
Early Exploration: Breathing and Butler Caves

2

William B. White

Abstract

Prior to 1958, Breathing Cave was the only large cave known in Burnsville Cove. That changed in May, 1958 when air blowing from beneath a sandstone ledge guided explorers to the discovery of the Butler Cave-Sinking Creek cave system. The exploration of the Butler Cave-Sinking Creek system along with nearby Breathing Cave is described in detail. Breathing consists of a large network maze on the flank of the Sinking Creek Syncline. Butler Cave consists of a master trunk passage and underground stream that follows the axis of a syncline northeast to a series of terminal sumps. Connecting with the trunk passage is a series of network maze caves that extend up the northwest flank of the syncline. Overall, Butler Cave contains 16.71 miles of surveyed passages. The excavation of a new entrance in 1998 allowed easy access to the cave and in recent years exploration is being continued.

2.1 Introduction

This and chapters that follow present a detailed history of the exploration of the various caves in Burnsville Cove. The exploration of recently discovered caves such as Helictite and Wishing Well Caves can be described in what might be called “real time”—exploration logs that were written as the exploration proceeded. The present chapter deals with the earliest discoveries and is more of a challenge. It is being written half a century after the events. The historical

record is mixed. There is the author’s memory—that of a retired professor recalling his activities as a graduate student, there are field trip reports in old caving club newsletters, mostly the *Nittany Grotto Newsletter*, and there is an extensive published history that carried the story from the beginning to the late 1970s (Wefer and Nicholson 1982). In 1976 the Butler Cave Conservation Society (BCCS) began publishing an annual newsletter so from that time forward the historical record is much more complete.

In writing history, there is always the question of where to begin. Burnsville Cove was certainly known as cave country to the early settlers and the few caves with large and obvious entrances were known although it is doubtful if much exploration took place. In the absence of earlier written records, this exploration history begins with the first scientific and systematic surveys that begin in Breathing Cave just after the 2nd World War. This is followed by the discovery and subsequent exploration of the Butler Cave-Sinking

With an addendum by Philip C. Lucas.

W.B. White (✉)
Department of Geosciences, The Pennsylvania State
University, University Park, PA 16802, USA
e-mail: wbw2@psu.edu

Creek System by I. Kennedy (Ike) Nicholson, his sons, and his colleagues in the late 1950s.

Oscar P. Estes, Jr. (July 18, 1913–December 14, 1981) was one of the Ike Nicholson's companions in the initial exploration of Butler Cave in the late 1950s. He accumulated a photo file of more than 100 images which passed to the Butler Cave Conservation Society after his death. These provide the best available photographic record of the early exploration. The photographs in this chapter are drawn from that collection. Many of these photos are the work of Huntley Ingalls but the exact photo credits have been lost.

2.2 Breathing Cave

2.2.1 Early History

Organized cave exploration was nucleated in the District of Columbia area in the late 1930s, then remained almost dormant during World War II, and finally sprang to life after the war. Cavers from DC and elsewhere spread out over the limestone valleys of eastern United States searching for caves. Very quickly information was collected for published descriptions of caves such as the books by W.E. Davies on West Virginia in 1949 and Maryland in 1950 and by R.W. Stone on Pennsylvania in 1953. There was no equivalent book on Virginia but cavers were active in the Shenandoah Valley and in the mountains to the west. They reached Burnsville Cove and found Breathing Cave, already well-known locally as Saltpetre Cave, at least as early as 1944.

The entrance to Breathing Cave is at the bottom of a sinkhole on the lower flank of Jack Mountain (Fig. 2.1). The entrance passage slopes steeply downward to end in a breakdown choke. Crawlways to either side lead to the otherwise independent North and South Sections of the cave. There was a strong air current moving through the crawlway leading to the South Section and, to the surprise of the early explorers, the air current reversed direction periodically. This “breathing” phenomenon ultimately gave the cave its name. The DC cavers were intrigued by the breathing phenomena and observed it over a period of years (Faust 1947). Cournoyer (1954) devised a fast response barograph and made at least one quantitative measurement of the air current oscillation. Apparently the DC cavers also began a map of the cave.

2.2.2 The Nittany Grotto Survey

Nittany Grotto, the caving club of The Pennsylvania State University, had been founded in 1948 but had gone through a short moribund period when it was reinvigorated in 1951 by William Devitt III. Devitt was a mining engineering major at Penn State and had, perhaps, a greater appreciation for the importance of accurate maps than many of his fellow cavers. Following his lead, the Nittany cavers were busy mapping many caves in central Pennsylvania. However, Pennsylvania caves tend to be short, small, and muddy so it became a Grotto custom to take occasional multiple-day trips to areas in West Virginia and Virginia where there were larger (and dryer) caves. The first Grotto visit to Breathing Cave was on one of these trips in January, 1954, when the group spent six hours roaming large and dry cave passages. It was George Deike's first visit to the cave and he was greatly taken by it. Mightily impressed by the cave, the Nittany cavers made Breathing Cave one of their primary objectives for their next winter-break trip south (Deike 1955). On this trip they spent an entire day exploring the cave and getting an impression of its immense size and complexity. For the first time, the Nittany cavers had come up against a cave that really seemed to be without end. They went back to Breathing Cave in April, 1955 and spent 17 h only to find more cave opening up before them. By this time they had accumulated about 10,000 feet of sketch map.

What quickly become obvious was that sketch maps were completely inadequate for a cave the size of Breathing. So, by the time of their visit in the spring of 1956, a new, careful, survey of the cave was underway. By the end of the trip, about 15,000 feet of cave had been surveyed. The big push was Christmas break, 1956 (Deike et al. 1957). Three teams of surveyors were assembled for a five-day stay in the cave. Following their usual custom, the group camped in the cave. After dragging their gear through the entrance crawlway, they set up camp using one chamber for cooking and other activities and a deeper chamber, Sand Alley, warmer and with a smooth sand floor, to lay out their sleeping bags. After breakfast, the three teams would split up and each go to its assigned area of the cave to continue the survey. The teams would reassemble in the Camp Room in the evening for dinner, to plot out their mapping accomplishments, and decide on objectives for the next day (Fig. 2.2).

