The Journal of Spelean History

Official Publication
American Spelean History Association
History Section
National Speleological Society

Volume 40, No. 2, Issue 130 July - December 2006

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Front Cover: Fountain Cave, St. Paul, Minnesota, pencil and watercolor, ca. 1850,  
by unknown artist. See the article in this issue.
Nineteenth Century Accounts of Natural Tunnel, Virginia

By Donald B. Ball

Natural Tunnel State Park is located in Scott County, Virginia, approximately 13 miles north of Gate City and 20 miles north of Kingsport, Tennessee. As noted at the website Natural Tunnel State Park (www.dcr.state.va.us/parks/naturalt.htm), “The Commonwealth of Virginia acquired the tunnel and 100 surrounding acres in 1967 from the Natural Tunnel Chasm and Caverns Corp. to establish Natural Tunnel State Park. Approximately 750 additional acres were later acquired and the park opened in 1971....Natural Tunnel, called the ‘Eighth Wonder of the World’ by William Jennings Bryan[t], has been attracting sightseers to the mountains of southwestern Virginia for more than 100 years.” The simple acknowledgement of this understandable though relatively recent interest in the preservation of this natural landmark fails to do justice to the longstanding appeal of this site as a tourist destination. Indeed, in contrast to the mere “100 years” figure appearing in the Natural Tunnel State Park website, there is ample documentary evidence to support visitation (in contrast to War of 1812 niter mining) at this site at least as early as the 1830’s. The present article should be considered as supplemental to a more comprehensive study of this formation’s geology and history recently published by Scales (2004).

Earliest Known Recordation

The first reported published account of Natural Tunnel was a paper by Stephen H. Long (1784-1864), famed for his exploration of the western territories, which appeared in an 1832 issue of American Journal of Geology and Natural Science edited by George William Featherstonhaugh (pronounced “Fanshaw”: 1780-1866), a British geologist then living in the United States. The association of Long and the Tunnel at this point in his career is an interesting aside in its own right. Following his active explorations on behalf of the Army Topographical Corps, Long was breveted as a Lieutenant-Colonel in 1826 and assigned by the War Department in 1827 to serve as a consulting engineer to the newly formed Baltimore & Ohio (B&O) Railroad (cf. “Topographical Engineers–Stephen H. Long,” at www.topogs.org/b_long.html). Col. Long and Captain William Gibb McNeill, also on assignment from the War Department, were tasked with finding the most suitable routes through the Alleghenies (cf. Gary John Previts, “Corporate Governance, Auditing and the Origin of Information Rights: The Baltimore & Ohio Railroad, 1827-1830,” at www.crefige.dauphine.fr/recherche/bisto_compta/previts.pdf). Long remained with the B&O Railroad until 1830 and was assigned to various other railroad related projects for several years thereafter. An extended extract (Anonymous 1832) of Long’s descriptive paper—accompanied by geological commentary—was released soon thereafter in the December 29, 1832, issue of The Mirror of Literature, Amusement, and Instruction, a popular magazine published in London:

Rock Bridges occupy the same pre-eminence amongst the sublimities of nature, that artificial bridges maintain amidst the labours of man. Both alike inspire us with admiration, though we are enabled to obtain but unequal results as to their respective origins. The bridge, built by human hands, is, indeed, a triumph of the perfection of skilful contrivance; the strength and beauty of the arch are among the most simple yet exquisite results of science, wonderful as they may appear to the untaught beholder: but how shall we explain the formation of stupendous rock-arches across deep ravines and rolling torrents, in countries where none but the wild and picturesque forms of nature rise to gladden the eye and heart of the inquiring traveller? Of the latter description are the natural bridges which abound in the State of Virginia; as Rockbridge, which gives name to the county in which it is situated, and the wild and fantastic bridges of Icognozo; all of which are more extensively recognised among the wonders of creation than the specimen here presented to the reader.
This Tunnel is in Scott county, Virginia; but was so little known beyond its immediate neighbourhood, as to induce Lieut.-Col. Long, (U.S. Army,) to communicate its description to Mr. Featherstonhaugh’s American Journal of Geology and Natural Science; and the following narrative of the Colonel’s Excursion will be read with interest:—

“During the past summer, I visited a remarkable natural bridge in Scott county, Virginia, to which I have given the name of Natural Tunnel, on account of its striking resemblance to artificial structures of that kind.

“The immediate locality of this tunnel is upon a small stream called Buck-eye, or Stock Creek. This last name owes its origin to its valley having been resorted to by the herdsmen of the country, for the attainment of a good range, or choice pasture-ground, for their cattle. The creek rises in Powell’s mountain, and is tributary to Clinch river, which it enters at the distance of between two and three miles below the tunnel. The aspect of the surrounding country, and especially of that to the northward of the tunnel, and constituting the southerly slope of the mountain just mentioned, is exceedingly diversified, and broken by elevated spurs and ridges, separated from each other by deep chasms, walled with cliffs and mural precipices, often presenting exceedingly narrow passes, but occasionally widening into meadows or bottoms of considerable extent. The mural precipices just mentioned occur very frequently, bounding the valleys of the streams generally in this part of the country, and opposing ramparts of formidable height, and in many places utterly insurmountable. Such are the features peculiarly characteristic of Wild Cat Valley, the Valley of Copper Creek, of Powell’s and Clinch rivers, and of numerous other streams of less note, all of which are situated within a few miles of the Natural Tunnel.

“To form an adequate idea of this remarkable and truly sublime object, we have only to imagine the creek to which it gives a passage, meandering through a deep, narrow valley, here and there bounded on both sides by walls, or revetments [sic], of the character above intimated, and rising to the height of two or three hundred feet above the stream; and that a portion of one of these chasms, instead of presenting an open, thorough cut from the summit to the base of the high grounds, is intercepted by a continuous unbroken ridge, more than three hundred feet high, extending entirely across the valley, and perforated transversely at its base, after the manner of an artificial tunnel, and thus affording a spacious subterranean channel for the passage of the stream.

“The entrance to the Natural Tunnel on the upper side of the ridge is imposing and picturesque in a high degree; but on the lower side the grandeur of the scene is greatly heightened by the superior magnitude of the cliffs, which exceed in loftiness, and which rise perpendicularly—and, in some instances, in an impending manner—two or three hundred feet; and by which the entrance on this side is almost environed, as it were, by an amphitheatre of rude and frightful precipices.

“The observer, standing on the brink of the stream, at the distance of about one hundred yards below the debouchure of the Natural Tunnel, has, in front, a view of its arched entrance, rising seventy or eighty feet above the water, and surmounted by horizontal stratifications of yellowish, white, and grey rocks, in depth nearly twice the height of the arch. On his left, a view of the same mural precipice, deflected from the springing of the arch in a manner to pass thence in a continuous curve quite to his rear, and towering in a very impressive manner above his head. On his right, a sapling growth of buck-eye, poplar, linden, &c., skirting the margin of the creek, and extending obliquely to the right, and upward, through a narrow, abrupt ravine, to the summit of the ridge, which is here and elsewhere crowned with a timber-growth of pines, cedars, oaks, and shrubbery of various kinds. On his extreme right is a gigantic cliff, lifting itself up, perpendicularly from the water’s edge, to the height, of about three hundred feet, and accompanied by an insulated cliff, called the Chimney, of about the same altitude, rising, in the form of a turret, at least sixty feet above its basement, which is a portion of the imposing cliff just before mentioned.

“Desirous of illustrating this paper by a front view of the Natural Tunnel where the creek issues from it, I have, with the assistance of a particular friend in this city—to whom I am indebted for the accompanying drawing—been enabled to furnish a sketch which very faithfully represents some of the appearances I have
The following passages are from my own private journal:

Saturday, Aug. 13, 1831. Having ascended Cove ridge, we turned aside from our route to visit the natural bridge, or tunnel, situated on Buck-eye, or Stock creek, about a mile below the Sycamore camp,[2] and about one and a half miles from a place called Rye cove, which occupies a spacious recess between two prominent spurs of Powell’s mountain, the site of the natural tunnel being included within a spur of Cove ridge, which is one of the mountain spurs just alluded to. Here is presented one of the most remarkable and attractive curiosities of its kind, to be witnessed in this or any other country. The creek, which is about seven yards wide, and has a general course about S. 15 W., here passes through a hill elevated from two to three hundred feet above the surface of the stream, winding its way through a huge subterraneous cavern, or grotto, whose roof is vaulted in a peculiar manner, and rises from thirty to seventy or eighty feet above its floor. The sides of this gigantic cavern rise perpendicularly in some places to the height of fifteen or twenty feet, and, in others, are formed, by the springing of its vaulted roof immediately from its floor. The width of the tunnel varies from fifty to one hundred and fifty feet. Its course is that of a continuous curve, resembling the letter S; first winding to the right as we enter on the upper side, then to the left, again to the right, and then again to the left on arriving at the entrance on the lower side. Such is its peculiar form, that an observer, standing at a point about midway of its subterranean course, is completely excluded from a view of either entrance, and is left to grope in the dark through a distance of about twenty yards, occupying an intermediate portion of the tunnel. When the sun is near the meridian, and his rays fall upon both entrances, the light reflected from both extremities of the tunnel contributes to mollify the darkness of this interior portion into a dusky twilight.

The extent of the tunnel, from its upper to its lower extremity, following its meanders, is about 150 yards; in which distance the stream falls about ten feet, emitting, in its passage over a rocky bed, an agreeable murmur, which is rendered more grateful by its reverberations upon the roof and sides of the grotto. The discharge of a musket produces a crash-like report, succeeded by a roar in the tunnel; which has a deafening effect upon the ear.

