Staunton Caverns

Staunton, Virginia

Also known as:

(Dogwood Cave)
(City Garage Cave)
(Staunton Quarry Cave)

By Rick Lambert

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The City of Staunton in the Shenandoah Valley of Virginia is well known for its caves and karst. First known as Dogwood Cave, from the hill it is on, Staunton Caverns was renamed in 1907 when it was commercialized. Though it was closed shortly afterwards it remained a favorite destination for the caving youth of Staunton until the City closed it with a steel door and later with a cement block wall.

Contributors

The story of Staunton Caverns begins with an English stonemason named William Larner. William was born in Hadfield, Derbyshire, England on April 15, 1856. In 1881, in his mid-20’s, he visited his brother in Massachusetts, seeking a better life. He sent a message to his wife, Esther, asking her and their two children to come to America. They did.
Fort Fairfield, Maine, where William Larner moved his family from Massachusetts. (From the great-grandchildren of William Larner)

From Massachusetts they moved to Maine where William worked in textile mills. After seeing a brochure on Staunton, Virginia, in 1890 he took a trip to check out the town. He liked what he saw and sent a message to Esther to bring their six children to Staunton. Esther’s reply was, “I’ve done that, already. If you want us, you will have to come and get us.” He did and in January of 1891 they moved to Staunton, Virginia.
William Larner in Staunton, Virginia. (From the great-grandchildren of William Larner)

William initially contracted himself out as a masonry and cement foreman, but eventually went into business for himself as a stonemason. It was his work as a stonemason that has left an enduring legacy around Staunton, Virginia. It also led to the commercialization of Staunton Caverns.

Just as thousands of people pass by the entrance to Staunton Caverns each day and do not know it is there, tens-of-thousands of people pass by the Larner stone work each day and do not know its history. The following post cards are examples of a few of William Larner’s projects in Staunton, Virginia.
The main entrance to Thornrose Cemetery. (From the collection of Dwane Knowles) A story recorded in the Staunton, Va. News Leader related that when Larner finished this arch in 1896, he “laid a slab just above the arching entrance that read, ‘William Larner, Contractor, Staunton, Virginia.’ Charles Hunter, who was then president of the cemetery board, said the architectural by-line was ‘too commercial’ and had it removed. The stone, however, was stored within the gatehouse itself. Years later, Larner’s son, Thomas, served as superintendent of Thornrose Cemetery and had the stone restored to its original position when Hunter passed away.”

This account differs from YuLee Larner’s account on page 97 of her book. YuLee, a granddaughter-in-law of William Larner, credits Thomas Hounihan as the superintendent who returned the stone to its proper place. The great-grandchildren of William Larner report that William’s son, Thomas, never was superintendent, but William’s son, Matthias, was for many years.
Thornrose Cemetery arch, foot-bridge, and tower built by William Larner & Company. (From the Lambert archives, Monterey, Virginia)

Thornrose Cemetery’s first three vaults. The vaults on the right were built by William Larner & Company. (From the Lambert archives, Monterey, Virginia)
The now demolished Staunton Military Academy, which required the laying of 1.5 million cement blocks in a four-month period. William Larner & Company, in addition to laying stone, also made and laid cement blocks. (From the Lambert archives, Monterey, Virginia)
The stone and brick work on Emmanuel Episcopal Church built by William Larner & Company. (From the Lambert archives, Monterey, Virginia)
The stone and brick work on Oakdene. (From the collection of Dwane Knowles)

The retaining wall at Mary Baldwin Seminary (now University) built by William Larner & Company. (From the Lambert archives, Monterey, Virginia)
In June 1904, Larner purchased almost four acres of land about a mile from the then corporate limits of Staunton, Virginia, along the road to Middlebrook and opened a quarry. Some newspaper reports from that time indicate a quarry already existed at the site. Dr. Terri Brown (Virginia Department of Conservation and Recreation) reports the quarry produced crushed stone in the late 1800-s. The Beekmantown limestone at this location contains fracturing so dense that the bedrock exhibits a slaty cleavage. The quarry operation was able to take advantage of this natural weakness in the bedrock to extract blocks of limestone of uniform thicknesses for building purposes.

