRONT COVER

This old postcard shows the saltpeter hoppers in Organ Cave, West Virginia. This is one of the better known digging sites of niter in the Blue Ridge. These vats have been preserved and can be visited on the commercial tour.

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THE JOURNAL

The Association publishes the Journal of Spelean History on a quarterly basis. Pertinent articles or reprints are welcomed. Manuscripts should be typed and double - spaced. Submissions of rough drafts for preliminary editing is encouraged. Illustrations require special handeling and arrangements should be made with the editor in advance. Photos and illustrations will be returned upon request.

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BACK ISSUES

All copies of back issues of the Journal are presently available. Early issues are photocopied. Send requests to Jack Speece, 711 E. Atlantic Ave., Altoona, PA. Indexes are also available for several early issues. Issues from vol. 1 to 7:2 are available on micro-fiche from Kraus Reprint Company, Route 100, Millwood, New York 10546.

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1987 PETER M. HAUER AWARD

Angelo I. George was the recipient of the 1987 Peter M. Hauer Award for spelean history at the annual NSS Convention at Sault Sainte Marie, Michigan. Angeol has been a long standing member of the NSS and ASHA producing numerous articles for publications of both organizations. His special interest is in the research of saltpeter caves. Many papers on this subject have also been presented including the recent book on Short Cave, Kentucky.

CALL FOR PAPERS

The 1988 NSS Convention and annual ASHA meeting will be held in Hot Springs, South Dakota June 27 - July 1, 1988. This area of the Black Hills offers a variety of caves and breath taking sights. Plan now to attend and submit the abstract to your paper to Marion O. Smith, P.O. Box 8276, UT Station, Knoxville, TN 37916. Go for the gold.

SPELUNKING IN THE ALLEGHENIES AND BLUE RIDGE was going to be Clay Perry's third major contribution to speleology in the "American Cave Series". He considered NEW ENGLAND'S BURRIED TREASURER (1946) only an expanded edition of his UNDERGROUND NEW ENGLAND which was published in 1939. An anouncement that the third title was in the works was made in the October, 1948 NSS NEWS. Another comment was made in the February 1954 NSS NEWS that the he hoped to have the book compleated that winter. However, the unpublished manuscript is now on file in the NSS Library.

SPELUNKING
IN THE
ALLEGHENIES AND BLUE RIDGE

Clay Perry

UNDERGROUND HISTORY OF OUR WARS

Clay Perry

A part of the history of all our continental wars is to be found in the caverns of the Alleghany mountains, in the abandoned saltpeter workings which were desperately organized by the Confederacy in 1861 on a grand scale. But for saltpeter, the basic element for the manufacture of gunpowder, most of which was mined from caves, the War Between the States could not have lasted for more than one year.

At the beginning of the war the Confederate States had very few improved arms and no powder of consequence. Only two powder mills were listed in the census of 1860, one in South Carolina, employing but three men in the manufacture of blasting powder, and one in Tennessee, near Nashville, employed ten men. Very little poeder or other ammunition was stored, most of it left over from the Mexican War, almost obsolete.

Early in 1861 the Confederate government began building a stockpile by ordering from the North but when Ft. Sumter was fired on, all shipments were halted. On April 8, 1861 Major Josiah Gorgas, the father of William Crawford Gorgas, of Panama Canal fame, was made Chief of the Bureau of Ordnance. Jefferson Davis then ordered the formation of a Niter and Mining Bureau and a Col. St. John was appointed its head, with orders to obtain niter (saltpeter) from caves and other like sources and to proceed with the formation of niter beds; that is compost heaps, some of which had already been started at Richmond.