The hill through which this singular perforation leads, descends in a direction from east to west, across the line of the creek, and affords a very convenient passage for a road which traverses it at this place, having a descent in the direction just mentioned of about four degrees.

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The rocks found in this part of the country are principally sandstone and limestone, in stratifications nearly horizontal, with occasional beds of clay slate. A mixture of the two former frequently occurs among the alternations presented by these rocks. A variety of rock resembling the French burr occurs in abundance on Butcher’s-fork of Powell’s river, about twenty miles northwardly of the Natural Tunnel. Fossils are more or less abundant, in these and other rocks. Fossil bones, of an interesting character, have been found in several places. Saltpetre caves are numerous. Coves, sinks, and subterranean caverns, are strikingly characteristic, not only of the country circumjacent to the Natural Tunnel, but of the region generally situated between the Cumberland mountain, and the Blue ridge or Apalachian [sic] mountain. Bituminous coal, with its usual accompaniments, abounds in the northerly parts of this region; and in the intermediate and southerly portions, iron, variously combined, often magnetic, together with talcose rocks, &c. &c. are to be met with in great abundance.

The mountains in this vicinity—long. 82° to 84° W. from Greenwich, lat. 35° to 36° N.—are among the most lofty of the Allegheny range. Several knobs[3] in this part of the range, among which may be enumerated the Roan, the Unaka, the Bald, the Black, and Powell’s mountains, rise to the height of at least four thousand five hundred feet above tide.’

“Mr. Featherstonhaugh remarks, that the Natural Tunnel has not been worn through the rock by the long-continued action of running water is evident, not from the cavernous structure alone of the general country, but from the form of Powell’s mountain, in a spur of which the Tunnel passes transversely.

“Mr. Featherstonhaugh further concludes the Tunnel to be a natural cavity in the rock, for, if such had not been the case, ‘it is evident that the stream would have been deflected from its line; would have followed the base of the hill, and have turned the extreme point.’

“Little is known of the geology of the country in which this Tunnel is situate, notwithstanding the popularity of the natural bridges of the State. The rock before us would appear to belong to that class which geologists commonly term Perforated Mountains, which some suppose to have been bored through, in part, at least, by the persevering industry of man. ‘Such phenomena,’ observes Maltebrun, ‘are, however, mere eccentricities of nature, and differ from caverns only from the circumstance of having a passage entirely through them. The Pierre-Pertuise in Mount Jura, and Pausilippo, near Naples, are instances of this kind. The Torghat, in, Norway, is pierced by an opening 150 feet high, and 3,000 long. At certain seasons of the year, the sun can be seen darting its rays from one extremity to the other of this vault. Near New Zealand is a rocky arch through which the waves of the sea pass at high water.’[4] The latter, one of the Piercy Islands, will be found engraved and described in The Mirror, vol. xix. p. 145.
[1] See the Cut.
[2] This designation has been given to a spot in the Valley of the creek, where formerly stood a hollow sycamore (platanus occidentalis) tree of an enormous size, the remains of which are still to be seen, and in the cavity of which, whilst it stood, fifteen persons are said to have encamped at the same time together.

Subsequent Nineteenth Century Descriptions

Following the work of Long, the next oldest accounts of this natural rock formation were published in 1839 by Rev. D. Ruffner. The first of these, appearing in April 1839, was based upon his travels through the region in 1838. He noted (Ruffner 1839a:273):

I will close these hasty notes, with an allusion to the Natural Bridge in Scott county, Virginia. A gentleman of Tennessee, who had been there, described it to me as a tunnel, rather than a bridge. A creek flows three or four hundred feet under an arch of limestone, less elevated than our Natural Bridge; the tunnel makes two angles between its extremities, so that both openings can never be seen at once by a spectator under the arch. It is a great curiosity, but differs materially from its namesake in Rockbridge, which for a union of beauty and grandeur, is still, and probably will ever be, in its kind incomparable.

Ruffner’s second description appears within the context of a short story entitled “Judith Bensaddi: A Tale” written about 1836 and published in the July 1839 issue of the Southern Literary Messenger. Ruffner (1839b:476) remarked:

…in relation to the inquiry which you made a while ago, I have another curiosity to mention—one of little notoriety as yet, because it is hidden in the mountain wilds of Virginia—which may boast of having the only curiosity comparable to the Natural Bridge: that is, the Natural Tunnel among the Cumberland mountains, in the southwestern angle of the State. Here, a small river flows between high mountains, along a narrow valley, which is suddenly closed by the junction of the mountains. But, nature has cut a tunnel four or five hundred feet long, through solid rock, and thus given egress to the water. The arch of the tunnel is nearly regular, solid throughout, and of considerable span; but its elevation above the floor does not exceed forty or fifty feet. This tunnel would be a finer object if it were straight, so as to let one see through its whole length at once. But such as it is, or as I have heard it described by an intelligent visitor, (for I have not seen it,) you will readily conceive that it is a rare and interesting curiosity, and one that would be much visited, if ‘dame Nature’ had not (as if jealous of showing too many of her works of internal improvement) hidden it among rugged mountains, in a place remote from the great highways of travel.

Another early account (Anonymous 1844) of this geological feature was authored by an otherwise unidentified individual whose name has been preserved only as “W. H. C.” Even at this early date the author’s travelogue-style description of the tunnel’s physical features suggests that this was a site worthy of a visit by the dedicated tourist and adventurer. In doing so, the author was likely echoing the sentiments of still earlier travelers. Indeed, the frequency of mention of this natural feature in descriptive travel guides and other references throughout the nineteenth century clearly indicate that it had become an established “must see” natural wonder along with sites such as Natural Bridge, Virginia, and Mammoth Cave, Kentucky. As recorded by the elusive “W. H. C.” (ibid.:736):

The length of the tunnel [cave] is some two hundred, or two hundred and fifty yards: but on this point I cannot be exact, having visited it alone, without the means of measuring. In the centre it is not near so high nor so wide as at the extremities; still a man can walk erect. At the northern end, the arch, or precipice, is about two hundred feet high: nearly double as high at the southern opening. The oval area, which is so nearly surrounded by the precipices at the southern extremity, contains about half an acre of land. There is no view through the entire length of the tunnel, owing to the curve in the centre; and when standing immediately in that curve, neither opening is visible, though the light finds its way from both, and renders a torch unnecessary.
In the *Statistical Gazetteer of the State of Virginia*, Richard Edward (ed. 1855:373, 375) observes in his discussion of Scott County:

About three miles from Clinch river is one of the most remarkable natural objects of the State, known as the “Natural Tunnel.” An affluent of the Clinch river, after flowing through a deep ravine inclosed [sic] by stupendous walls of stratified rocks, is confronted by a transverse ridge, about 300 feet in height, which has been perforated at its base by an arched tunnel to admit the passage of the stream. The spectator, standing by the margin of the stream, sees [pg. 375] before him an enormous arch, rising 70 or 80 feet, surmounted by strata of limestone which measure more than 100 feet in a vertical direction, while the view on either side is bounded by gigantic ramparts of perpendicular rock.

Another early description appeared in the 1855 revised edition of the *The Encyclopædia of Geography* wherein Hugh Murray (1855:III, 528) observed that:

A few miles west of the village of Estillville, is a remarkable Natural Tunnel, from 50 to 150 feet in width, from 70 to 80 in height, and 150 yards in length; it is in fact a winding passage through the base of a mountain, differing from the Natural Bridge only in the greater length and inferior elevation of the cavity; a small stream winds its way through the Tunnel [note: Estillville, the county seat of Scott County, was later renamed Gate City].

In an article concerning Virginia’s Natural Tunnel and Natural Bridge, the Rev. C. Collins (1855:579-580) extolled at some length on the Tunnel’s natural beauty:

The Natural Bridge over Stock creek, in Scott county, as a natural curiosity, is considered by many as decidedly superior to the one already described. Had this been known to the author of “Notes on Virginia,” another eloquent chapter on Virginia’s curiosities would doubtless have been written. But in his day civilization and discovery had scarcely entered the dip of the great Mississippi Valley. That was a gloomy wilderness—an unbroken continuity of vast uncertainties—the abode of savage beasts and still more savage men. We have seen both of these wonders of nature and enjoyed them. Who, indeed, seeing these could fail to enjoy? But we essay not to become the Homer of the Stock creek bridge. Though not so deficient in poetic sentiment as to see, like the tailor, in Niagara only a place “to sponge a coat,” or in these two bridges of Virginia only a “neighborhood convenience,” yet we doubt our descriptive power to become the herald of this new claimant on popular admiration. There is poetry here that needs a poet to give it voice—one of the poets “born,” with true divine afflatus inspired. But who that possesses any of the elements of sensitive humanity can stand in the presence of these sublime works of God and not feel his soul swell with holy emotion? The voices which they utter are pure and heavenly. In such a presence no man can be groveling.