Later newspaper reports claim excavations near the southern boundary opened a 40 foot-deep pit under a walnut tree. Staunton, Va., Dispatch & News reported on May 19, 1907 the pit was already known as Dogwood Cave, possibly because it is on a flank of Dogwood Hill. William, who had gained a few pounds by this time and was described as “portly”, descended into the cave and had a great deal of difficulty getting out. “Next time I go into that cave,” Larner declared, “I will walk in.” He did. Starting work in the summer of 1906 William sealed off the original entrance with a concrete building and opened a new entrance from Middlebrook Road. Larner also secured permission to develop that portion of the cave under the property of Mr. Harry Burnett. At the same time, William was expanding his quarrying business and started making cement blocks. As a result he took on a partner, Mr. John B. Smith, in the ventures.

The first expenses for Staunton Caverns were recorded, in the Wm. Larner ledger on page 124 under “Larner & Smith Staunton Caverns Expense Act.”, on July 1, 1907. The largest single expense was for 150 feet of tunnel at $10 per foot --- $1500.00. His quarrymen’s tunneling operation left the first room devoid of formations. The second largest expense recorded was for acetylene plant pipes, $125. Since there is no listing for an acetylene plant, it must have been included with the pipes. The total recorded for Larner and Smith to commercialize the caverns was $1,725.80.
**Notice the round building covering the natural entrance** along the skyline in this early 1900’s photo and the blasted entrance below and slightly to the right in the quarry. (From the archival files of Gary K. Soule, Sturgeon Bay, Wisconsin)

While an article published in the Staunton, Va., *Spectator and Vindicator* on September 13, 1907 indicated Staunton Caverns had “recently opened”, the first receipts from the cave recorded in the ledger were on August 2, 1907, for $2.50. Reporters had been allowed into the caverns during the commercialization and their articles served as free advertisement for the venture. Phil and Charlotte Lucas, of the Virginia Speleological Survey, believe this was the first commercial cave in the United States to be illuminated with acetylene gas lights. These were later replaced with electric lights. It was open from 7 a.m. to 5 p.m.

Entrance to Staunton Caverns before the cinder block wall was installed. (From the great-grandchildren of William Larner)
The entrance to Staunton Caverns during the installation of the cinder block wall. (From the great-grandchildren of William Larner)

An August 9, 1907 article in the Staunton, Va., Spectator and Vindicator bragged, “More chambers will be developed as the soundings indicate others, and it is predicted that these caverns will rival, if they will not excel, the celebrated Luray caverns.” We do not know what technique was used to get the “soundings.”

Admission was 50 cents with special rates for large parties to see the 400 foot-long cavern. The proprietors, Larner and Smith, boasted of a formation of a giant eagle, on whose left wing is the perfect formation of an angle. Other formations include clasped hands, a tiger’s head, a buffalo, a woman with a child in her arms, “the o’possum,” and the turkey’s head.
A photograph of the interior of Staunton Caverns. (From the archival files of Gary K. Soule, Sturgeon Bay, Wisconsin)
Employees of Staunton Caverns pose on top of cavern entrance. John. B. Smith is on the far left. (Photo courtesy of David Schwartz)

While the Staunton Va., News Leader reported Staunton Caverns “did a brisk business” until it was closed, the William Larner ledger recorded the income for the first year only totaled $180.70. No one seems to know when it closed, but the Larner family believes it closed shortly after William’s death on December 17, 1910. Some reports add several years to that date.
Reoccurring ad in Staunton newspapers in 1908.

William Larner was buried in Thornrose Cemetery whose beauty he helped shape. William Larner & Company came to an end with the Great Depression, but their stonework and the caverns live on in Staunton, Virginia.