On May 1, 1861 the entire production of niter from all sources in the Confederacy did not exceed 500 pounds, and out of this only an insignificant amount of powder could be made. These figures are from official government sources and differ somewhat from Freemantle's rather casual records. By August 1, 1862, furnaces were up and work underway at 16 "government caves" with an average of 27 white hands and 115 Negroes at each, not including work in private "niteries." By December 1862 the niter collected amounted to 200,820 pounds and before the war was over one half of the total amount of gunpowder used by the Confederacy was from domestic source. Col. George Washington Raines built a large mill for the Confederacy at a cost of 20,000 pounds at Augusta, GA "one of the most perfect gunpowder mills in the world" and produced 5,000 pounds of powder daily. The stack of the mill was left standing as a monument to the industry which certainly extended the war. It would have ended quickly, with a victory for the North, but for the rapid developed industry and the raw material from the many caverns.

Some idea of how wide-spread this cave mining was may be gained from the knowledge that there were 22 caves in West Virginia, alone, taht were worked for saltpeter. In all the central Alleghany area there were probably three times as many, or more if privately worked caves were counted. Mammoth Cave in Kentucky was one of the greatest of these saltpeter workings and had been used as early as in the War of 1812 for the same purpose. Madison Cave in Virginia was mined during the Revolution. Organ Cave in West Virginia was known as "General Lee's Underground Powder Factory" and in this one of three commercial caverns of the Mountain State, may still be seen intact the cribs and troughs and the marks of cart wheels and donkey's hoofs. In the largest known saltpeter cave, Head-of-the Mill-Pond-Cave near Greenville, West Virginia these relics are spread out in 13,000 feet of passages under the earth.

In our tour of the cave country in 1947 and 1948 we visited half a dozen saltpeter caves and a previous visit was made to Sinnitt Cave in Thorn Mountain, near Franklin, as described in Chapter one, and to Trout Cave or Troy Rock Cave in the same area, which became the first cavern in America to be officially investigated during World War II as a possible military or industrial installation for wartime uses in the Atomic Age.

This expedition occured in 1946 and is described at some length in a chapter titled "Search for a Hideout" in the book EARLY TALES OF THE ATOMIC AGE by Daniel Lang, published in 1948 and kept "top secret" until then. Several of my spelunker friends were members of the exploring party and I knew about it but kept away although I was in company with William E. Davies, Chairman of the Mapping Committee of the National Speleological Society who made a survey of the caves of West Virginia for the Geological Department.

To get to the entrance is somethoing for a mountaineer, for the opening yawns high on a cliff, 3.5 miles southwest of Franklin on U.S. 220 and it took the services of two climbers with 400 feet of rope which they carried up and tied to a tree to hoist the scientists up. They included a nuclear scientist, a geographer and Mr. Davies; William J. Stephenson, then president of the N.S.S. and a vigorous and curvaceous young woman, then in the U.S. Marines, who answered to the name of "Dutch" Schultz.

The conclusion reached after an exhaustive and exhausting survey of this cavern was that it might be of use in case of atomic war as a storage warehouse, but it is too loftily located as a site for an underground factory, warplane hanger, fort or other military installation. And what protection it would offer against the H-bomb has never been studied.

In this cavern on Easter Sunday morning, at sunrise, April 5, 1942 there was held quite another sort of ceremony, a religious service titled "An Office of Joy and Faith for Easter Morning," conducted by Rev. Felix Robinson and attended by spelunkers from around Washington D.C. and local residents. Each one took part in the service, reading the Easter Litany by the light of candles in paper holders that the held, and praying for a quick and victorious ending to World War II.

There were deep beds of peter dirt in some of the rooms of Trout Cave, and near the entrance was left a small wooden trough which had become "stalagmitized by the drip of water from the roof, carrying with it minute particles of calcite which hardened over the wood that had been a vat that received the saltpeter liquor leached from cribs of the dirt, later to be evaporated into solid salts.

Not far from Trout Cave, at the base of a limestone cliff on Thorn Creek and opposite Hoffman School, 2.4 miles south of McCoy's Mill is a cave of mystery, which is believed also to have been a saltpeter mine, but folklore has added wierd tales to this. Known as Troy or Dona Cave, it is blocked from entrance by rockfall. A tiny creek issues from a crevice in the talus which was once dug into for a depth of about ten feet without revealing the grisly secret of the cave that is reputed to be a large one and to have buried Tories in the Revolutionary War, who had taken refuge there. Negroes who were traveling the Underground Railroad of which the cave was a "station" and again a number of laborers in the saltpeter diggings. Other versions of this supposed catastrophe are that some pof the deserters from the American Army in the Revolution met their fate and were buried alive, or that they had hidden some munitions and weapons in the cave, and it buried them, but no humans. Whatever the truth is it is still buried under tons of rock.