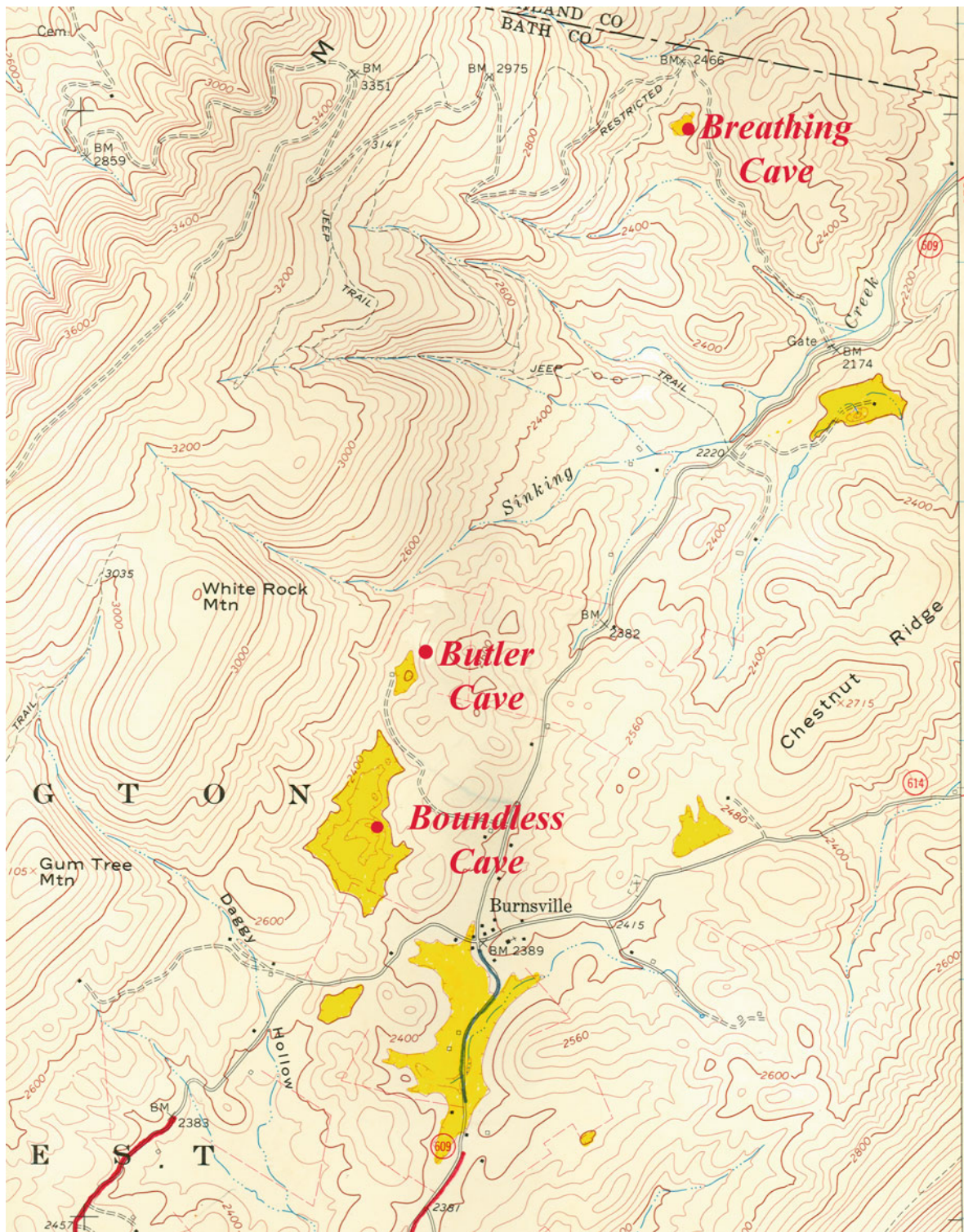
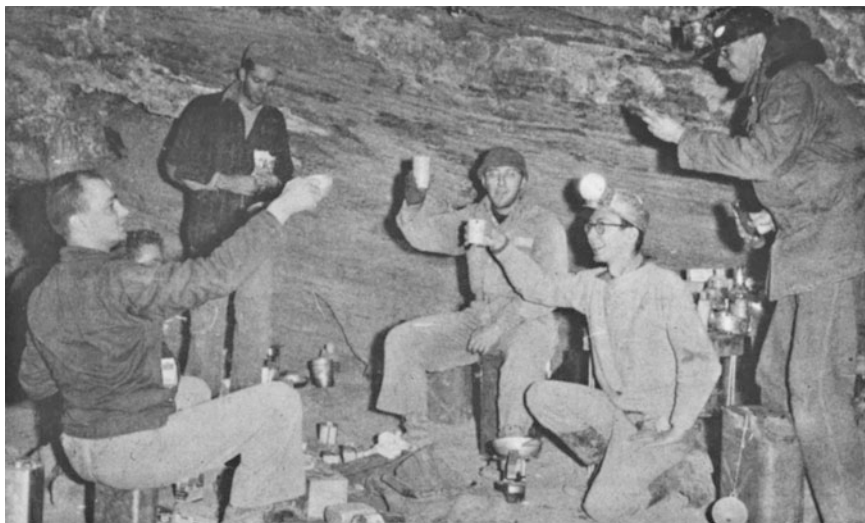


Fig. 2.1 Topographic map of the area near Breathing and Butler Caves. Extracted from U.S. Geological Survey Burnsville, Virginia 7.5 min Quadrangle. Yellow areas delineate closed depressions

Fig. 2.2 New Year in Breathing Cave. *Left to right* Herb Black, George Deike (concealed), Ken Graves, Jack Stellmack, Larry Matthews, and Harry Johnson. [Nittany Grotto Newsletter, Vol. 5, Number 3, Page 6 (January, 1957)]



George Deike expressed it this way: “Each morning the three parties split up and went into the darkness to their own areas. They might as well have gone a hundred miles away. All day they worked alone, without hearing from each other, as if no one else was in the whole cave. It was odd to reflect as you worked that somewhere in those thousands of feet of passage two other parties were laying their tapes through some seldom seen gallery or pit. At the end of the day it was very warming to come into camp and see a bright lantern and friendly faces.”

At the end of five days of mapping, most of the known cave had been mapped. More trips were made over the next year to complete various segments and to correct errors that surfaced when the final map was plotted. The compiled survey data were plotted and passage detail drawn into produce the final map. The total effort had required 14 separate trips made over a period of 6 years, involving more than 50 cavers and more than 3500 man-hours in the cave. The original map was reproduced at 20 feet per inch and resulted in a huge sheet of paper. Reduced copies of the map were prepared and widely distributed (Fig. 2.3). For its day, the Breathing Cave map is an altogether remarkable document. It was certainly one of the earliest large caves to be mapped in detail by project caving—a systematic approach to surveying the same cave on trip after trip.