This bridge is more properly a stupendous natural tunnel. The hill has been perforated by water. Through it winds the unclassic but not less romantic stream of “Stock creek,” rejoicing in its way to the far-distant Father of Waters. Our impressions of this lovely spot are the reminiscences of thirteen years ago [i.e., 1842]. We were younger then than now—in the hey-day, indeed, of our young life. In company with the fair spirit, who, the year before, had united her destiny with ours, and who ever since has been the sunlight of our path, we started on an excursion to this wonder of nature. It was a brief episode in our brief sojourn at the Holston Springs, from which the bridge is distant eighteen miles. We have a vivid recollection of that rocky ford of Clinch river at “Spear’s,” for the depth of the water and the swiftness of the current had well-nigh unseated our fair companion. Indeed, the lingering impression of the whole of that charming, ride now and then still start up with astonishing freshness, as some associated thought sends its flashes through the chambers of memory. Coleridge says that our thoughts never perish, and we more than half believe in the theory. Beautiful scenery—hill, valley, mountain! What gigantic trees! what luxuriant vegetation!—the glorious grape-vines, covering, with their dense foliage, the trees like a canopy—the herds of “stock” cattle “ranging” on the hill-sides—the singing of the birds, and here and there, in the distance, a solitary buzzard floating high in air in huge circles above some hapless carcass—how vividly these pictures of the past still sail before the mind’s eye! But down in that ravine is the only accessible approach to the bridge. Like the other, the approach to this gives an unfavorable impression. As in that so in this, you may ride over it and never suspect its presence. Public convenience here, as well as there, has [pg. 580] turned it to account by constructing a road directly over it, and huge trees grow along on either side, even to the verge. We followed the “bridle way” down the ravine, and were soon in view of the arch. The visitor here misses the graceful ellipse which constitutes the striking beauty of the other bridge. It is not an ellipse, but, rather, a semicircle, and the hight [sic] of the arch bears but a small proportion to the thickness of the superincumbent floor. On entering it seems a lofty dome. How can we measure its hight? I had heard of Washington throwing a
missile entirely over the other bridge. A stone thrown with all my power returned without seeming to ascend half the height. You pass along through a magnificent cavern—not a tunnel bored by art for the transit of the iron horse and his thundering train—not straight, but circuitous, like the letter S. The other bridge is but eighty feet wide—this is four hundred and fifty. As you stand midway in this singular perforation, the gloom of almost total darkness surrounds you. In either direction there is only a faint twilight. If you speak, the cross echoes and reverberations on every hand confound you. Amid the darkness they seem the voices of whole troops of spirits in the infernal shades, whispering, chattering, and shouting to each other. The effect on the imagination is exciting and intense.

But passing out at the lower side you comprehend at once the stupendous grandeur of this wonderful work. Here the tunnel comes to an abrupt termination, and you find yourself at the bottom of a fearful gulf, with mural precipices on either hand, about four hundred feet in perpendicular height. On the extreme right is an isolated cliff about the same altitude called the “chimney,” towering about sixty feet above its base, which is a part of the same cliff. Says Professor Langley—we quote from an eloquent description in a late number of the Southern Repertory and Review—“The height of the walls so engrosses the sense by its predominance, that the area within, while it furnishes ample space for various interesting points of view, is too narrow to satisfy the imprisoned vision, and the eye is led upward and upward to the tops of the trees that wreathe the wall and then to the small sky—the smallest sky we ever looked up to. It happened, when we came out of the tunnel, that the moon was hovering apparently low over the right wall, and the trees up there seemed almost to touch her silver disk, which glanced down upon us brightly, despite the dazzling beams of an unclouded summer sun that diffused their midday glow through the atmosphere above. It looked so strange to see the moon so near and in such company. That was a beauty consonant with the surrounding grandeur.

Within the pages of *Lippincott’s Pronouncing Gazetteer*, Thomas and Baldwin (eds., 1856:1,741) observed:

SCOTT, a county situated in the S.W. part of Virginia, and bordering on Tennessee, contains 620 square miles. It is drained by Clinch River, and by the North Fork of Holston River. The surface is traversed by several parallel mountain ridges, one of which is called the Clinch Mountain. ...About 3 miles from the Clinch River is, one of the most remarkable natural objects of the state, known as the “Natural Tunnel.” An affluent of the Clinch River, after flowing through deep ravine, enclosed by stupendous walls of stratified rocks, is confronted by a transverse ridge, about 300 feet in height, which has been perforated at its base by an arched tunnel to admit the passage of the stream. The spectator, standing by the margin of the stream, sees before him an enormous arch, rising 70 or 80 feet, surmounted by strata of limestone, which measure more than 100 feet in a vertical direction, while the view on either side is bounded by gigantic ramparts of perpendicular rock...

In the course of his pre-Civil war travels in America, English traveler Charles Lanman (1856:I, 466) provided a particularly clear description of the Natural Tunnel within the pages of his *Adventures in the Wilds of the United States and British American Provinces*:

I wish to inform my readers of a natural curiosity lying between the Clinch and Cumberland Mountains... I allude to what is called the Natural Tunnel. It is in Scott County, and consists of a subterranean channel through a ragged limestone hill, the entire bed of which is watered by a running stream about twenty feet wide. The cavern is four hundred and fifty feet long, from sixty to eighty feet in height, about seventy in width, and of a serpentine form. On either side of the hill through which this tunnel passes are perpendicular cliffs, some of which are three hundred feet high and exceedingly picturesque. The gloomy aspect of this tunnel, even at mid-day, is very imposing; for when standing near the centre neither of its outlets can be seen, and it requires hardly an effort of the fancy for a man to deem himself forever entombed within the bowels of the earth.

Edward A. Pollard (1870:98), a visitor to the region several years after the Civil War, relays a taste of the adventure associated with seeing the Tunnel:

We were weary from riding when we got sight of the village of Estillville. Passing through the well-defined Moccasin Gap, after having crossed the North Fork of the Holston river, there suddenly came into view the twenty or thirty houses which compose Estillville, overlooking a beautiful bit of meadow bounded by a line of “river knobs.” It is a village that boasts of a half-finished church on the hill-side, and a new court-house with a cupola and gilt ball. Spending the night at a so-called hotel, where the real and unaffected kindness of the lady proprietor made amends for the imperfect accommodations, and more than compensated for the single dollar
that was asked for supper, lodging, breakfast for ourselves and stabling for our horse, *we were fortunate in making acquaintance with two young gentlemen, who accompanied and helped us in our journey the next day to the Natural Tunnel...* (emphasis added).

In a series of comments on the natural beauty of various portions of Virginia, W. S. Clark (1870:230) observed:

Virginia abounds in picturesque scenery. The most noted places are the Mineral Springs, Wyer's and Madison's caves, the Chimneys, the Natural bridge, Natural tunnel, Buffalo knob, and Hawk's nest. ...Through the Natural tunnel, passes a stream under an arch seventy feet in elevation, covered with a bed of earth twice that thickness.

Although somewhat brief, the descriptions and accompanying illustrations provided by William Cullen Bryant (ed., 1872: I, 337-339) in *Picturesque America* relay a subdued yet reverent sense of this natural wonder:

The Natural Tunnel, in Scott County, is the first point to which we will conduct the reader. The variety and beauty of the forest-growths constitute the most striking peculiarity of this southwestern portion of Virginia—one might say, the only striking peculiarity—and hence, no doubt, the surprise which the Tunnel excites when it is seen, albeit the spectator has been in momentary anticipation of the object of his quest. This surprise recurs at every visit to the Natural Bridge, and the Tunnel is a similar formation, not so lofty in its arch, but longer and more tortuous in its course through the hill or shoulder of the mountain. In the one case there is a short and nearly straight tunnel; in the other the tunnel is long and very crooked; in both cases the country-road runs over the tunnel, the traveller crossing it unawares. Stock Creek, a tributary of the Clinch, whose limpid waters have repeatedly wetted the hoofs of our horses in our zigzag course hither, has forced or found a passage through the ridge which stretches athwart the narrow, deep valley, and, in so doing, describes what railroad-men would call a “reverse curve,” one hundred and fifty yards in length. Thus, although the arch is seventy or eighty feet high, the light is intercepted, and, even when the sun is at its zenith, the passage of the Tunnel is attended with difficulties. At other times, when the rising or declining orb lends but a partial and imperfect illumination, the subterranean traveller, plunged in Cimmerian darkness, cannot repress a feeling of genuine horror as he toils through the central portion of the curve, and, as he emerges, hails the sunshine with rapture, exalted and prolonged by the precipices of naked rock ascending sheer three hundred feet above and around him; while higher yet rise the verdurous crests of the forest-crowned summits, and above all bends the intense, unfathomable blue of the welkin. A master of hyperbole might exhaust his store of rhetoric upon this spectacle, which the man of plain speech would be content to call very wonderful. In truth, it is a curiosity of Nature—unique, if not sublime. When the Cumberland-Gap Railroad—not yet begun—is completed, and when West meets East at Bristol-Goodson—the proposed starting-point of the projected road—when that bright day shall dawn, the Natural Tunnel will have countless admiring visitors, most of whom, unfatigued by horseback-journeying over roads none too good, will be content to linger [sic, linger] longer than we did. It is said that the projected road must pass through this tunnel, there being no other practicable route. If this be true, and if thereby this great wonder be seriously impaired by cutting off one or the other of its curves, then the lover of the picturesque may hope that the road, serviceable as it may be to travel and traffic, will never be built.
But a few years later, Edward King (1875:570; see also King 1874:657) would subsequently remark in his book, *The Great South*:

The “Natural Tunnel,” forty-two miles from Bristol, near the ford of the Clinch river, is a passage, about 800 feet in length, through battlements of solid stone. The vaults of the tunnel rise to the height of eighty feet; and, where the arch finally terminates in the mountain slope, there is a sheer precipice 500 feet high.