A 1907 newspaper reported, “A souvenir card maker was here a short time ago and took flash light pictures which he said were perfect, and they will also attract the attention of strangers.” Notice the black pipes carrying the acetylene gas in two of the post cards.
Staunton Caverns, Staunton, Va. (From the great-grandchildren of William Larner)

Partial view of the interior of Staunton Caverns. (From the great-grandchildren of William Larner)
Partial view of the interior of Staunton Caverns. (From the collection of Dwane Knowles)
Phil and Charlotte Lucas report that after the closing of the cave, formations from the cave were being sold to the public in Staunton. Fran Coble, a granddaughter of William Larner’s son, Herbert, reports she was in the cave many times after it closed with her grandfather to gather clay for the Staunton school system to be used in art classes.
STAUNTON CAVERNS.
Caverns and Quarry on Middlebrook Avenue, ten minutes walk from C. & O. Depot.
FOR SALE
Building Stone. Three grade of Crush stone and land plaster.

Partial views of the interior of Staunton Caverns.
William Larner, Proprietor.
The Description of Staunton Caverns

The City of Staunton bought the property containing Staunton Caverns from the Larner family in 1932. It has since used the lot for public works materials and equipment storage, vehicle maintenance, and construction debris disposal as back fill against the high wall. For safety reasons the City completely sealed the man-made entrance.

H. H. Douglas in his book, Caves of Virginia, (page 117), lists the name of Staunton Caverns as Staunton Quarry (Cave) or City Garage (Cave). His description follows:

“The cave was discovered, the legend goes, when dirt washed away from an old walnut tree top of the hill, leaving a hole through which the hollow interior could be seen. In 1902, the Larner family, which came from Maine to Staunton, bought the quarry. They tunneled into the cave, fitted it with acetylene lights, and opened it to the public in 1907...as many as 50-60 people were shown through the cave in one day...later electric lights were installed...eventually the cave fell into disuse.”
In 1995 a study was commissioned for the Va. Route 252 road widening project. This study was through an informal agreement between Virginia Department of Transportation, City of Staunton, and the Virginia Cave Board. The Virginia Cave Board, which is a state board, appointed by the governor of Virginia to advise him/her on cave and karst issues, had Staunton Caverns (Staunton Quarry Cave) listed as a significant cave. As a result, Staunton Caverns was required to be surveyed to accurately place the cave passages in relationship to the proposed construction. The primary objectives of the survey were to collect the information necessary to prevent damage to the cave, and to enhance the design and construction of a safe roadway. Ted Andrus, who was heading the survey of the caves of Staunton, headed the survey and mapping project. His description of the cave is reprinted below.


The manmade entrance is located in the south wall of an existing quarry currently owned by the City of Staunton. This manmade opening is closed by a 39’ wide x 16’ high masonry wall with a 3’ x 7’ metal door about in the center. Inside the cave a heavy steel gate is exposed inside the masonry wall. This is assumed to be the original gate.

From this entrance the cave splits into a wide passage to the left that slopes down from the entrance and a narrow walking passage that leads just slightly to the right and up. Soon this narrow passage levels and ends at a 12’ drop to a large first room.

The left passage appears to be used by vehicles at one time and contains two metal boxes used to store explosives at one time. Both the left and right passages are manmade and there is evidence of the blasting required to open them.

The left passage also enters the first room but on the floor level. This first room has high vaulted ceilings where the first cave formations can be seen.

Closer inspection shows a few rotting timbers some 40’ above the floor here. These are suspected as being the remains of the shelter that once stood over the natural entrance. No trace of this entrance can be found above ground.

There are two passages of significance leading off from this first room. The first is below the narrow entrance passage and is low and ends abruptly in a mud plug. Some very nice examples of boxwork can be found on the right wall and ceiling. Boxwork is not a common feature in this area.

The second passage leads off to the west and goes high. The upper level of this passage is almost entirely covered with flowstone of various colors from grey to white. Small pockets of crystals can also be found along this lead. This passage terminates about 20’ – 30’ to the east of the proposed work along Middlebrook Avenue.
The main trunk continues from this first room to the southeast where a set of stone steps must be climbed to enter the second room at a higher level. This higher room is heavily decorated with a wide assortment of cave formations.