2.2.3 Geological Investigations

George Deike was a geology major at Penn State and was one of the most persistent Breathing Cave mappers. He received his BS degree in 1957 and moved to the University of Missouri to study for a master’s degree. There he convinced the geology department that the geology of Breathing Cave would be an excellent thesis project. This, in itself, was an accomplishment because in the 1950s most geology departments considered cave studies to be completely frivolous. George and his wife Ruth spent much of the summer of 1958 at Breathing Cave completing a topographic overlay of the land surface above the cave, investigating the geology of the region, and examining cave passage cross-sections, profiles, and clastic sediment fills in considerable detail. The results were compiled into an MA thesis that appeared in 1960 (Deike 1960). A summary of these results appears as Chap. 18.

The detailed investigation of Breathing Cave marks something of an historical turning point. The classic papers on the origin of caves that had appeared in the 1930s and 1940s were largely based on intuitive reasoning with very little solid field data. Cave maps were not adequate and field observations were limited. The Deike thesis was one of the first to draw conclusions based on a comprehensive cave map, on detailed

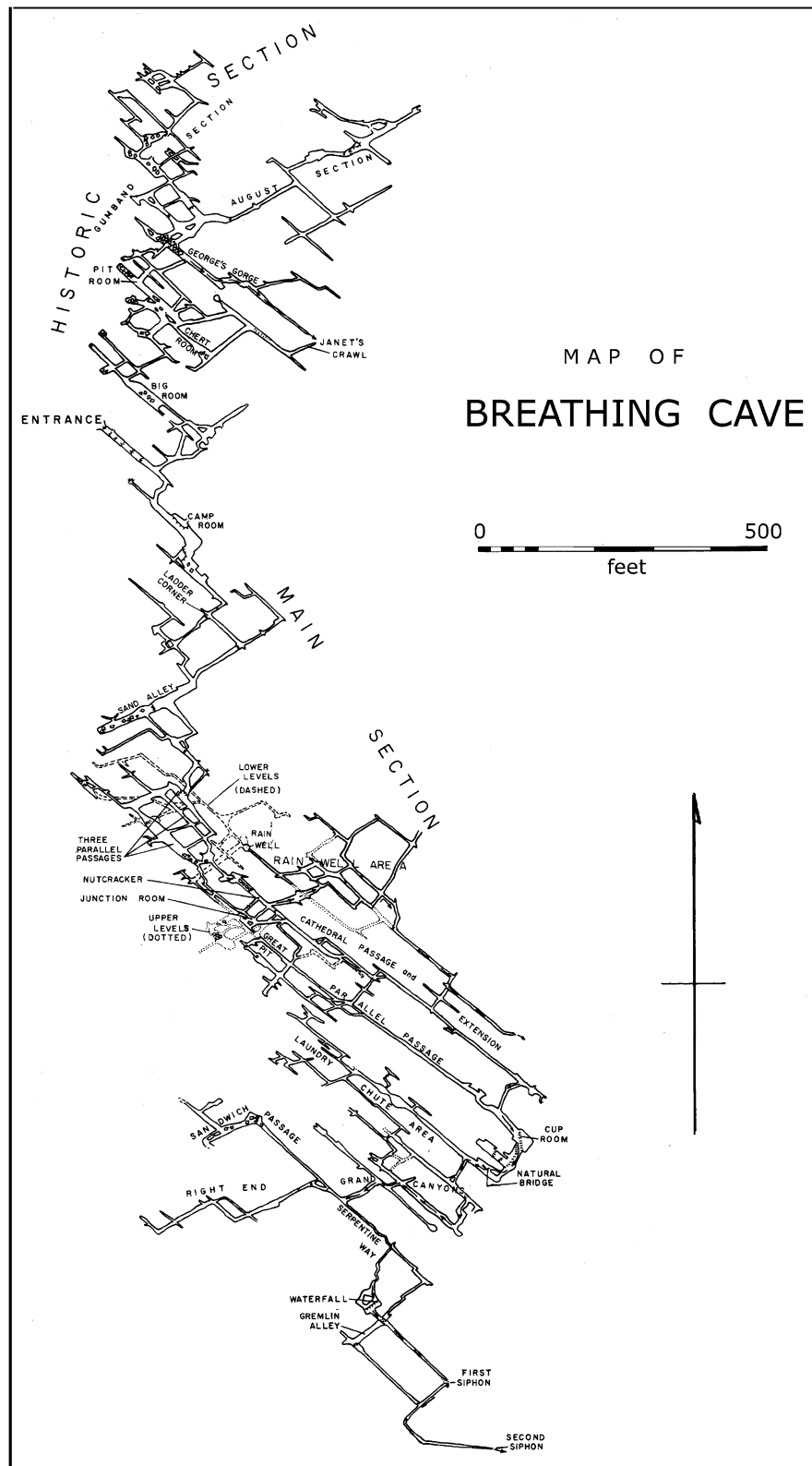


Fig. 2.3 The 1957 Nittany Grotto map of Breathing Cave. This version adapted from Deike (1960)

examination of the cave, and on a solid description of the cave embedded in its local geologic setting. William E. Davies of the U.S. Geological Survey organized a symposium on the origin of caves at the December, 1959 meeting of the American Association for the Advancement of Science. Breathing Cave was one of the star presentations. The Deike thesis also won an NSS Certificate of Merit in 1961.

Breathing Cave is unusual. It is a network maze and most network mazes are nearly horizontal. Instead, Breathing Cave follows the dip of the bedding and so there are elevation differences of several hundred feet between the highest points in the cave and the lowest. A most important discovery of the thesis work was that Breathing Cave is sandwiched between two sandstones. In spite of the overall relief of the cave, it is constrained to about 77 feet of limestone. These aspects of the geology appear again in other caves in the Cove and are important for the interpretation of the overall history of cave development.