**Closing Remarks**

Even the present brief sampling of nineteenth century accounts of visits and descriptions of the Natural Tunnel (and there are undoubtedly many others yet to be found in volumes and articles devoted to geology, regional history, travelogues, and various reference books of the era) is sufficient to demonstrate a sustained and unabated interest in this site beginning with Stephen H. Long’s 1831 visit (Anonymous 1832) and continuing through the later portion of the century. These visits were but one aspect of the Tunnel's historic era usage. In a tabular timeline of a sample of the historic events which have transpired at Natural Tunnel appearing in the website “Caves of the United States: Natural Tunnel” (accessible at: <http://www.showcaves.com/english/usa/caves/NaturalTunnel.html>), it is noted that in 1890 – almost 60 years after it had been surveyed by Stephen H. Long – “the South Atlantic and Ohio Railroad arrived and laid tracks through the tunnel” and in 1906 the “Southern Railway acquired the tracks and created a passenger line, the Natural Tunnel Line, that went through the tunnel.” Thus, in addition to its other attributes, this is the only known natural tunnel formation to have been used as a railroad tunnel–a function it continues to serve.

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NITRE BUREAU CAVE LIGHTING

Marion O. Smith

During its three years of existence, the Confederate Nitre Bureau mined over fifty-five caves on government account. These caves were primarily disbursed along the Appalachian Mountains from the Virginias to Alabama, and within the confines of ten out of fourteen districts overseen by the Bureau. For years the writer has been studying the Bureau, resulting in “histories” of many of the government operated caves as well as mines, artificial niter beds, and other facilities. The source of much of the data concerning these sites has been Confederate Papers Relating to Citizens or Business Firms, the originals of which are housed in the National Archives, with microfilmed copies available for circulation. Scattered among these files are bits of information as to what kind of lighting material was used in a number of Bureau operated caves. Although very incomplete and weighted geographically more toward Alabama and Georgia than elsewhere, this source enhances knowledge about the illumination of Civil War saltpeter caves.

Generally, caves mined by the Confederate government were lighted by lamps, candles, and in rare cases, fire baskets. Many employed one or the other or both of the first two, but only occasionally were all three used at the same site. Information regarding lamps purchased by the Nitre Bureau is very limited. None of the lamps are adequately described or are their makers noted. Captain George Arnold of the Bureau’s Second Division office at Augusta, Georgia, on July 28, 1862, acquired “12 miners lamps @ 1.00” for “mines & caves.” The superintendents of Districts Four (West Virginia-Virginia), Four and a half (Virginia-West Virginia), Seven (East Tennessee), and Eight (Middle Tennessee and North Georgia) at various times from May 20, 1862, through May 14, 1863, bought respectively: “9 Doz small tin mining Lamps . . . @ $4 pr doz”; “six miner lamps” at fifty cents; “4 Lamps @ .50¢”; and “8 Shade Lamps @ .75¢,” “5 small Lamps @ 25¢,” “3 Tin Lamps @ 26,” and “12 Tin Lamps @ 40 ea.” Purchases on October 6 and 31, 1862, were for specific operations in Morgan and Jackson County, Alabama: “6 Oil Lamps” at fifty cents for Eureka Cave and “6 Glass Lanterns @ .50/100” for Sauta Cave. Along with the lamps there were acquisitions of lampwick. Examples are “10 Balls . . . for lamps at Lookout Cave,” Hamilton County, Tennessee, at ten cents, June 18, 1862, and four pounds for Big Spring (now Guntersville Caverns) Cave, Marshall County, Alabama, the following October at a dollar.¹

A number of Nitre Bureau records relate to the kinds of fuel used in lamps. Lard was especially common in Georgia and Tennessee, and to a limited extent in West Virginia. Between August 23, 1862, and March 4, 1863, 880 pounds was bought for lighting Bartow (now Kingston Salt peter) Cave, Georgia. About the same period, November 30, 1862, to April 20, 1863, 649 1/4 pounds were purchased for Battle Creek (now Monteagle Salt peter) Cave, Marion County, Tennessee. During May and June 1863 thirty five and a half pounds were acquired for Pack (now Hooker) Cave, Dade County, Georgia and 187 pounds for Nickajack Cave, Tennessee. In West Virginia, lard was bought for “Lamp Oil” in small quantities at several government operations: Manns Cave, six and a half pounds; Muddy Creek (now probably Pollock Salt peters) Cave, 133 pounds; Centreville (now Greenville Salt peter) Cave, three pounds; and Second Creek
(now Haynes) Cave, fifty pounds. Additional amounts of sixty-five and three pounds were obtained for general use in the Eighth and Fourth Nitre Districts. The price for lard varied from sixteen cents to a dollar a pound. However, on June 4, 1862, a gallon of lard oil for Partens Cave, Floyd County, Georgia, cost four dollars.\(^2\)

Linseed oil was used as lamp fuel in West Virginia and Alabama. From April 1, 1862, through January 1, 1864, ninety-nine and three-tenths gallons were bought solely for Second Creek Cave. On February 1, 1863, six gallons were acquired for Centreville Cave, and the following April 30 four more gallons for Muddy Creek Cave. At other times, between November 10, 1862, and August 31, 1864, 116 4/5 gallons were purchased for general use in the Fourth District, with twenty-two of those gallons to be distributed “at Organ & Centreville Caves.” On November 19, 1862, ninety-nine and a half gallons were bought in Atlanta for consumption in North Alabama’s Ninth District. The price per gallon for linseed oil ranged from $1.50 in Spring 1862 to $15 in early 1864. On another occasion, December 31, 1863, one and a half bushels of flax seed, at five dollars per bushel, were obtained “for manufacturing Oil for Lamps” in the Fourth District.\(^3\)

Apparently, cotton seed oil was also sometimes used in lamps. On July 29, 1862, Captain Arnold at the Augusta Second Division office bought forty-three gallons. His cost was $3.25 per gallon and it was for distribution at “caves & mines.”\(^4\)

Sauta Cave, a few miles west of Scottsboro, Alabama, for a while was the largest saltpeter mining operation in the Confederacy, with 163 to 191 employees of all kinds February-May 1863. A series of private contractors mined it before the Nitre Bureau took over in late 1862. The inventory of the apparatus and fixtures used by the last contractors, Carlisle and Henderson, reveal that part of the cave’s illumination was by use of “5 Wire Fire Baskets” and “6 Reflectors.” During the three months beginning November 1, 1862, at least forty-eight loads of pine wood was purchased for the cave. Out of this amount seven loads were classified as “Fat Pine” and sixteen others as “torch pine.” Since “fat pine” and “torch pine” are also referred to as “kindling wood” and “pitch pine,” possibly the former was used in the fire baskets while the latter was distributed along ledges, cracks, and crevasses. On the last day of 1863 two loads of pine was purchased for use at Centreville Cave, Monroe County, West Virginia. Pine cost per load $2.50 in November 1862 to $8 three months later. During latter 1862 wire fire baskets were obtained for use at Cave Spring Cave, Floyd County, Georgia, and Eureka Cave, Morgan County, Alabama.\(^5\)

Candles were widely used in Confederate saltpeter caves. Although surviving data does not reflect it, undoubtedly many pounds of candles were bought for such sites. On November 8, 1862, Captain William Gabbett, superintendent of the Ninth District in Alabama, purchased “20 lbs star candles @ 1.00.” Later, February 20 and May 19, 1864, for $1.75 a pound, H. H. Barclift and F. M. Nixon respectively contributed four and one pounds of candles for lighting Big Spring Cave and Nixon’s Niter Works (now French’s Saltpeter Cave) in Marshall and Blount Counties, Alabama.\(^6\)

Extant data regarding candles used at government saltpeter caves more often involves ingredients with which to manufacture them rather than purchases of ready-made candles. Tallow, beeswax, and wicking were frequently sought after, with tallow seemingly the substance most often used to make candles. At least that apparently was the case in Alabama. Between October 3, 1862, and March 7, 1864, twenty-two and a
half, five and a half, eighty-two and three-fourths, eighty-nine and a half, and 530 ½ pounds of tallow were bought specifically for Little River (now Daniel), Fort Payne (now Manitou), Eureka, Sauta, and Trinity Caves, all in Alabama. Sauta Cave most likely consumed large numbers of tallow candles. The importance of tallow to Sauta is noted by the hiring of William Dempsey as a “Special messenger” November 20-21, 1862, to buy tallow for that cave. The following February Captain Gabbett acquired from Huntsville merchants and impressive 1,060 pounds, which no doubt was used at Sauta and the several other North Alabama government caves.7

Beeswax to a less degree was acquired for candle manufacture. Between October 4, 1862, and May 23, 1864, two, twenty-four and a half, and two pounds were purchased for use at Eureka, Blue Mountain (now Weaver-Lady), and Long Hollow Caves in Morgan, Calhoun, and Marshall counties, Alabama. On other occasions, from February 1863 to August 20, 1864, a minimum of 162 ½ pounds was bought for general use in the Ninth District. The price for beeswax ranged from seventy-five cents to four dollars a pound. By the last year of the war Confederate money had depreciated to such a degree that barter was sometimes used to obtain some of the supplies for saltpeter caves. In late August 1864 T. J. Robinson, superintendent of Cedar Mountain Niter Works (now Horse-Adcock Caves), Blount County, Alabama, explained to Captain Gabbett his difficulty in acquiring beeswax for candles:

> ... I will be compelled to use Taper lights in Cave. ... I was told before leaving Blue Mountain [Ninth District headquarters] that I could buy any quantity of Beeswax in this country, and I can but not with Confederate money. I can get it for wheat, an old Widdow woman offered me 40 lbs wax for 8 bushels wheat. I would have made the trade if I'd had the wheat. I sent to Borrans [J. D. Borin, the sub-district superintendent at Little Warrior (now Crump-Horseshoe) Cave, Blount County] for the wheat but he could not furnish or any beeswax either, hence I am in a tight place for light ... but I will make out some way, if I have to resort to catching fire flies.8

Candlewick or thread for wicking were purchased by the Nitre Bureau for candle making by the ball, bale, or pound. From April 22 to September 30, 1864, at least “8 bales ... @ $2” and nine and a half pounds, at $3 and $4, of candlewick were acquired for Blue Mountain Cave, Alabama; February 1, 1863, one ball at fifty cents for Centreville Cave, West Virginia; July 25, 1863, fifty balls at a dollar for Sauta Cave; and October 4, 1862, four balls at twenty-five cents for Eureka Cave, the latter two sites also in Alabama. On October 31, 1862, and August 20, 1864, twenty-five balls and six and a half pounds, at twenty-five cents and two dollars, was bought for the Ninth District generally. Fourteen pounds of cotton wick at a dollar a pound was bought February 4, 1863, “for camps ... at Battle Creek Cave.”9

The above information, although lopsided and undoubtedly very incomplete, provides data about the lighting of twenty-two caves mined by the Confederate government. In summary, lamps only were mentioned for ten; candles only for seven; fire baskets only for one; a combination of lamps and candles for one; a combination of lamps, candles and pine for one; and a combination of fire baskets, lamps, and candles for two.


3. Ibid. (M346, Rolls 68, 105, 117, 246, 742, 870, 940, 1052), John J. Black, E. M. Brown, A. B. Budd, Joseph Dickson, Nickell & Hutchison, Roberts & Co., James Skeen, Edward C. Vass Files. On May 22 and August 14, 1863, James M. Nickell and W.H.H. Trice respectively provided two and a half gallons “Lamp oil” and a half gallon “oil” at sixteen dollars a gallon for Second Creek Cave, which was likely linseed oil. Ibid. (M346, Rolls 742, 1037), James M. Nickell, W.H.H. Trice Files.

4. Ibid. (M346, Roll 806), Plumb & Leitner File.


Bizarre Journalism at Fountain Cave and its Lessons for the Speleohistorian

By Greg Brick

Fountain Cave, in St. Paul, Minnesota, was the state's first show cave, in the 1850s. In the Fountain Cave files that I have amassed over the years, no items have struck me as more bizarre than the two newspaper clippings transcribed below. Ironically, among the welter of fanciful details, they also contain valuable historical details not published elsewhere. This provides a lesson to the speleohistorian. There's a tendency to summarily dismiss a document if one flawed fact or deliberate fancy is found therein—it becomes an “unreliable” source. But I have found that everything in a document must be judged separately, on its own merits. The unit of evaluation is the individual datum, not the entire document. I have learned to treat everything I come across merely as “leads”—they may be true or false, I don’t know immediately, I need to investigate them more thoroughly before calling them “facts.”

For example, the clipping from 1920, presented complete below, is marred by the bizarre stories of “white-robed specters” and the bogus account of the cave’s origin. The dates are way off. The anonymous reporter even got Parrant’s first name wrong—it should be Pierre, not “Joe.” Time to throw it out? Not quite. It’s the only published source to explicitly state that Fountain Cave was incorporated into the sewage system of the Omaha railroad shops—something known otherwise only from obscure Public Works contracts.

The clipping from 1945, presented in part, makes you wonder if the columnist, Mark Fitzpatrick, was drunk when he explored Fountain Cave—that is, if he even went there in the first place. Although this sandstone cave was devoid of speleothems, he describes it as “overhung with drooping stalagmites.” And never mind that stalagmites grow from the floor, not the ceiling. On the other hand, he is more explicit than any one else regarding the sinking stream at Fountain Cave—its origin, course, and the proper location of the sinkhole, which not even Newton Horace Winchell, the pioneering State Geologist, got exactly right. Nor have I found a better thumbnail sketch of the former Fort Road wetlands, whose waters drained into the cave. So there are pearls in the seaweed.

FINE BOULIVARD [sic] APPROACH TO HISTORIC FOUNTAIN CAVE, HOPE OF PIONEER BODY (St. Paul Pioneer Press, August 8, 1920)

When Abram Perret, who is reputed to have been the second settler in Ramsey county, moved down the Mississippi river from Camp Coldwater, a few miles above Fort Snelling in the spring of 1822 he was attracted by a large opening in the face of the sandstone bluffs along the river bank, a few miles below the junction of the Mississippi and the Minnesota rivers.

Pausing momentarily in his search for a suitable site for a homestead he explored the mysterious looking hole in the rock. Graduating from the crescent shaped doorway about five feet in height inside was found a spacious chamber, which seemed to stretch an interminable distance into darkness. By candle light he was able to find his way to the far end of the room, where another doorway opening of a similar chamber was located. Investigation proved the series of chambers stretched back into the hills for more than a mile, finally terminating in an outlet at the base of the larger bluffs, which once marked the edge of the river bed.
The immense cavern held forth many possibilities to Perret, who was anxious to become settled so that his wife and children might be assured shelter from the long, cold winter.

**Pig’s Eye Joe on Scene.**
At that time the only other settler living in the vicinity was the man who is accredited with being the original inhabitant of Pig’s Eye, one of the earliest towns along the river bank, which later merged with the others, forming the city of St. Paul. Pig’s Eye Joe Parrant, as he was called, appeared to be the lord and master of the territory adjacent to the caves, a conference with him was necessary before Perret could establish permanent residence on the spot.

As the outcome of the consultation the two men agreed there was plenty of room for both and it was decided each should occupy the land on either side of the cave, with a small creek that flowed out its mouth to mark the dividing point of their domains. And so a settlement was founded that was destined to play an important part in the history of the great Northwest.

But the cave—the object that was responsible for the growth and rapid development of the little town—today is neglected and forgotten by the hundreds of thousands of persons who walk the streets of the city that once was Pig’s Eye.

The spot that was the storehouse of provisions for settlers from miles around, enabling them to live in peace and plenty during the winter months, now is surrounded by desolation and is used as a part of the sewage system of the Omaha railroad shops.

**Recalls Memories of History.**
Perhaps but few persons in St. Paul, outside of the descendants of the early settlers ever have heard of Fountain cave, but to those who know of it the name recalls memories of its historical relationships and the wealth of Indian folk lore related among the pioneers concerning it.

Old legends have it that the spot once was the meeting place for various tribes of the Sioux about to start on one of their numerous wars against the Blackfeet in North Dakota, and in this respect occupied a place of equal importance with Carver’s cave in the walls of Dayton’s bluff, where Jonathan Carver, the English explorer, late in the eighteenth century, recorded a meeting between himself and Sioux chieftains.

Also the cave is said to have been the favorite retreat of early brigands, who, forced by the soldiers at Fort Snelling to cease their operations, sought safety for weeks at a time in its recesses.

In later years children of the settlers playing within its chambers heard shrieks of the dying Indians, just as they had occurred hundreds of years before, when put to death by their enemies and saw white-robed spectres floating from chamber to chamber, it is said.

Even now, after one has found his way down the tortuous sides of the river bank to the spot where a few fishermen’s cottages still stand, children of the neighborhood will tell of the strange happenings that go on in the ravine at the mouth of the cave.

**Hieroglyphics on Walls.**
Just how the cave came into being, or how long it has been in existence, never has been determined, and probably never will be. Evidences point to the possibility that it was hollowed out by human hands, for the interior chambers are square in shape. Judge A. W. Bazille of the probate court, who is a grandson of Abram Perret, and who himself played in the cave as a boy, though never daring to venture into its recesses very far, is authority for the statement that hieroglyphics have been found on its walls.

Though it is but a ten-minute walk from the street car, it is a difficult task to reach the cave, for one must walk along steep places at the very edge of the river, where a misstep would mean a bath in the waters of the Mississippi. It is situated back in a ravine filled with trees and brush about a half mile above the City hospital, along the river’s edge. Directly in back of it and fencing it off from
direct communion with the outside world is the Omaha railroad shops and a coal yard. To reach it, therefore, it is necessary to walk to the river bank about a block below the ravine, and then go west along the river’s edge until the opening is reached.

If plans of the Junior Pioneers of St. Paul succeed, this devious route will some day be eliminated, and a wide boulevard will connect it with the River drive at Fort Snelling. In working along these lines, Otto Rohland, chairman of the committee on civics for the organization, was successful several years ago in getting old residents of the spot to deed to the city a strip of land approximately one mile long and 200 feet wide, that could be suitably used for that purpose. Rohland has hopes that purpose. Rohland has hopes that the near future will see the fulfillment of his wish that persons now living in St. Paul may know intimately the cavern that meant so much in the lives of the city’s earliest residents.

“Otto W. Rohland and West End Gardens,” by Mark Fitzpatrick (St. Paul Shopper, April 25, 1945)

It was in the year 1817 when Major Long of the U.S.A. on a tour of inspection of the upper waters of the Mississippi river discovered and gave the name “Fountain Cave” in a picturesque grotto on the shores of the Mississippi overlooking the wooded island of Pickerel lake. In early times one entering the grotesque lunar shape mouth of the cave beheld a magic island with a natural fountain playing dreamingly with its hazy spray and misty prismatic rays. On all sides of the main entrance were labyrinth chambers deep in size and overhung with drooping stalagmites of a unique conception. The waters feeding the fountain of the cave flow from springs and streams near the old Kramerath flour mill near the old city limits—its large water wheel murmuring—“Down by the Old Mill Stream”, gurgling through the swampy mounds passing near the old Wurm Brewery until it enters Fountain Cave on the grounds occupied by the Chicago, St. Paul and Omaha shops.