Small rimstone dams are on the floor with small irregular shaped cave pearls in their pools. Fine draperies, stalactites, stalagmites and columns cover both walls and ceilings. The left wall is covered with flowstone nearly to the 25’ ceiling. It is a very beautiful room. As you proceed to the southeast, an 8’ deep pit is at your feet and the end of the upper level is only 20’ beyond.

The pit leads to a low sandy crawlway that ends some 70’ in. There are the remains of a wooden ladder in the pit entrance and a small diameter pipe appears here out of a mud plug and disappears again at a pinch about half way into the crawlway.

The main trunk of the cave trends to the south and southeast with a few passages leading off to the west, both high and low. The main passage is well lighted with electric lamps and remnants of the original lighting system can be seen throughout the cave. There are about 400’ of passage in this small jewel under the City of Staunton. The final map should be completed by the end of May 1995.

On the evening of April 6, 1995, Bob Thren, Ted Andrus and David Hubbard returned to the cave to do a biological assessment of the cave.”

Beth Grimm in the entrance as it appeared in 1995. (From Al and Beth Grimm)
The Geology of Staunton Caverns

Terri Brown, Virginia Department of Conservation and Recreation Karst Specialist, described the geology and hydrology of Staunton Caverns in 1995. Her description is reprinted below.

“The bedrock at the site is the lower Ordovician Beekmantown Formation consisting primarily of light-gray, fine-grained dolomite, dark to light-gray limestone and dolomite, and dark-gray coarse crystalline dolomite (Rader, 1967). Occasional calcareous shale partings; slickenside features on bedding planes; micro-fractured beds of dolomite; and a black micrite bed with large calcite vugs were noted inside the cave. Lenticular chert beds were observed to form resistant zones within the more soluble rock matrix.

Structurally, the site is located on the undulating northwestern limb of the Massanutten Synclinorium. At this location, however, bedrock strikes perpendicular to the projected axis of the syncline, trending N 15 degrees to 25 degrees W and dipping 30 degrees to 40 degrees ENE. The slickensides indicate that minor movement along bedding planes, such as low-angle thrust faulting, may have created the local departure from regional trends. An oblique, nearly-vertical joint system trends N 50 degrees to 65 degrees W and N 50 degrees to 65 degrees E, with prominent planar spacing at 3-feet and similar intervals. In certain areas, fracturing is so dense that the bedrock exhibits slaty cleavage. The quarry operation apparently took advantage of these natural weaknesses in the bedrock, preferentially mining along intersecting joint sets where extraction of blocks was easiest. The joint sets and fracture zones also facilitated solutional development of deep, soil-filled cutters and fissure caves.

The cave contains approximately 400 linear feet of passage. The main passage generally trends southeastward from the man-made entrance to a terminal, clay-plugged fissure with several smaller passages branching to the west. The natural, vertical entrance to the cave appears to have developed via suffosion along a deep cutter. The resulting skylight opens to the surface on the hillside along the southern property boundary. The natural entrance has not been used for many years, and is covered with an old concrete cistern or manhole cover. According to local legend, the cave was discovered when someone noticed the vertical shaft dropping out beneath a hollow trunk of a walnut tree that once grew on this spot (Douglas, 1964).

Tunnelling for the quarry operation broke into the largest (entrance) room of the cave at two elevations. The extremely high (>40 feet) ceiling of the entrance room formed along nearly vertical joints and leads to the natural entrance described above. The entrance room accepts most of the drainage from the City’s storage lot via a PVC pipe extending from the base of the masonry wall. The drainageway terminates in a natural floor drain covered with breakdown, concrete blocks, and blasting rubble in the center of the room. Mud and silt coatings on the
floor and lower walls of the depression indicate that stormwaters are periodically retained there before draining completely.

Extensive mining left the entrance room devoid of formations. Two smaller passageways leading to the west and northwest, however, are heavily-decorated with intricate calcite boxwork protruding from micro-fractured dolomite, and excellent examples of calcite/quartz crystallization and flowstone. These short, but significant passages – and the partially blast-damaged west wall of the entrance room – probably have the greatest risk of being damaged by the proposed construction. Voids and instability in this area could also pose future worker and traveller safety concerns. These risks can be evaluated more accurately when the cave map overlay is complete.