A simple recipe for the manufacture or refinement of saltpeter to produce potassium nitrate is given in old histories:

"Mix niter with wood ash.
Leach with water and let stand.
Result, saltpeter."

But there was more to the production of gunpowder than that. It required the addition of sulfer or phosphorous at the powder factories and Thomas Jefferson added his reccommendations to an earlier one made by Benjamin Franklin that a powder factory be established somewhere near or on the Patomac, so as to be able to obtain sulphur conveniently from Philadelphia and to have the palnt near Washington.

About the earliest record of gunpowder manufacture on a commercial scale was set down by a Dr. Michaux, a French traveler who was touring through Virginia and who found a mill at Lexington which got Sulphur from Philadelphia and saltpeter from "the grottoes and caverns found in the most mountainous parts of the state." This was in 1805. Jefferson's Journal of a journey in Virginia described Madison Cave at Grottoes, Va. as a fine saltpeter cave in sufficient supply "to equip us for the entire war" of 1812. As early as 1775 the Continental Congress reccommended the institution of saltpeter plants "on each river contiguous to the great inspections."

The "niter beds" mentioned as ordered to be formed were nothing but huge compost heaps to which was added urine from cattle and horses, and in Washington's time, housewives and housemaids were urged to "save the contents of the vessels" for this purpose.

At the caves labor was impressed for the dirty work, conscripts, deferred draftees and negroes who were not slaves - and even "refugee ladies" were put to work "for clerical purposes" so desperate was the Confederacy for powder.

Jefferson wrote to Pierre DuPont that he wanted a powder plant near the capital and DuPont built a mill near Philadelphia that was the beginning of the great DuPont chemical industry.

The saltpeter workers had to be careful not to locate their underground workings where a sudden rise of water in a stream might flood them out or trap them to drown. This could have happened at such risky caverns as Snedegars' Cave which is picturesquely and remotely located on the road through Friar's Hole, a vast sinkhole rimmed by mountains, three quarters of a mile from Jacox in Greenbrier County. When Paul and I visited it in company with members of Charleston Grotto, we ran into the runoff from a cloudburst that had occured the night before.

Leaving Marlinton in a slight drizzle we left U.S. 219 at a point some 20 miles south of that town and from there on we were on dirt roads that seemed to be hung on the steep sides of the wild mountains and were only wide enough, most of the distance, for one-way traffic. Twice we got off the road to Friar's Hole, the first time arriving at a farm on Jacox Knob with its fields as steep as a haystack, the sort which are reputed to be planted with a shotgun, cultivated with a mule that has side-hill dodger legs; that is, two on one side shorter than the others, and out of which sometimes a careless farmer falls into the vale below.

The second time we drove through a gateway into a woods which grew denser and denser and came to where a bridge was under water from a swollen run, and finally, holding our breaths as we wobbled along the very edge of Friar's Hole in slippery clay, we arrived before Snedegar's farmhouse and could go no farther. A car was parked there and there was no room to pass and hardly enough in which to turn around.

In driving to this place we had crossed one plank bridge under which roared a torrent, plunging into the lower entrance to the great saltpeter cave like a young whirlpool rapids in reverse. There was no chance to enter the cave here, but Robert Flack of Charlestown finally guided us to the upper entrance, off a meadow, and we grop@ped our way into a dense fog from the warm outside air meeting the cool, damp air of the cavern, stumbled over rocks and broken planks from ancient sidewalks as well as some driftwood borne in by previous flooding.