2.2.4 Later Explorations and Surveys

As luck would have it, Deike's investigation of what was thought to be the longest cave in Virginia was just being wrapped up when a much longer cave was discovered only a mile and a half up the valley. With the discovery of the Butler Cave-Sinking Creek System, interest in Breathing Cave faded and it was visited mainly for sport caving for many years. There was a short period of intense re-investigation in the late 1960s and early 1970s as explorers searched for a connection between Breathing Cave and the Butler Cave-Sinking Creek System. Then Breathing went back to sport cave status until a major re-mapping effort was undertaken early in the present century. The cave was completely re-mapped by The Gangsta Mappers in the 2000s. The length of the cave is 6.74 miles. The depth is 512 feet.

2.3 The Butler Cave—Sinking Creek System

2.3.1 Discovery

While the investigations of Breathing Cave were underway, other cavers were prowling Burnsville

Cove. Surely one big cave implied another. It was also noted that the main drainage in the Cove, labeled Sinking Creek on the map (Fig. 2.1), did indeed sink and the main channel down the Cove was completely dry most of the year. The D.C. area cavers had a cabin along the Bullpasture River which served to draw cavers to the area. One of these was I. Kennedy (Ike) Nicholson and his sons Michael and David. With their friend Oscar Estes from Staunton, Virginia, they spent a great deal of time combing the hills for possible caves. It wasn't entirely without success. One of their companions, Beven Hewitt, did a SCUBA dive in Aqua Spring and discovered Aqua Cave. They discovered a small cave high on Chestnut Ridge that they called Rathole 1179 (later renamed Chestnut Ridge Blowing Cave) that, unknown to them, would later become of great importance as the Bobcat Entrance to the Chestnut Ridge Cave System. They discovered two small caves in the large closed depression near Burnsville, Burnsville Sink #1 and Burnsville Sink #2. Burnsville Sink #2 was renamed Boundless Cave but its small silt-clogged passages seemed to go nowhere.

The breakthrough came in the spring of 1958. Two local boys (see addendum at the end of this chapter) told Oscar Estes of wind blowing from beneath a ledge on the Carl Butler farm on the same flank of Jack Mountain as Breathing Cave but about a mile and a half to the southwest. Oscar passed the word to Ike



Fig. 2.4 The original entrance to Butler Cave as it appeared in the late 1950s. From the Oscar Estes collection

Fig. 2.5 The original entrance to Butler Cave as it appeared in the late 1950s. From the Oscar Estes collection



and on Memorial Day, 1958, Ike was at the ledge (Figs. 2.4 and 2.5). The ledge with air blowing from beneath it was an outcrop of the Upper Breathing Cave Sandstone. Ike pulled out a few rocks and was soon able to squeeze in to find himself looking down a 35-foot pit (Fig. 2.6). He climbed down the pit and found the wind whistling up through a crevice in the floor. Ike climbed out of the pit and went back to the cabin for additional help. Later in the day, the crevice, now known as the Glop Slot, was dug open sufficiently for one of the smallest explorers to slip through (Fig. 2.7). The cave descended rapidly, over several down-climbs and a pit called the God-Is-My-Copilot climb before breaking through another sandstone layer into a large room. The small entrance series had traversed the entire 77 feet between the Upper and Lower Breathing Cave Sandstones. The huge passage opening up was below the lower sandstone.

2.3.2 Early Exploration

On 14 June, 1958 a 7-person party led by Ike descended the entrance pit, the Glop Slot, and emerged at the top of the breakdown slope in the first big room. At the bottom of the slope, they discovered that the huge passage seemed to end in a silt wall. An opening on the side of the passage part way up the wall gave access to a set of passages that descended eventually to a stream, Difficulty Creek, where they stopped at a water crawl.

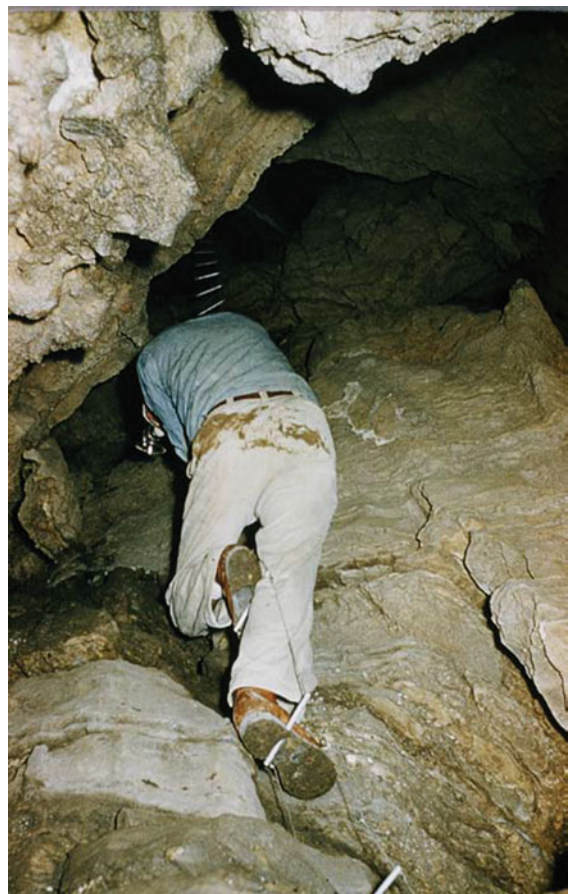


Fig. 2.6 The entrance pit. From the Oscar Estes Collection

Fig. 2.7 The Glop Slot. From the Oscar Estes collection



On 21 June, 1958, the explorers were back. It was possible to cut steps along the edge of the silt bank that blocked the first large passage (Fig. 2.8). At the top, the passage continued downslope following the bedding. Near the lower end of the large passage it was possible to descend into a canyon that trended roughly perpendicular to the main passage trend. A few hundred feet along the canyon, the floor disappeared although a narrow ledge continued. It was necessary to rope down 40 feet to the stream level below. They then explored upstream, climbed Rotten Rock Waterfall and

eventually were able to climb up into a dry passage, Dave's Gallery, that sloped back down along the bedding to an intersection with the Rimstone Pool Passage and a passage leading to a silt bank where they terminated their exploration for the day. The explorers returned to the Rimstone Pool Passage on July 5, 1958 and continued down the main passage, through a small linking passage they named 90-Ugh Crawl, and emerged into the main trunk channel at Sand Canyon.