Of recent date the Junior Pioneers organization, who have been outstanding in all civic movements, are desirous that the city authorities procure this site for a public garden and park. It will prove a great asset and attraction to our progressive city.
James G. Mitchell and the Schroeder's Pants Cave Tragedy

By Jack H. Speece

The James Mitchell Award was established in 1970 for the best scientific paper presented at the NSS Convention by someone less than 25 years of age. It was named in honor of James Mitchell (NSS #7175), a chemist at MIT graduate school working on the Gemini Space Project, whose death in Schroeder's Pants Cave in 1965 brought national attention to a small cave in Herkimer County, New York. The unsuccessful rescue/recovery effort, under the direction of William Karras, was controversial and is still discussed in the caving community. No one likes to leave a body behind. What was thought to be a closed incident, however, was reopened in 1967. The secret of the cave's opening slowly spread among cavers and in 2006 a group re-entered the cave to recover the remains of Mitchell’s body. A movie is now being planned by Christian Lyon to tell the story.

Herbert Schroeder, namesake of the cave, was supervising principal of Dolgeville Central School, in Dolgeville, NY. He was shown a sinkhole pit in a wooded area by a local farmer in 1931 while surveying roads for school bus routes. After a very heavy rain, the pit opened into a cave. Schroeder returned with George Lyon and his brother Landon and began to explore the cave. An iron gate was erected about 1941 to control the entrance and protect beautiful formations. A cave exploring group was organized in the Little Falls, NY, area, which became the Adirondack Grotto in 1948. Dye tracing revealed that the cave stream emptied into East Creek about three miles away. It wasn't until 1948 that the cave was reported in the local newspaper, but obscurely, to avoid giving away the entrance. This was after famous author Clay Perry had made a visit. It was then referred to as Manheim Cave, named after a nearby community, but since Schroeder twice lost the seat of his pants there, the alternate name became more memorable. The cave was written up in the NSS News numerous times in the late 1940s and appeared in the 1959 Speleo Digest.

On Saturday morning, February 13, 1965, James Mitchell, who was Vice Chairman of the Boston Grotto, Hedwig Miller, and Charles Bennett, left word with the handyman at George Lyon's that they were going to assault the pit and planned to return by 5:00 PM. They had prepared for this trip for the preceding two weeks. This would be Mitchell’s third visit to the cave. Although Mitchell had been active in caving during his undergraduate years with the St. Louis Grotto, his caving experience is not fully known; Miller was classified as a moderately experienced caver, and Bennett was a novice. The eighteen slashes on Mitchell's helmet were said to represent the number of pits he had entered. Although January and February is usually a good time to explore underground stream passages, after a five-day thaw, snow and ice had melted and entered the cave.

About 5:00 PM, Mitchell rappelled into the pit with the aid of an iron tripod to explore a side horizontal lead located 20 feet below the top of the shaft and 50 feet above the pit floor. He returned and prusikied back up the rope in a cascade of 34°F (some say 38°F) water flowing at eight to ten gallons per minute. His light went out, his hands became numb, the knots jammed, and he became stuck about eight feet from the top. He called for his teammates to pull him the rest of the
way up. After 45 minutes of effort, the attempt was unsuccessful. Miller told Bennett to go for help while she remained at the top of the pit. Mitchell was no longer responding to her calls.

About 7:00 PM, Bennett reached the farmhouse of Mr. Gressler, located almost a mile from the cave’s entrance. They phoned George Lyon in Dolgeville about six miles away. Lyon was the Justice of the Peace, leased the land, and was familiar with the cave. Lyon contacted the State Police, the local fire department, and several others, including his son, Marsden Lyon, son-in-law Ralph Williams, and the Petrovsek family (eight brothers with snowmobiles). There was difficulty working in the dark in -20ºF weather, with over a mile to trek through snow-covered fields and woods, but the snowmobiles were a great asset. It was so cold that the siren on the firehouse did not work so they drove a truck into the street to sound the alarm.

By 8:30 PM, Ralph and Marsden arrived in the pit room. Miller was escorted from the cave to receive medical attention for exposure. Ralph and Marsden were successful in raising Mitchell less than a foot due to limited space in the passageway. By 1:00 AM Sunday, more help arrived. George Lyon and Ed Strewski relieved Ralph and Marsden and continued trying to pull Mitchell out of the pit. Mitchell had lost consciousness and was hanging horizontally. Water was striking his shoulder and spilling onto his face.

Meanwhile, the State Police contacted Bob Fenichel, Chairman of the Northeast Region of the NSS, who then contacted William G. Karras, founder of the National Capital Rescue Team (NATCAP). Karras made arrangements to have Air Force 2 fly his team to Rome Air Force Base (AFB) in Rome, NY, and then via helicopter to Dolgeville. About 4:00 AM, the police escorted them to the home of George Lyons, where they were briefed on the situation. The team was taken to the scene about 6:00 AM amidst hundreds of curiosity seekers. They sledged to the entrance with all their equipment.

About 4:00 PM, one of the members of the rescue team left and returned to Rome AFB. Next, Karras allowed only members of his team to access the cave. The last local to leave the cave was Strewski. A large generator and lights were requested and delivered by 6:30 PM.

A doctor arrived with an electronic stethoscope and requested to check the body. Karras decided to make the test himself and reported to the State Police at about 8:30 PM that he had lowered the device down to Mitchell's chest and could not detect any sign of life. Karras and John Sanders then returned to lower the body to the bottom of the pit. Karras failed to obtain positive identification of the body for the officials (sources say Mitchell had a wallet containing $300).

A camp was set up around the pit and activities continued throughout the night. The rescuers tried to determine how the body could be extracted. At some point during this period of time, film footage was made which later would be made into the movie *The Schroeder's Pants Incident*. The film was available for rent to members of the Speleological Society of America (SSA), which Karras organized in October, 1966.

On Monday morning, February 15, George Lyon became concerned about the recovery effort. Little progress was being made. Karras seemed to be taking more interest in the news reporters than in retrieval of Mitchell’s body. Lyon requested that Karras make a map of the cave so they could drill a hole into the pit. The survey was completed by evening in preparation for drilling a series of 6-inch diameter holes.

On Tuesday morning, February 16, the drill rig was in place and the first hole was advanced through 35 feet of overburden to within four feet of the center of the pit. After several more holes were drilled, Karras reported that the cave was collapsing and that tons of rock, mud, and debris had almost killed him and several others. The drilling was stopped.

Shortly after noon that day, Karras reported to the State Police that he had placed Mitchell’s body in a bag and that further collapse had created a perilous situation. He recommended that the cave be dynamited shut. The police assisted in obtaining the explosives and proceeded to charge the drill holes. One report states that 200 sticks of dynamite were used. About 2:30 PM the area was
cleared and the huge charge detonated. By 3:30 PM, NATCAP prepared to leave, with a final meeting to be held in the Dolgeville High School auditorium. Karras gave his report to a full audience, making derogatory remarks about members of the community, including George Lyon. Just before 5:00 PM, as he prepared to board a helicopter to return home, the community presented Karras with a new outfit of clothes and boots in gratitude for his efforts.

The Mitchell story became front-page news. The press releases from the various wire services were full of errors. No two were alike. Few mentioned sources other than Karras. Some articles were so erroneous that it made one wonder if they were even reporting the same accident. It reminded some of the Floyd Collins media circus in 1925. It seems that reporters will sensationalize what they see and have little time to verify the facts before they race for their publishing deadline.

It was said that Mitchell’s parents were notified of the accident but were unable to come to the event. Some interpreted this as lack of interest. Locals stated that his parents refused to provide for a funeral. The Associated Press notified Mitchell’s uncle and he did come to visit the cave entrance.

After everyone had left the scene on Tuesday night, several of the Lyon family returned to board up the entrance and covered it with leaves and debris. By Wednesday morning the job was completed with two loads of stone over the entrance and a smaller load over the drill holes. Most were satisfied that they had done their best under the circumstances.

Herkimer County was left with quite a debt after the rescue, even though local residents had donated much. George Lyon documented 10,000 cups of coffee, 3,500 sandwiches, 62 men, ten skidoos, snowshoes, a drill rig, and a bulldozer. The locals talked about the tragedy for years afterwards.

NATCAP went on to make additional headlines with other cave rescue attempts. Karras was banned from the NSS due to various misrepresentations and unpaid bills. Another group, the Hondo Underground Rescue Team (HURT), had been formed in St. Louis, Missouri. Due to the attention-seeking behavior of the rescue organizations, many cavers thereafter branded all similar groups as mere glory seekers. It took about a decade for specialized rescue teams to rebuild the faith of the caving community.

In the summer of 1967, Jim Crane and Duane Lyon were visiting the entrance pit and heard rocks falling below. After digging a few feet, they discovered that the cave was reopening itself. They shored up the entrance and covered it with stones. On a return visit they found the cave intact and not blown shut, as previously thought. A white memorial cross was painted on the cave wall in the “easy” passageway. There was no evidence of a collapse, only a small cavity where the drill had broken through the ceiling.

In the fall of 1967, Jim Crane finally reached the bottom of the pit and found Mitchell's body. It was doubled over, directly under the pit, and the rope had been cut. Rope was draped all around and there was some rock debris on top of the body. It was as if the body had been allowed to fall from above, and no body bag was evident. It appeared that Karras could have retrieved the body. They photographed the evidence and decided to keep it all a secret in respect to the memory of Mitchell and to avoid any possible law suits. The truth was entrusted to a select few.