Southeastward from the entrance, the main passage leads up over large clay deposits bearing the afore mentioned inscriptions. The rear section of the cave was not visibly impacted by the quarry and contains an impressive array of actively-developing flowstone, draperies, bacon rind, rimstone dams, stalactites, and stalagmites. Speleothems are growing from nearly every bedding surface, and many are tinted red, black, brown, and yellow by organic impurities and iron/manganese oxides. More boxwork adorns the walls and vaulted ceiling of this passageway. Floe calcite was observed as thin rafts of precipitate on the surface of rimstone pools. A small passage slants downward from this room and terminates in a sandy-clay filled fissure. A narrow pipeline extends through the plugged fissure, but is almost completely buried in the sandy clay fill.”
The Biology of Staunton Caverns

Biological collections have been conducted in the cavern twice. In 1988 John R. Holsinger and David Culver collected “a trogloxe terrestrial isopod that had some question about its ID. Some reports say it was *Trichoniscus pusillus* Brandt. Also some unidentified rhagididd mites were found.

In 1995 David A. Hubbard collected “two springtails – *Sinella cavernarum* and the troglobitic *Arrhopalites carolynae* Christiansen and Bellinger. Additional specimens of unidentified terrestrial isopods and more mites also were collected.” A large millipede and a pack rat nest were observed. There was no evidence of bat habitation.

Hubbard’s collection coincided with an extended dry period and may not be representative of the caves full biological potential. The cave has an abundance of rotting wood and organics that would have ordinarily sustained healthy populations of several cave species. It was suggested that the dry conditions prevented a fully representative assessment and the sampling should be repeated after several rain events.

A Significant Virginia Cave

The Code of Virginia allows the Cave Board to “maintain a current list of all significant caves in Virginia and report any real and present danger to such caves.” If a Virginia cave meets any three of the 12 significant cave criteria it can be designated by the Cave Board as a significant cave. The criteria are: Archaeological, Biological, Depth, Economic, Esthetic, Geological, Historical, Hydrological, Paleontological, Length, Recreational, and Atmospheric. Less than 10 percent of the caves in Virginia are listed as Significant. If a cave meets five of the criteria it can be designated a Very Significant cave. Less than 1 percent of the caves in Virginia are listed as Very Significant.

The Cave Board lists Staunton Quarry Cave (Staunton Caverns) as being significant in three categories: Economic, Geological, and Historical. A description of the criteria follows:

Economic: - Caves used commercially as tourist attractions, either as private enterprises or by state or regional park authorities; or caves presently used for water supplies, agriculture, storage, or social or manufacturing functions.

Geological: - Caves that exhibit outstanding or classic examples of physical features relative to cave development (speleogenesis), geomorphology and mineralogy, such as maze patterns, modifications by vadose action, evidence of phreatic solution, excavation along joints, bedding planes, or faults, large rooms or passages, dome pits, breakdown, stratified fill, rare or unusual mineral deposits, et cetera; or caves that are unique to a given area.

Historical: - Caves that contain relatively well-preserved evidence of saltpetre mining during the War of 1812 or the War of Northern Aggression; or caves that were used or visited by man for various purposes
during critical periods in the history of the state or the country and for which good documentation exists.

Phil Lucas, who lived in Staunton for 12 years as a youth and was guilty of sneaking into the cave, was president of the Virginia Speleological Survey for 33 years, and is a former member and chairman of the Virginia Cave Board, remembers Staunton Quarry Cave being added to the Significant Cave List. It met the Economic criteria because it was being used to store dynamite and equipment. It met the Geological criteria because of its evidence of phreatic solution, the unusual bedding planes it is formed in, and the unusual colors and mineral deposits in the cave. It met the Historical criteria because it was the first cave in the United States to use acetylene lights and piping to light the caverns.