With the discovery of Sand Canyon the cave opened up dramatically. Sand Canyon is in the main

Fig. 2.8 A blank wall of silt is bypassed along a high ledge in the first big room. The Window Passage opens along the wall. From Oscar Estes collection



trunk passage of the system which extends for several miles along the Sinking Creek Valley following the axis of the Sinking Creek Syncline. The Butler Cave section lies on the flank of the syncline so that the bedding and the passages all slope toward the trunk channel. On the initial discovery trip, the explorers hiked down stream more than a mile, discovered the underground route of Sinking Creek, the dry sumps, Sneaky Creek, and went all of the way to 10-foot high waterfall at the 6th of July Room. The lower reaches of the cave were wet, sometimes with chest-deep water. Although the distance from the entrance to Sand Canyon is only a few thousand feet, the route taken by the explorers was rough and complicated, requiring rapelling down a drop, climbing a waterfall and negotiating a variety of canyons and crawls so that just reaching the unexplored areas required a great deal of time. An underground camp seemed to be the answer.

Sand Canyon is a flat silt terrace above the usually dry overflow route of Sinking Creek and an ideal camp site (Figs. 2.9 and 2.10). August 8, 1958 the group of seven cavers hauled gear through the Butler Cave section and set up camp. For the next week they explored both upstream and downstream along the trunk channel. Upstream they discovered Huntley's Cave, another side cave on the flank of the syncline upstream from Butler Cave, the natural bridge (Fig. 2.11), and a complex maze section upstream

from the Natural Bridge. Downstream, they pushed beyond the 6th of July Room to discover the Rat's Doom Sump (called a siphon on the map and in earlier reports) and Dave's Lake (Fig. 2.12). Nearer to Sand Canyon they discovered the Moon Room (Fig. 2.13), the Crystal Craters, and the Crystal Passage, all upper level dry passage above the main stream-way. By the end of the week they had discovered and reconnaissance mapped about 15,000 feet of new cave.

The exploration route from the entrance to Sand Canyon was complex and time-consuming (Fig. 2.14). The Nicholson's and their friends had been secretive about their new find in the summer of 1958 and of course, other cavers became extremely curious. One of these, Cliff Forman, decided to follow them into the cave. He followed their footprints through the entrance series, down the first major passage and into the cross-canyon. On the ledge where the canyon crossed the Bean Room he lost the trail. Sitting down to have a cigarette, Forman notice the smoke swirling up through the breakdown over his head. Climbing into an upper passage, Forman followed it and quickly reached Sand Canyon, completely bypassing Rotten Rock Waterfall and Dave's Gallery. Later, a small crawlway, the Rabbit Hole, was found to connect the first big passage to the second big passage near the top of the fill bank that was the initial barrier to the first exploration. These connections provided a direct route and reduced the travel time to Sand Canyon from

Fig. 2.9 Sand Canyon camp. The passage in the background is the connection with Butler Cave. From the Oscar Estes collection



Fig. 2.10 Camping in Sand Canyon. From the Oscar Estes collection

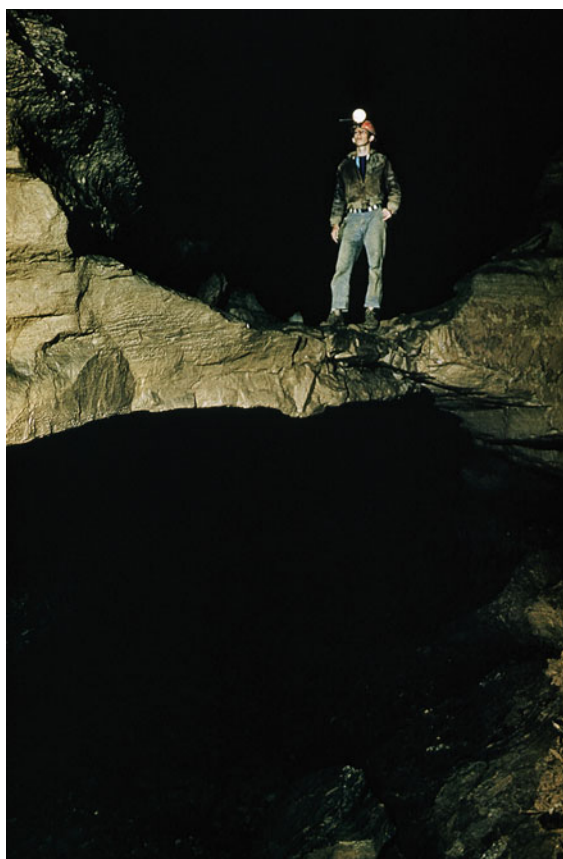


Fig. 2.11 The Natural Bridge. From the Oscar Estes collection

hours to less than an hour. No further camping expeditions were necessary.

Two more exploration trips in September found the Last Hope sump and the stream passage later called Slippery Creek. There were now three streams in the system, Sinking Creek, Sneaky Creek, and Slippery Creek, all flowing more or less parallel before disappearing into sumps. There were also tributary streams such as the Huntley's Cave stream, Rotten Rock Creek, and Difficulty Creek flowing down the west flank of the syncline. If all of these streams were tributary to some master drainage, the junctions were not visible in the humanly-accessible part of the system. Overall, the 1958 explorations by the Nicholson parties had produced more than six miles of new cave as revealed by very fast reconnaissance surveys. Clearly, a more careful and detailed survey was needed.

2.3.3 Surveys

The first Nittany Grotto Survey was undertaken on Thanksgiving Weekend of 1958. The two alternate routes from the entrance to Sand Canyon were surveyed producing a figure-8 that allowed for an assessment of the closure and therefore the accuracy of the surveys. The survey also established that Sand

Fig. 2.12 Downstream passage. From the Oscar Estes collection



Fig. 2.13 The Moonroom. From the Oscar Estes collection



Canyon was 300 feet below the entrance. On May 30, 1959 the objective was to lay survey along the trunk passage. One team made a rapid trip to the July 6th Room and began surveying upstream. The second team began surveying downstream from Sand Canyon. They met below the dry sumps, each team having set more than 50 stations and with 6844 feet of survey in the book. This survey demonstrated that the July 6th Room was 420 feet below the entrance. There were four additional mapping trips between June, 1959 and July,

1960. On Thanksgiving weekend, 1960 it was possible to field four mapping teams for two days each working in many different parts of the cave. A progress report (White 1960) noted an overall total of 5.3 miles of survey which covered most of the cave as it was then known. Although mapping continued, the next major mapping effort was August 16, 1964 when five teams were fielded. John Haas led a trip to Marlboro Country, the purpose of which was to explore the Candle Room area but no new passages were found. Haas had noticed