The secret however, caused the Dolgeville group to refer to the cave by different names such as Buttonhole Cave or the Herkimer System. It was believed that the cave might be extensive enough to connect to other pits in the area. Nearby sinkholes, such as Zurlo's Pants Cave and Bottomless Pit, were explored in hopes of connecting to Schroeder's Pants Cave, but none did so; this effort was referred to as the Van Hornsville Project. Several years later, there were reports that a connection was finally discovered but nothing was published. A permanent ladder was rigged in the pit in addition to the special iron tripod and winch placed in the pit room. Mitchell's grappling hook, specially made to assist in negotiating the upper ledge of the pit, was removed and given to Ernst Kastning.
As the secret leaked through the caving organizations, rumors also spread. No one tried to correct the prevarications that were being told. It was felt by some that these exaggerations would help to protect the cave by keeping people away. The fear of being involved in legal ramifications kept those who were involved from speaking out. In a further effort to maintain the secret, Clark Downey falsely reported to Paul Damon, editor of *Caving in America*, the 50-year history of the National Speleological Society, published in 1991, that “The body was later quietly recovered by Lew Bicking and Jerry Frederick.” Note that Bicking died on October 30, 1966.

Lead by Downey, the NSS cavers at the time considered raising funds for a lasting memorial to Mitchell; however, Mitchell’s parents came forth and provided funds to the NSS to endow an award in his honor. Numerous cavers also contributed to the fund. Thus the James Mitchell Award was created for the best scientific paper presented by someone under the age of 25 at the annual NSS convention. In 1970, Massachusetts caver and Boston Grotto member, Peter M. Hauer, was the first to receive the award. Peter had known Mitchell personally, and was proud of the recognition.

In 1969, Downey arranged with George Lyon to purchase a bronze plaque to be placed on a stone at the cave entrance. Nothing happened until 1972, when Downey finally bought an engraved granite monument from Fort Plain, NY, at a cost of $327.50. It sat in Lyons’ barn until November 24, 1990, when a team assembled (Clark & Tim Downey, Jim & Kerry Crane, and Monty Lyon) to discreetly transport it to the pit without anyone becoming suspicious of the secret. Today it remains above the entrance. It reads:

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IN MEMORY OF
1942     JAMES GENTRY MITCHELL     1965
GOD REST HIS SOUL
WHILE EXPLORING SCHROEDER'S PANTS CAVE,
JIM DIED FROM EXPOSURE TO THE WATERFALL.
HE LIES SLEEPING FOREVER IN THE CAVE HE LOVED.
HE IS NOT FORGOTTEN BY SOCIETY OR HIS FRIENDS.
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In June, 2006, Christian Lyon (grandson of George Lyon) organized a group of cavers, including Bill Mitchell (James' brother), to re-enter the cave and retrieve Mitchell’s remains. The questions being asked today are the same questions asked about Karras forty-one years earlier. Cavers want to know, "Who is he to decide that this secret should be brought to light?" Was this a request from the land owner, the locals, or relatives of Mitchell? Who cut all the red tape to accomplish this without legal ramifications? Is this another Hollywood adventure for fame and glory? Is this really "a story that needs to be told"?

ACKNOWLEDGMENT

The photograph of James Mitchell was used with permission of the National Speleological Society.
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History of the Cascade Grotto—the First 35 Years

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The Cascade Grotto's application was signed 21 May 1951 by 10 NSS members, mostly in the Seattle area. In those days of two-lane highways, no limestone cave was known in western Washington. Oregon Cave was a 14-hour drive from Seattle. The lava tube caves of Mount St. Helens and Mount Adams were believed to be few and hidden deep in the wilderness. And the closest cave in Canada was believed to be Nakimu Cave in Glacier National Park. Diligent searches began to unearth limestone caves south of Mount Baker and high above Snoqualmie Pass, but the obstacles were too great for the remaining founders and the grotto became inactive around 1955 after publishing just six issues of *Cascade Cave Report*. Almost at once, however, new cavers and new access produced a spectacular rejuvenation with a strong international orientation. A new publication—*The Cascade Caver*—appeared in 1961. The grotto subsequently emphasized international vulcanospeleology. It also pioneered American glaci speleology but its studies of the summit geothermal caves of Mount Baker were cut short by the 1980 eruptions of Mount St. Helens. There it undertook 20 follow-up study trips to caves and pseudokarsts in the "Red Zone". My own close involvement with the grotto ended after 35 years, in 1986. The grotto got along just fine without me.

Schroeder's Pants Cave

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In the fall of 1947, brothers George and Lyndon Lyon along with Herb Schroeder discovered a beautifully decorated cave that they would explore and lead school groups into for the next 18 years. On one of those explorations, Herb wound up "pantsless" due to his size and the tightness of some of the squeezes. The cave would become known the world over as "Schroeder's Pants Cave". It was featured in numerous articles in the *NSS News* in the late 40's and early 50's and talked about throughout the Northeastern Grottos.

Twenty-three year old James Gentry Mitchell of Waterville, Ohio, who was living and working in the Boston area, came to Dolgeville, New York, on February 13th, 1965, with two inexperienced cavers from the Boston Grotto. The 3 began exploring the cave to the point where James is lowered into a 70 foot bell shaped room. Freezing water was pouring on him at this point and eventually led to his death.

The National Capital Rescue Team was called to the scene but ultimately, and not without controversy, determined that it was not possible to get the body out. The cave was dynamited shut. In June, 2006, a group of experts, along with Mitchell's brother, made a return trip to the cave to finally retrieve the remains of James, for burial at Mitchell Lake, Ohio.
Two 1851 Accounts of Grotta del Cane

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Located in the Phlegrean Fields volcanic area near Naples, Italy, Grotta del Cane contains a concentration of CO2 sufficient to anesthetize dogs (hence the name "Cave of Dogs"). As such it long was touted as a touristic curiosity. Recently one of us (WRH) encountered two 1851 English-language observations which occurred a few days apart. One suggested that the cave is artificial. Investigation by one of us uncovered relevant published and important unpublished data of Rosario Varriato which shows the following: (1) The cave is artificial. Probably it was excavated in pre-Roman Greek colony times, in pyroclastic material, as a "sudatorium" (excavated sauna). (2) An illustration in A. Kircher's 17th Century Mundus Subterraneus seemingly showing the cave as an unroofed space in a travertine basin reflects imagination by the illustrator. (3) Probably in Roman times the cave was invaded by anesthetizing levels of CO2. This was demonstrated with dogs until about 1930. It was closed from 1970 to 1998 as a safety measure. In 2001 it was reopened and cleaned. Current CO2 concentration data are not available. (4) The cave is T-shaped. The entrance is 1.9 m high and 0.9 m wide. Its passage slopes downward at 20 degrees to the middle of a rectangular space about 3 m high and 9 m long. A hole in this room extends to the ceiling but is choked. The midpoint temperature is about 45 degrees C, and the cave is hotter farther inside.

Additional Facts about the Shroeder's Pants Cave Incident

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Tim Downey is a member of the NSS and son of the late Clark R. Downey who was a renowned NSS Caver. He will be speaking about his father's findings on the tragedy from 1969-1990's. He will be presenting photographs and factual documentation on the tragedy based on Clark Downey's interviews with residents of Dolgeville who were there in 1965, and from Tim's personal experience. Tim will discuss what the story means for us today and how it affects us as a national caving society in the future. In 1965 it had been reported that Shroeder's Pants Cave had collapsed as a result of drilling efforts in the pit room, that Jim Mitchell's body had been lowered to the floor and that there was no way of getting Jim's body out of the cave - thus the cave was permanently sealed by the State of New York. Tim will show that the cave had not collapsed, that Mitchell's body had not been lowered to the floor in the manner that had been reported, and that the rope had been cut causing a controversy which still rages today. He will also explain how his father was the one who erected the Memorial Stone above the Cave, and started the Jim Mitchell Award for the NSS. In closing, Tim is planning to bring a piece of Jim Mitchell's equipment which has never been seen before.
CAVE CLIPPINGS

What Should Cavers do During the Coming Influenza Pandemic?

I came across the following item on the front page of the St. Paul (Minnesota) Daily News for October 24, 1918, while studying the local impact of the great influenza pandemic of that year. The cave described in the piece was most likely located in the Trout Brook valley, just above its junction with Phalen Creek, and in that case, was dug in unconsolidated alluvial deposits. If on the other hand the nearby Swede Hollow was intended, it may have been a cave dug in the easily excavated St. Peter Sandstone. Either way, it doesn’t sound like much of a cave. But it’s funny how caves are sometimes associated with filthy living whilst otherwise, as in the example below, and with the current fad for the so-called “Cave Man Diet,” with healthy living! The snippet of William Carruth’s poetry added by the reporter was misquoted from the original; the word “fire-mist” refers to a nebula.

20TH CENTURY CAVEMAN, 80, IS CALLED VAGRANT

“A fire-mist and a planet,
A crystal and a cell,
A jelly-fish and a saurian,
And a cave, where cavemen dwell.

Then, a sense of law and order,
A face turned from the clod—
Some call it Evolution,
And others call it God.”

--“Each in His [Own] Tongue.”