We found the relics of the salpteter workings after exhausting clambering over broken slabs that tilted at a touch, up old wooden ladders slimy with moisture, one of them an "Indian Ladder" made of a single timber with cross-pieces nailed to it, crept through waterfall and came up on five crudely carved vats made of tree-trunks, hollowed out like dug-out canoes. All save one that had been deliberately emptied by would-be collectors in an effort to carry it out, were full of peter dirt which had been left when the war ended, just as in other niter caves. But how on earth, or under the earth, the laborers at this nitery had managed to drag those heavy log vats in through the tortuous crawlways by which we came none of us could imagine. We had to assume that they were borne in by another passage, now closed.

Because of the freshests of warm muddy water that came tearing down the mountain sides in many of the ususally small dry "runs" to join at the bottom of the big sinkhole and rush into the lower entrance it was impossible to explore more than a part of this cavern but we learned that there were some saltpeter piles in a large room just below the lower entrance. We did find a huge room with an arcjhed ceiling rising above a mound like pile of earth and rock that stood like a monument on the edge of a deep pit and our voices sounded like the mutterings of lost souls in a tomb.

Mr. Burton Faust of Washington, a vetern speleologist, has dug out the catacombs of the Library of Congress, and pieced together the hitherto lost history of the role played by saltpeter caves in all our wars and as well has gone back into ancient history to study the uses of gunpowder in China and Europe. He has found that the manufacture of gunpowder from saltpeter and sulphur reached its first climax in Greek fire that was used in sea battles and land sieges in the Mediterranean area. In this country saltpeter was used by the earliest settlers and by the Indians in Colonial times but it came into its greatest use in the Civil War by the necessity imposed by the Union blockade of southern ports that shut off all but a trickle of niter from India in British ships or blockade runners of piratical enterprise.

The North imported considerable from India. President Abraham Lincoln at one time dispatched Lamont DuPont to England to buy saltpeter. DuPont succeeded in buying 2,000 tons and had four ships loaded and ready to sail when an embargo was imposed by the British because of the so-called Trent affair in which John Slidell and James M. Mason of Virginia were taken from a British vessel by a Union warship. They were released January 18, 1862, the embargo was lifted and the ships sailed with their cargoes of 80,000 English pounds worth of saltpeter. The North had very little saltpeter as a native supply and most of the saltpeter caves were in the south, in Tennessee, Alabama, Georgia, Arkansas, Texas, Virginia, West Virginia and the Carolinas. The Confederate Niter Bureau was authorized to impress free negroes for labor, "to be paid wages and furnished substinence," and some slaves and conscript whites were put to work. Production was hampered in some of the richest areas by the advances of the Union armies, the capture and destruction of some of the works, and in Virginia and West Virginia niteries changed hands again and again during the war. Some of the earliest and bitterest battles of the Civil War were fought in the mountains of West Virginia for the saltpeter to be found there. The Droop Mountain Battlefield, five miles south of Hillsboro, on U.S. 219 is a monument to one of these niter raids, as local people called them, and the caves of the Shenandoah Valley in Virginia not only furnished saltpeter but underground camping grounds for the soldiers of both sides.

Thomas Jefferson wrote of Madison Cave:

> "the earth in it affords saltpeter in the proportions of from two to four pounds to the bushel. Two thousand weight was manufactured here during the years 1812-1813-1814. The earth when brought out is, at the mouth of the cave, put into a plank gutter which conducts it to the bank of the river, at the bottom of the hill, where it is put into tubs and this is evaporated to a salt by boiling."

William H. McGill, Virginia State Geologist wrote that "Interesting local stories of pioneer days in the Valley of Virginia tell of the use of many of the caves as retreats from maurauding Indians. It is said that the others were as retreats for soldiers and local residents during the Revolutionary War and the War between the States. Deposits of cave earth or saltpeter were mined from several caves for the manufacture of gunpowder during the War between the states and some deposits are said to have been mined during the revoultionary War. Human and animal bones have been found in some of the caves."

Indeed, veritable catacombs of Indian bones have been dug up out of several caves in southern and southwestern Virginia - but that is another story.