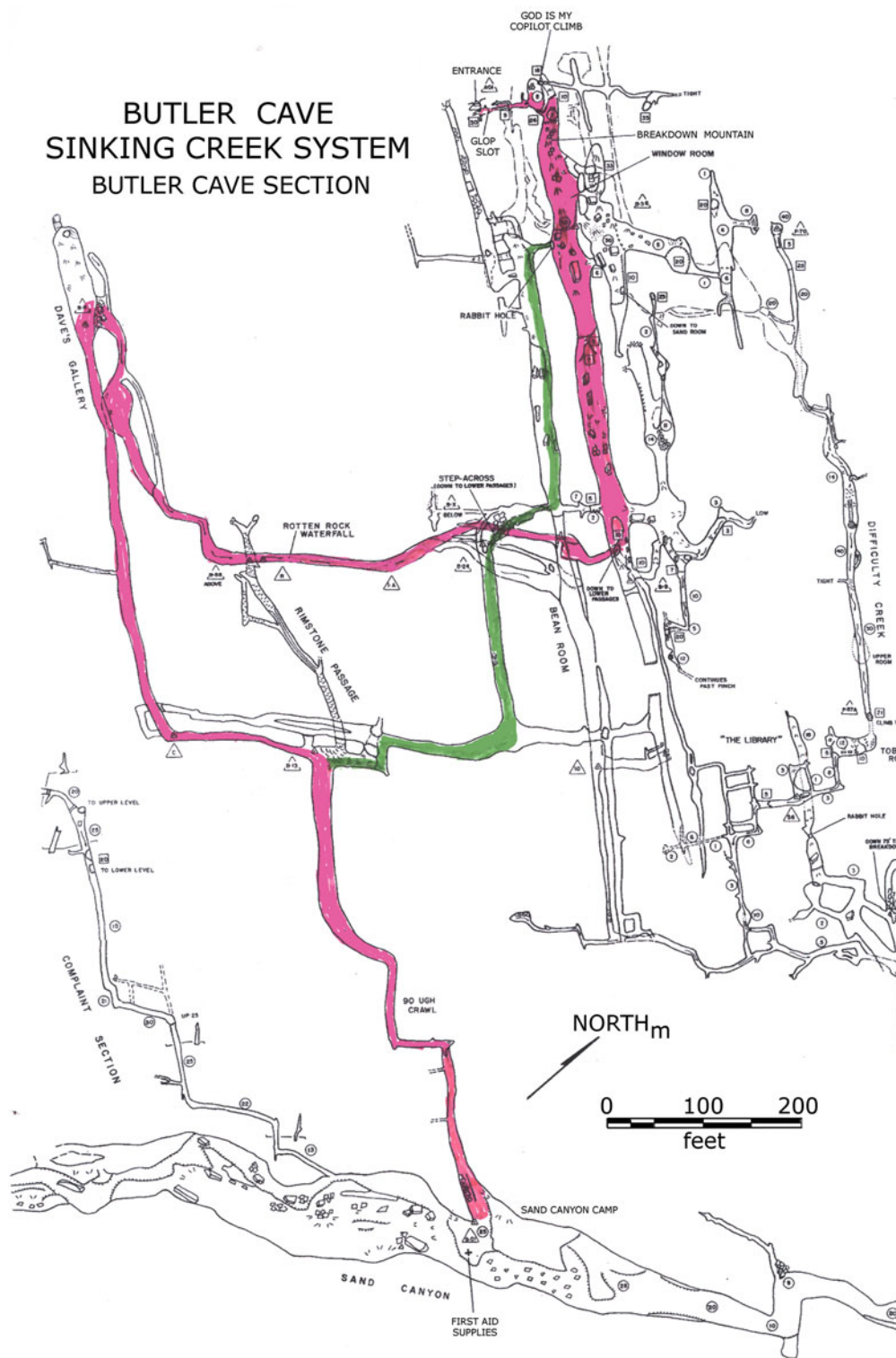


Fig. 2.14 Map of the Butler Cave section. The discovery route is highlighted in *pink*. The shortcut route discovered later is highlighted in *green*. The *pink* and *green* routes cross at the

breakdown room where Cliff Forman followed his cigarette smoke into an upper level passage

that the trunk channel went up through the lower sandstone at Dry Sumps. Thus the Downstream Loop is also between the two sandstones. In crawling down Crisco Way, they were crawling on the lower sandstone, which was penetrated at the 40 foot-pit. Marlboro Country is below the lower sandstone at the same stratigraphic horizon as most of the upstream areas. The expedition also deployed mapping teams in Huntley's Cave, the Natural Bridge area, the Crystal Craters Section, and the downstream Trunk Channel. The Trunk Channel team discovered what came to be known as the Pat's Room Section. Several thousand feet of passage were added to the map. Wefer (1982) describes the details of the surveying methods.

There were dozens of trips to Butler in the late 1960s and early 1970s, most of them added something to the growing map. By the late 1970s the main features of Butler Cave were known and most of them mapped. The mapping, however, had left many dangling ends and much of the decade from the mid 1970s to the mid 1980s was required to survey these odds and ends. Further, when an attempt was made to systematically evaluate all of the survey data, poor closures and some blunders were discovered, necessitating a certain amount of re-survey. By 1985, Lester Good was able to compile sectional maps of Butler Cave that showed nearly all of the known passages. Good's map folio was scanned and is included with the on-line collection of maps attached to this book. The index sheet which also gives an outline map of the entire cave is shown in Fig. 2.15.

Although the Butler Map was stabilized by the release of Les Good's sectional maps in 1985, clearly these maps were not the final word especially with regard to the length of the cave. There were redundant surveys, some of which got added into the aggregate cave length, there were still some errors and confusions that needed rectification. There was some new survey. The survey data were moved into digital files by Tony Canike so that new survey and needed re-survey can be easily identified. With redundant surveys removed, the length of Butler Cave, as of October, 2013, is 16.71 miles.

2.3.4 Pushing the Boundaries

The Butler Cave-Sinking Creek System had been shown to consist of a master trunk passage roughly two

miles long that followed the axis of the Sinking Creek Syncline. It headed in a maze of smaller passages at the upstream end and ended in sumps at the downstream end. Tributary to the trunk passage were a series of side caves, mostly network mazes that extend up-dip along the western flank of the syncline. The cave grew mainly by filling in more and more detail of the side caves. In addition, however, were two other significant discoveries, one upstream and the other downstream.