Terri Brown in 1995 suggested deleting the Economic criteria and adding the Hydrological criteria for Staunton Caverns. The description for the Hydrological criteria is below:

Hydrological: - Cave containing streams that contribute substantially to the overall drainage pattern of a given karst area; or caves with spring entrances that mark the resurgence of major underground streams (i.e., karst springs).

While Terri Brown did not make her case for her recommendation of adding the Hydrological criteria the evidence may be in her notes at the Department of Conservation and Recreation. In a hand-written cover letter to an early memo on the Va. Route 252 project, she mentioned monitoring a half dozen karst springs along Lewis Creek, which flows past Staunton Caverns. It is possible that the water from Staunton Caverns recharges one or more of these springs.

If Staunton Caverns is hydrologically significant as Terri Brown suggested and if biological sampling at the proper time could confirm that this cave is also biologically significant, then Staunton Caverns may qualify as a Very Significant Virginia cave.

The Future of Staunton Caverns

Terri Brown, of the Virginia Department of Conservation and Recreation, in her 1995 report to Virginia Department of Transportation, City of Staunton, and Virginia Cave Board, said,

“The preservation of the Staunton Quarry Cave for environmental education purposes could be one of the most useful tools yet for fostering the wider public awareness of karstlands.

If damage to the west walls and passages of the cave can be minimized during the highway construction project, the City should consider 1) cleaning up the lot and adding parking facilities, 2) modifying the man-made entrance for safety, 3) opening the cave only for guided, educational tours to school and youth groups, and 4) restoring/securing the natural entrance to encourage bat habitation.”
The Virginia Department of Transportation wall protecting Staunton Caverns. This wall and moving the Route 252 right-of-way to the northwest, away from the cave, were the measures agreed upon to protect Staunton Caverns. (Photograph from the Lambert archives, Monterey, Virginia)

Terri also wrote,

“The natural areas of the cave contain significant geologic features and speleothems – including boxwork, rimstone, and draperies – that originate from a variety of speleological processes under hydrologic conditions ranging from the vadose to sub-aqueous. This small easily-accessible cave could be developed into a valuable educational resource for local or regional environmental education purposes. Most people living in karst areas do not understand the nature and vulnerability of karst resources, and few have the opportunity to view karst processes from a subterranean perspective. The preservation of the Staunton Quarry Cave for environmental education purposes could be one of the most useful tools yet fostering the wider public awareness of karstlands.”
This report sparked interest from the Virginia Region of the National Speleological Society who tried in 1996 to work out a solution with the City of Staunton to get Staunton Caverns open for educational and/or recreational purposes. Those efforts failed. Also, the Staunton, Va., News Leader has questioned why the City of Staunton has not re-opened and used the cave for educational or recreational purposes as recently as 1998 and 2005.

Shortly after the widening project, the City of Staunton changed City Managers and the Commonwealth of Virginia changed Karst Specialists. Staunton Caverns was forgotten. In 2017, the Virginia Cave Board held a meeting in Staunton and asked the City of Staunton to allow them into the cave to determine if the engineering measures agreed upon did protect the cave from the Route 252 widening project. The city manager informed the Cave Board that “Several years ago the City found blasting caps in the cave. They appeared to have fallen from the ceiling. Alarmed, we sealed off the doorway entrance with a cinderblock and mortar wall.”

Terri Brown noted that the cave can represent an asset or a liability to the City of Staunton. It appears the City sees it as a liability. In this age of “karst awareness” Staunton Caverns represents a list of problems with solutions. I’m hopeful the City of Staunton, the Virginia Cave Board, and the Commonwealth’s Karst Specialist can change Staunton Caverns from a liability to an asset, not only for the City of Staunton but also for the Commonwealth of Virginia.
The entrance to Staunton Caverns as it looks today. The door has been removed, the opening blocked with cinder blocks, and a berm of dirt has been pushed in front of the area. (Photograph from the Lambert archives, Monterey, Virginia)

References


Staunton Dispatch and News. 1907. *Staunton’s Caverns*.


Staunton Spector and Vindicator. Volume 86, Number 37, 13 September 1907.

1995 Photograph of stalactites in Staunton Caverns. (Photo from Al and Beth Grimm)