Our guide to the great Greenville Saltpeter Cave or Head-of-the-Mill-Pond Cave was an amiable amateur speleologist of the village whom my companion, Emmons Graham of Charleston, knew. This man had an origional lingo to describe the cave formations. Everything in a cave was, to him, a "staglite" thus he neatly combined the two most popularly known of all the myriad natural sculptures, the stalactite and the stalagmite, in one word. It did not matter whether things grew up or down, confusion was thus avoided.

He took us to one of the four entrances to this 13,000 foot long cavern which is famed for the part it played in the War between the States. En route he told us that a member of the "National Speleological Society" had been to Greenville in June and had preached the "bichloride" sermon at the high school commencement. He was very proud of that, as he was the school janitor. The mercurial minister to whom he referred was my friend, Felix, so we became friendly and were told some of the tales attached to this cavern in local lore.

The entrance was used as a walk-in, upright, and for a long distance is on one level with a clay floor hardened in places to rocklike consistency and with no formations at all, but in its long rooms are the ghostly remains of the subterranean mining that went on here. Wooden cribs by the dozen filled with peter dirt and where the slats of the cribs had rotted away the V-shaped forms of the hardpacked earth remained. There were the deep worn ruts of carts and the sharply defined scars of mule shoes, the marks of mattocks and spades. As these were what we had come to see and our time was limited and ther were other attractions nearby to visit, we came out and drove around to the mill-pond where a sizeable stream flows out to operate a gray grist-mill with its current.

We then visited the village cemetery to see the curious headstones which were large stalagmites that had been removed from the cave and set up as monuments to some of the saltpeter workers who had died on the job.

This was the strategic niter cave, and during the war, a cannon was emplaced atop the cave. Good reason for this sort of guardedness lay in the fact that the cave is but a few miles from the Ohio state line and subject to raids by Union detachments over the main road from Marietta that now is called the George Washington Trail, and by another road that traverses the area called the Blue and Grey Highway.

In Head-of-the-Mill Cave there is a highway of earth and rock and another of water which were used by the niter miners. The stream originates in swampy country, disappears in a sink at the entrance to Laurel Creek Cave, flows through Cross Roads Cave and resurges near the northeast entrance to this saltpeter cave, then flows through the lowest level of the cave and emerges in the mill-pond. The whole area here in Monroe county is a country of sinks where caverns have caved in and let the surface topsoil or overburden down.

Laurel Creek Cave is probably the next largest in West Virginia. It yawns widely in the side of a low hill, one mile and a half northeast of Greenville, the hugest entrance known in the state, an arched portal 110 feet wide and 30 feet high, which provides a tempting stable for pastured cattle who seek the coolness of the rock passage and the mud of its floor in summer. This is the cave that three times swallowed a log bridge, washed into it by the spring freshet waters of Laurel Creek. Twice the bridge was dragged back out by mules but the third time it was borne almost 1000 feet into the main passage to where it becomes small, where it was wedged in so tightly that no power could move it. It may stay there forever, if not intact, at least in pieces. A hundred feet beyond the wrecked bridge is a large room called the Theatre Room, 160 feet long and 50 feet high with a prosecenium arch matching the entrance, its ceiling decorated with curious knobs formed by differential erosion and solution, and resembling the knobs of a huge waffle iron. It was somewhat wierd to stumble upon cows living in the moist cool earth for 500 feet inside, to say nothing of walking in their ever-fresh manure which did not form "chips" like that of the buffalo in the open prairie. Fortunately there were no bulls in the spelunking herd.

Monroe County has a decidedly patterned cave system all along its southeastern border. Of the 45 caves in the county, 17 of them range in a line from southwest to northeast. The rest are scatteres in five distinct groups about the county. One of these caves was recently discovered to be perhaps the deepest one in the Alleghanies.