Upstream, the stream passage above the Natural Bridge emerges from what appears to be a sump. In an early Nittany Grotto trip Karl Francis and Dick Kutz pushed the sump, now called Penn State Lake, found that although very wet, it had sufficient air space to proceed, and found open cave on the other side. The cave beyond Penn State Lake was explored in the early to mid-1960s and explorers found new cave by climbing up into a sequence of narrow fissure passages and some rooms. They had crossed the Lower Breathing Cave Sandstone, which makes up the roof of the trunk passage at the upstream end, and were in the Breathing Cave horizon.

In the summer of 1964, Mike Nicholson brought a young aborigine from New Guinea, the subject of an anthropological study by Dr. Carlton Gajdusek of the National Institutes of Health, to Butler and his explorations beyond Penn State Lake. Mbagintao (pronounced "bog-in-taw") proved an excellent explorer and the passages explored on that trip were collectively named Mbagintao Land. These passages are included on the Butler Cave master map.

Downstream, in June, 1963, Mike Nicholson and Joe Faint followed a small stream into a mud-coated crawlway they called Crisco Way. After 700 feet, the crawlway ended at the top of a 40-foot pit. Later, Mike and Dave Nicholson and Dave Head again crawled down Crisco Way, descended the pit, and discovered Marlboro Country, an extensive part of the cave with large galleries. Marlboro Country lies under much of the lower sections of the Sinking Creek System separated from the upper passages by the Lower Breathing Cave Sandstone. The pit connecting the two parts of the cave penetrates the sandstone. There were three streams in Marlboro Country, stream #1 being a continuation of Sinking Creek beyond its sump in the upper cave. The discovery of Marlboro Country added considerable passage length to the system. These are shown on the sheets 10 and 11 of the Butler Cave map set in the electronic file. It is a long and difficult trip to

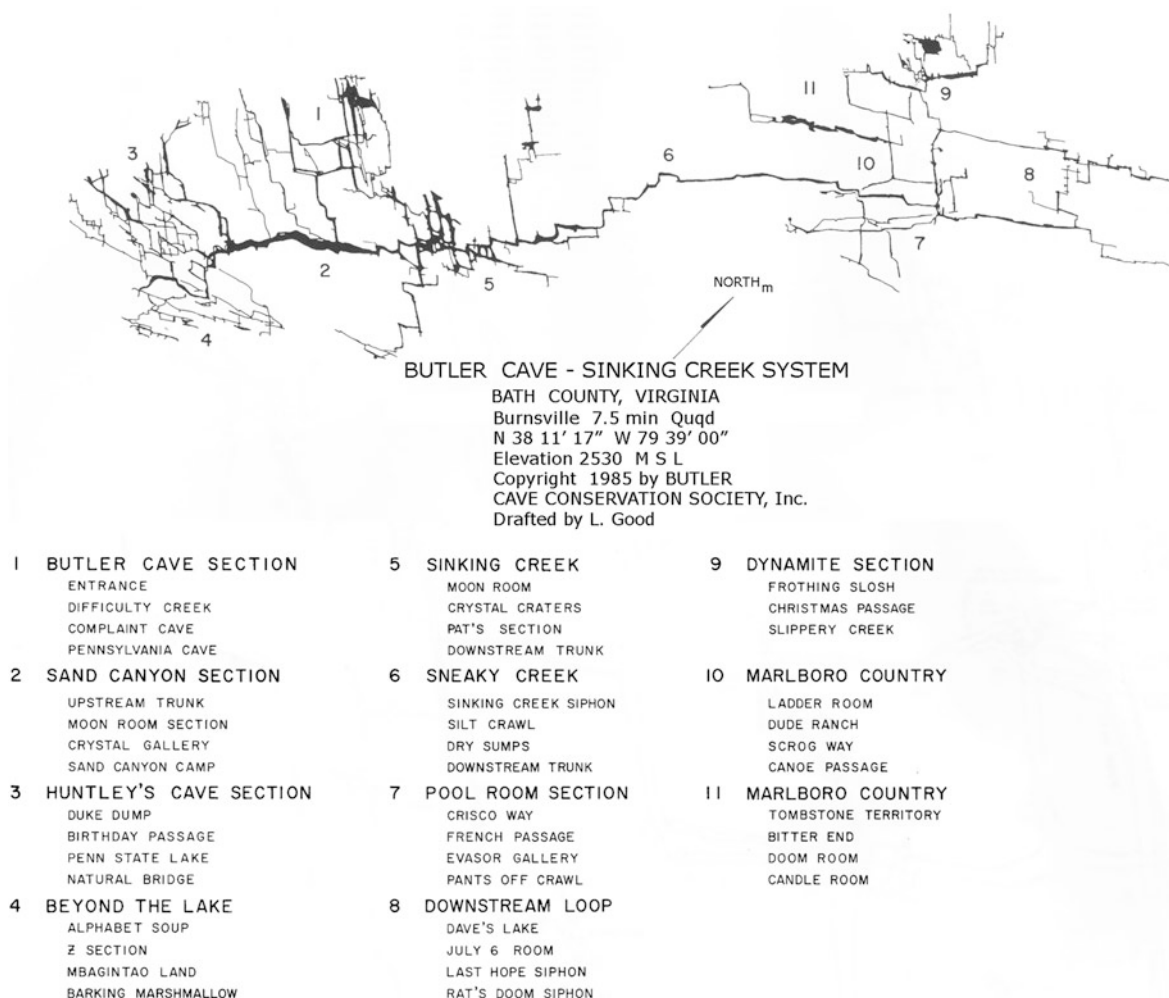


Fig. 2.15 Index map for the Butler Cave-Sinking Creek System with major place names. Full maps sheets are in the on-line map files

Marlboro Country and those contemplating one might well read Fred Wefer's account of the return from one such trip (Wefer 1979).

With the exploration of Marlboro County downstream and Mbagintao Land upstream, the Butler Cave-Sinking Creek System had developed a most peculiar pattern. The Sinking Creek Syncline plunges to the northeast, down the valley, toward the Bullpasture River. The trunk channel sloped downstream also to the northeast but at a lower angle than the plunge of the limestone beds. As a result, the trunk channel actually crosses the lower sandstone at the Dry Sumps so that the upstream portion lies below the lower sandstone while the downstream portion is

above the lower sandstone. At the upstream end, Mbagintao Land is an upper tier of cave above the lower sandstone while Marlboro country is a tier of cave below the lower sandstone.