George Robinson, 80, tried to revert to the ways of the cavemen. Policeman Jack Walsh wasn’t strong on evolution. He called it, in police vernacular, “vagrancy.” So, when he discovered Mr. Robinson digging a cave at 7th and Bradley sts. which Mr. Robinson intended to make his home—thus getting the best of the pesky apartment landlords—he promptly arrested the old man. Somehow or other, in spite of the fact that a cave life is mighty healthy, especially in these flu times, the cave stuff didn’t go very well in police court, today. “Haven’t you any home?” inquired Herman Nienstedt, court clerk. The old man shook his head. Judge Finehout continued the case until Friday, when Mr. Robinson will be examined as to his sanity.

All members are invited to contribute material to the “Cave Clippings” department!
“Nature’s Laboratory”: The Virtues of Antebellum Groundwater

This entertainingly hyperbolic description of Chalybeate Springs, in Minneapolis, comes from Frank G. O’Brien’s *Minnesota Pioneer Sketches*, published in 1904. A complete copy of the book can be found on-line at the Library of Congress website ([http://memory.loc.gov/ammem/umhtml/umhome.html](http://memory.loc.gov/ammem/umhtml/umhome.html)). Not only do the springs still exist, flowing as lustily as ever on the riverbanks in Pillsbury Park, but there are in fact seven of them (depending how you count), rather than just the two mentioned by O’Brien. The springs also live up to their name “Chalybeate,” meaning iron-bearing, as you may observe from the rust-stained soil and vegetation at their exit points. By 1889, however, the springs had lost much of their cachet, as indicated by newspaper commentary of the day.

Stopping the other day to quench my thirst at Donaldson’s ever-flowing fountain of water “sparkling and bright” my mind reverted to the Chalybeate Springs which were not the least of many attractions in this locality forty-odd years ago, and I was led to inquire: “What has become of them?” Many of the old residents will readily recall this Mecca to which thousands of invalids made pilgrimage in those early times to drink of the water and be healed of whatever disease they had. These springs were said to contain all the properties necessary to restore the physical system to its normal condition; were, in fact, a veritable “elixir of life.” So certain were scientists of this that chemical analysis was made, and so satisfactory was the result, that circulars were printed and scattered broadcast all through the Eastern and Southern states. Such a furore was created that invalids flocked hither from far and near, more especially from the South.

The rush was so great that our hotel capacity was inadequate to accommodate the visitors with any degree of comfort, notwithstanding the fact that there were several good-sized hotels which would be a credit to us even at the present time. Among those were the Jarrett House, St. Charles Hotel and American House, all located on the East Side and conveniently near the springs.
The necessity for additional places where strangers could be entertained, induced J. M. Winslow to erect the (at that time) magnificent hotel known as the Winslow House, which was demolished not many years ago to make room for the Exposition Building (now The International Auditorium) which occupies its site.

Previous to the war the Winslow House was crowded to its fullest capacity, not alone by those who had ailments, but by the wealth and fashion of the South who came hither to escape the heated term and breathe in our Northern ozone, and drink of the water that flowed so freely from the ambushed springs on the river bank.

All day long, during the months of June, July and August, could be seen ladies, old and young, plainly dressed and accompanied by their colored servants and nurses, each with goblet or drinking-cup of some description in hand, wending their way to the springs to invigorate their torpid livers with the impregnation of iron, magnesia and sulphur, as it oozed out of the reservoir in Nature’s laboratory.

These springs—there were two of them—were located on the left bank of the Mississippi, directly opposite Cross, Pillsbury & Co.’s hardware store, a short distance below where Pillsbury “A” mill now stands. The city fathers paid considerable attention to making the place attractive. Steps were constructed and a long promenade walk reaching from one spring to the other; comfortable benches were provided where the weary might rest “between drinks” and view the panorama spread out before them. Near by were the East Side Falls and the rushing current below, while farther away was the sparsely settled West Side, the picturesque beauty of whose Falls had not been desecrated, to any great extent, by the hand of man.

From this point could be seen the dilapidated old government mills, now the site of the Sidle, Fletcher & Holmes mill, and Spirit Island, which was quite generally believed to be haunted by the spirits of the departed braves who formerly inhabited this region. It was this, indeed, that gave the island its name, and clairvoyants were ready to vouch for the propriety of the name and also the belief of the people. We of less imaginative turn of mind attribute this illusion to the effect of the water, or fancied it the result of raising the flask at too high an angle.

This promenade at the springs was arched with wild grapevines, making a complete bower, secluded and fascinating.

We were at a loss in those days to keep track of the hour—or more correctly the minute—of the day. No two watches or clocks were alike, for we were not blessed with telegraph communication with the outside world; we were therefore, obliged to guess at the time and set our watches by the guess. This was so unsatisfactory that several public-spirited citizens united and sent east and procured a copper sun-dial, which was placed on a pedestal near the approach leading to the Springs. Evidently it was supposed that all in possession of a watch would visit the place for a drink and at the same time see that they were in line with the shadow. It was not an uncommon thing to find fifteen or twenty at a time setting their watches by the dial. Its days of uselessness—or perhaps we should say usefulness—were soon over, as it was stolen by some miscreant with the evident intention of melting it into copper, since he could see no sense (cents) in it while in that particular form.

As we polish up our dial of the past we are able to trace the shadow and can also catch the rays of sunshine that have come to us through the rifts in the clouds; revealing the fact that it is past noon, and the bright rim of the western horizon is rapidly coming into view.

Somewhere undoubtedly, the springs continue their flow as of yore, but what has become of the patrons of their palmy days? We listen, but our only answer is the echo of our questioning.
**BOOK REVIEW**


Written descriptions of a “hollow Earth” date from as early as the 17th century. Despite the findings of modern science, the notion of a hollow planetary interior—replete with animals, plants, and even civilizations of intelligent beings—remains a popular idea among writers and filmmakers. Moreover, even today, a loyal cadre of believers remains convinced that the government is covering up the truth about the nature of Earth’s core. Part of the longstanding popularity of the hollow-Earth concept derives from the lack of major unexplored regions remaining on the planet’s surface. The potential presence of as-yet undiscovered worlds beneath the surface crust lends a measure of plausibility to the existence of “lost civilizations,” providing fodder for both science fiction and social commentary. In *Subterranean Worlds*, Peter Fitting explores the hollow-Earth theme across the span of four centuries of imaginative literature.

In compiling material for this unique anthology, Fitting has selected from among the world’s major works in the province of hollow-Earth literature. The combination of Fitting’s insightful commentary with key excerpts from each of the selected works—many of which have been translated into English for the very first time in this volume—provide readers with a fascinating historical sampling of the rich diversity of thought that has characterized this inspired form of literature.

Literary descriptions of the Earth’s core have typically fallen into one of three major categories: (1) an immense series of interconnected caves, carving the Earth’s interior into a huge globe of Swiss cheese; (2) a large, central cavity of planetary proportions, that may itself contain lesser suns and planets; and (3) an extensive system of subterranean passages, primarily connecting the North and South Poles. The vast extent of the cavernous underground and the characteristic presence of prehistoric creatures or of one or more civilized societies distinguish the hollow-Earth genre of literature from more conventional cave-related novels.
Of course, the details of hollow-Earth literature vary widely from one author to another. Principal differences relate to: (1) access routes into these expansive subterranean voids (e.g., via caves, whirlpools, volcanoes, natural openings near the poles, through the medium of earthquakes or mining machinery, etc.); (2) the nature of any underground lighting that might be present (e.g., internal suns, sunlight streaming in through cracks in the Earth’s surface, internal reflections off the concave inner crust, an internal aurora borealis, bioluminescence, lanterns and torches, etc.); (3) the presence and character of sentient beings (human or otherwise); and (4) the nature of how such underground civilizations came to exist (ranging from the deliberate exile of hardened criminals from the surface (and vice verse) to imaginative interpretations of the book of Genesis or the Great Flood. In some works, denizens of the underworld are fully aware of a civilized culture inhabiting the planetary surface. Their ancestors may even have originated there. In at least one volume, the author explores the concept of worlds existing *ad infinitum*, present in ever-diminishing microcosm within the smallest speck of matter. In reading this excerpt, I was reminded of Edwin Abbott's perennial classic, *Flatland* (Dover Publications, 1952).

Fitting’s selection of excerpts embraces three main ideas: (1) the physical nature of underground worlds; (2) the existence of intelligent creatures living beneath the surface (and which range in form and disposition from the bizarre and humorous to the patently ridiculous); and (3) various aspects of any civilized cultures that may be present. The latter two categories dominate Fitting’s selections (these are not caving adventures, per se). Of particular interest to me were the periodic glimpses into the scientific rationales—popular at the time of publication—that served as a basis for the justification of a hollow-Earth thesis. Many of these early beliefs remain as intriguing today as they probably were when first published, as much as four centuries ago.

The enduring themes of hollow-Earth literature contain a healthy dose of utopian commentary, social satire, fantasy, science, and science fiction in varying proportion. Of course, social satire and utopian civilizations have long provided writers with a literary mechanism for the critical evaluation of contemporary human society. As a professor of French literature, former Chair of the Society of Utopian Studies, and founding editor of the journal, *Utopian Studies*, Fitting’s selection of excerpts was naturally biased along such lines.

For readers with an interest in either the classic notion of worlds within worlds or in the historical aspects of hollow-Earth literature (notably geology, fantasy, science fiction, and, especially, underground literary utopias), Peter Fitting’s *Subterranean Worlds* is sure to please.
IN MEMORIAM

Lois M. Soule, NSS#51182

1917 – 2006

Photo courtesy of Gary Soule,
Maribel New Hope Cave, Wisconsin