But we were thrilled, no end, to find a "cave skeleton" standing wide open atop the ground, not far from Laurel Creek Cave! Graham and his spelunking wife "Tommy" had saved this up for a climax to this hot day trip, together with an outdoor refrigerator nearby. We walked down a pasture hillside grown thickly with thistles, in temperature in the nineties, in a blazing sun, and suddenly encountered air so cool that we were soon shivering. At the bottom of two hills that converge in a hollow, is one of the entrances to Head-of-the-Mill-Pond Cave, the "water entrance" as it is called, and out of it emerges an icy stratum of air which cools the outdoors for some yards, and seems to hang there immobil, changing the temperature for more than thirty degrees in midsummer.

Graham had told me nothing if the eccentricity of the Greenville cave series and it came almost as a shock, but a benevolent one. Following down the dry bed of what may have been an overland stream, once, we arrived at what, for lack of any name in the geological records, we called Red Barn Cave, for the building at the roadside, and it might as well be called Skeleton Cave for it is the framework of a cave standing on the surface of the ground and as perfect a cavern, though quite small, as one could find underground. It had a roof, partly open, and walls with windows in them, a convenient door at one end, wide open, and other characteristics of a cave which had been abandoned by Mother Earth aeons ago when the dry run valley had been buried under rock, the stream had flowed through beneath the surface and carved and moulded this cavern which had eventually become an open air relic, a geological freak. We knew that this is so because there was water in one end of the one room of this Ali Baba of a cave.

We should have liked to linger here longer to enjoy these quaintly curious manifestations of the underworld that had come topside and the natural refrigerator's cool air conditioning, but we had to move on, with only a look at the entrance to another saltpeter cave close by, known as Haynes Cave, where there rests atop a perfect dome of dripstone, a wooden trough smoothly coated with solid and glistening cement from the fall of drops of water above. And the trough that once held saltpeter is glued firmly to the dome on which it is poised, having been placed there by the miners to catch water some 85 years ago.

Mr. Graham, who is a mineralogist as well as a banker, said that some idea of the time it takes in a wet cavern to build its formations could be gained by measuering the thickness of this flowstone. It is commonly estimated that it takes 120 years to "grow" a cubic inch of formation. The coating on the little trough in Haynes Cave was about half an inch thick, so the estimate is approximately correct. But what is 120 years in the millions that it has taken to form columns 40 to 50 feet high and ten to 20 feet in circumference? That Stratosphere Ballon at Seneca Caverns, for instance, was not built in a day. It is very much older than Rome.

The children of a little schoolhouse that stood on a hillside on the rough road that passed by two enormous caverns, nearby, were honored by having one of them names Schoolhouse Cave. The other was named Hellhole. Each requires special treatment for the caves are such huge wild ones with known records of danger and near death for explorers and the first has only been completely conquered within the past year by a party of New Yorkers, including a very brave lady.

Schoolhouse Cave is named not only for the little wooden building of the Harper Gap School but because it had proven a unique schoolhouse itself, for many generations of students, and one time was a saltpeter source of prodigous supply. The old school is long gone but the cave remains as another sort of school for speleologists who here can learn all the tricks of underground mountain climbing. The first survey of this cavern was made by members of the Appalachian Trail Club but its chief interest for this chapter is in the saltpeter workings, or the remains of them. The principal man-made wonder of this cave is a deep trench dug into the clay along a 500 foot passage, this trench sometimes six feet deep and four or five feet wide. In places blocks of rock were piled to make crude walls. Pieces of split wood, charcoal, straw and other materials from outside were found on the sides of this laboriously dug passageway, the earth that was removed being processed for saltpeter.

William E. Davies in his description of this cave says that, "probably no cave in West Virginia has received the attention and investigation that Schoolhouse has." We are fortunate to accompany him and his aide on a visit to it on a sizzling hot August day. For lack of rain the ground was hard as a rock and after driving to within 50 feet of the entrance, on the Harper Gap Road, we walked and slid into the huge sink that gives into the face of a tall limestone cliff, a most impressive entrance into which a company of soldiers could have marched abreast, and according to local legend, they did during the Civil War, and camped in the great room which is a gallery 30 to 40 feet wide, 70 feet high and 150 feet long. Right beneath the arch of the ledge is a sizeable wooden trough into which water drips, and this used to provide drinking water for the nearby school and the first chamber a cool playground for children at recess and noonings. There was room here for all the Tom Sawyers, Huckelberry Finns and Bettys of the neighborhood, who were, of course, warned not to go beyond this room and daylight.

It was necessary to cross a sort of natural bridge to get into the saltpeter passage, and soon to use carbide lamps, and to watch carefully for new sinks from the erosion of time and the excavations, and especially to halt at the first drop into what has been called the Big Room, whose base is 200 feet below the entrance. Here we did stop and went no farther, that day, nor did the saltpeter workers descend into the depths, for here the character of the cave changes from rock and clay with few formations into a maze of "made marble," the travertine, rockflow and other stalactitic formations, and there was quite enough peter dirt up to this point to make it unnecessary to go further, even if the workers could have managed, without modern equipment.

The saltpeter caves described in this chapter are probably typical of the many which were worked, some of the from the time of the Revolutionary War, through the War of 1812, the Mexican War and finally the Civil War when there was the greatest economic use of caves. In addition to the 22 known saltpeter caves used in the period from 1862 through 1865, four others in West Virginia

are known to have been mined in the War of 1812. Loast Cave, which has been found, is along W.Va. 63, about two and one half miles east of Alderson in Greenbrier Caunty and was so named because it could not be located during the Civil War, though it has been used through the Mexican War, Mill Run Cave, Pendleton Saltpeter Cave and Mineral Saltpeter Cave, the last two names for the counties they are in.

In some of the large, deep caverns the workers stayed without comming into the open air for weeks. Some got lost when they wandered off into side passages, their tourches or oil lanterns failed or accidents crippled the.

There is record of a man who was working in Head-of-the-Mill-Pond Cave who became lost without a light and was found by his dog who led searchers to him. This man, a mountaineer, just sat down on a rock and waited until he was found. His first remark is said to have been, "Now I can eat this here walnut." He had saved a single walnut in his pocket, the only food he had with him and was conserving it for a last bite, just in case.

REVIEWS

BENEATH THE MOUNTAINS, EXPLORING THE DEEP CAVES OF ASTURIAS by David Rose and Richard Gregson, Hodder & Stoughton, London, 1987, 192pp. $29.95.

Rose and Gregson provide us with another indepth report of a British expedition to find a world's depth record. This is similar to the work that David Judson did in 1972-73 at Ghar Parau, Iran. The Oxford University Cave Club first looked at the limestone mountains of the Picos de Europa near Covadonga, Asturias, in northern Spain in 1960 but serious efforts waited until 1980. For the next six years teams probed all the openings that could be found on the baren ridges. The Pozu del Xitu was the most rewarding. After two years of work it sumped at 1,139 meters proving to be the thirteenth deepest in the world.

This story is written from the first hand records of those who made it happen in the same language which they used at the site. These crude college men had some strange customs and unprofessional habits but put it all together to meet the challenge. Their skills of the single rope technique are not up to American standards but were advanced for the British of that time. Any caver can easily associate with the hardships and disappointments these students encountered. It will be interesting to discover what lies below the other peaks in the area.

COLLECTIONS, Speleologie Alpinisme Explorations, c/o Guy De Block, Av.Jean de la Hoese 48, B - 1080 - BRUXELLES

This is a small publication bublished occasionally with a variety of interest items. Topics covered in this booklet include stickers, calendars, postcards, labels (wine, etc.) Ex-libris, cancellations, badges, books, stamps, tickets, posters, engravings, carbide lanps, etc. This well illustrated periodical contains many illustrations and discriptions of lesser known items about caves.

CAVE REFERENCES IN SCIENTIFIC AMERICAN MAGAZINE by Chris Howes, Anne Oldham, Wales, 1987, 41pp.

Chris has provided us with a complete listing (by author) of cave related material from this scientific journal since 1845 along with a brief description of each of the 188 articles. More important, he has included a comprehensive cross reference index. This is a must reference for any speleohistorian's library.

WRITINGS OF CLAY W. PERRY

"Big Cave Hunt Set for July in New England" The Hartford Times, Monday, June 27, 1949.

"Big Timber" Boys Life, Aug., 1920, pp.16+.

"Clarksville Cave" NSS News, V. 12, #8, Oct., 1954, p.6.

"Come, Let Us Go Spelunking" Saturday Evening Post, V. 214, #2, July 12, 1941, pp.14-15+.

"Downstairs America" Ethyl News (Ethyl Corp.), July, 1947, pp.8-11.

"Drouth's End, Farmer's Delight, Left Cave Explorers Stuck in Mud" The Hartford Times, Wednesday, July 13, 1949.

"French Louie Gets Even" Boy's Life, May, 1920, pp.21+.

"Guides With Wings" Boy's Life, April, 1943, pp.19-19+.

"History of Bentley's Cavern" NRO Bulletin #7, 1959, pp.3-5.

"Lemmy Breaks the Jam" Boy's Life, July, 1920, pp.15+.

"Lemmy Takes a Chance" Boy's Life, June, 1920, pp.14-15+.

"Life and Times of a Spelunker" New York Times Magazine, June 16, 1946.

"Marble Quarry and Nearby Marble Cave atDanby, VT..." NSS News, V.8, #12, Dec., 1950, p.6.

"New Cave in Randolph Co., W. Va." NSS News, V.12, #11, Oct. 1954, p.3.

NEW ENGLAND BURIED TREASURER, Stephen Daye Press, New York, 1946, 348 pp.

"Operation Underground" Boy's Life, Jan., 1948.

SPELUNKING IN THE BLUE RIDGE, unpublished.

"Story of Morman Habitation of New York Cave Being Investigated" NSS News, Vol. 7, #7, July, 1947, p.3.

"Strange Berkshire Story of 'Dead Man's Cave' Topic for the Inquisitive" Springfield Sunday Republican, Springfield, Mass., Nov. 14, 1954, p.32A.

"Trapped in a Marble Tomb" unpublished,

UNDERGROUND EMPIRE, Stephen Daye Press, New York, 1948, 221 pp.

UNDERGROUND NEW ENGLAND, Stephen Daye Press, New York, Brattleboro, VT, 1939, 247pp.

"Underground Trails" Trailways Magazine, Vol.9, #4, Summer, 1946, pp.8-11.

"Wild Rice" Boy's Life, April, 1919, pp.11-12.

SPELEO CONTRIBUTORS

CLAIR WILLARD (CLAY) PERRY

1887 - 1961

EXPLORER, AUTHOR, POLITICIAN

NSS # 75

UNDERGROUND NEW ENGLAND, 1939
NEW ENGLAND BURIED TREASURER, 1946
UNDERGROUND EMPIRE, 1948
SPELUNKING IN THE BLUE RIDGE, 1950

A native of Badger, Wisconsin, Clay W. Perry strated his literary career as editor of the Lawrence College (Wisconsin) weekley newspaper. He continued afterwards as a profesional newspaperman. Numerous stories, articles and books including many on speleology can be given to his credit. He elected to change his name "Clair" to Clay after receiving letters from editors addressed to "Miss Clay Perry". The active dedication Clay had at his typewriter remained strong even during his last weakened days.

Clay was a real pioneer in speleology. The first grotto (Bershires, New England Spelunkers Grotto) of the National Speleological Society was created through his leadership. He also served on the Board of Governors and was chairman of the Folklore Committee in the early years of the NSS. The coinage of the term "spelunker" can also be attributed to Clay's efforts.

Traveling was an enjoyment to Clay as he visited hundreds of caves throughout the eastern United States. This is how he gathered material for his articles and books. His writings became the start of the NSS authorized "The American Cave Series". Two volumes were submitted and a third was almost compleated for this series. For his dedicated service and great controibutions to speleology the National Speleological Society awarded him a Citation of Merit in 1960.

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