2.4 Related Caves

2.4.1 The Long-Sought Breathing-Butler Connection

The discovery and exploration of Butler Cave created an entirely new perspective on Breathing Cave. Butler Cave is a trunk channel with a collection of side caves,

most of which are network mazes on the flanks of the syncline. Breathing Cave is a network maze on the flank of the syncline. Therefore, Breathing Cave should be just another side cave of the Butler Cave-Sinking Creek System. Furthermore, the final downstream sump in Breathing Cave and the downstream sumps in Butler Cave were not very far apart. It was just a matter of finding the connection.

The late 1960s and early 1970s saw almost a frenzy of efforts to locate the connection. The extreme downstream end of Breathing Cave was searched and searched again, hoping to find the obscure crawlway that would take the explorers past the final sump and

into Butler Cave (*Nittany Grotto News*, **15**(3), 49–56 (1967); **16**(5), 89–91 (1968); **16**(7), 138–139 (1968); **17**(1), 9–17 (1968)). No connection was found. Earlier surveys suggested that the final Breathing Cave sump, the “pseudosiphon” was less than 500 feet from Butler. The successful dive of Last Hope Sump and discovery of the Good News passage should have closed the distance substantially. Then more accurate survey linked to points on the surface by cave radio dashed the hopes for an immediate connection. The relationship between the caves is now known accurately (Fig. 2.16) and no humanly passable connection seems likely.

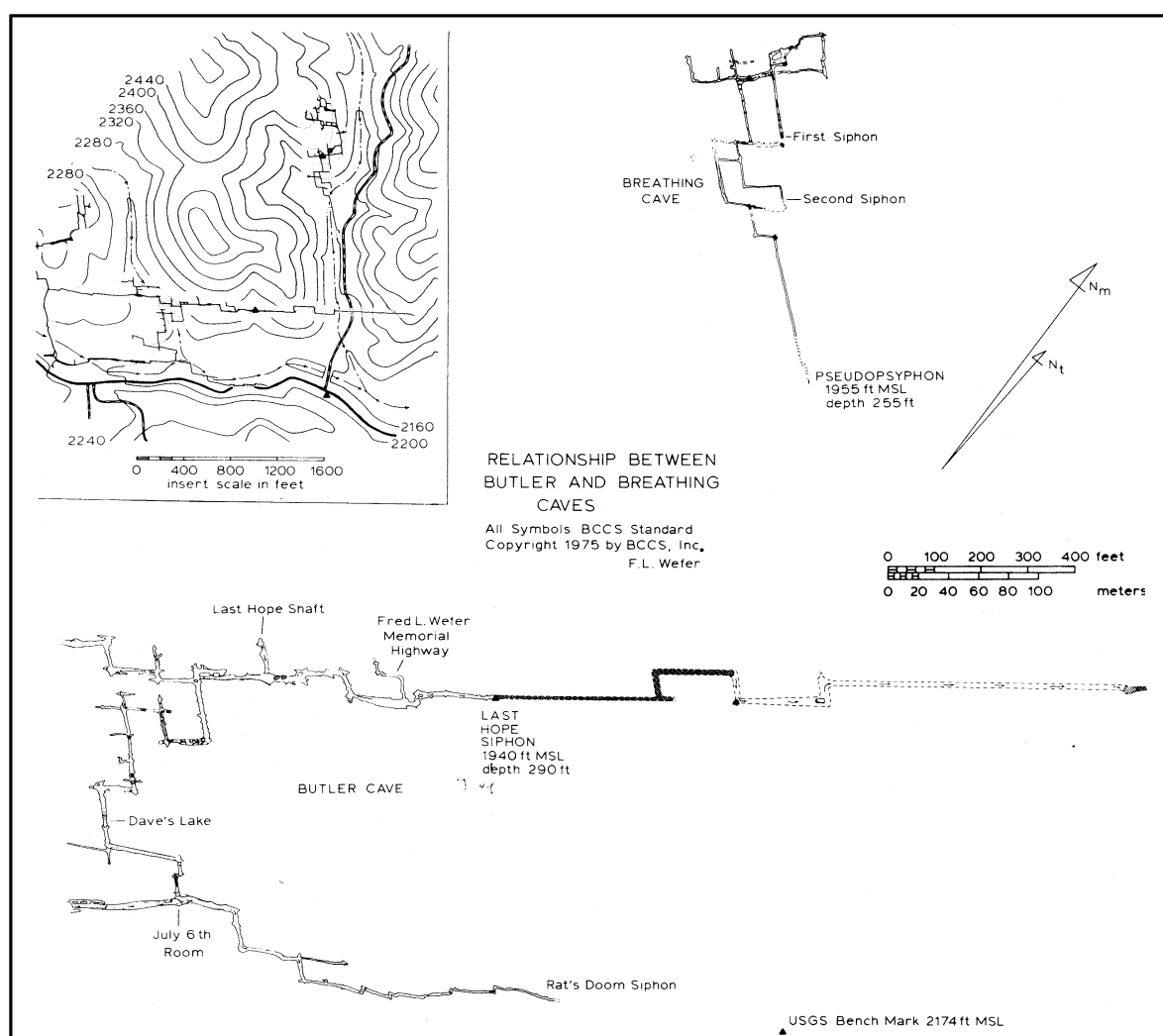


Fig. 2.16 BCCS map showing relation of the extreme downstream ends of the Sinking Creek System and Breathing Cave

2.4.2 Boundless Cave

Access to Butler Cave was tightly controlled after its discovery, first by secrecy, and later by formally leasing the cave from Carl Butler. Other cavers were busily looking for an alternative entrance. The leading candidate was Boundless Cave (Burnsville Sink Cave #2) which was quite close to the upstream maze in Butler Cave. Boundless is a maze cave with narrow passages that are often silt filled. Because the cave takes storm flow from Burnsville Sink, the silt tends to get rearranged and previously opened passages are later found to be plugged. In spite of numerous attempts by different groups of cavers, no one succeeded in finding a way through to Butler. Then, in early 2014, BCCS cavers succeeded in digging through silt-choked passages in the upstream maze and connected Butler Cave to Boundless Cave. Although, technically, Butler now has a third entrance, the connecting passages are very tight and frequently closed by silt.

2.4.3 Better Forgotten Cave

The streams in the Sinking Creek System all end in sumps but the sumps are several miles up the valley, southwest, from the known resurgence at Aqua Cave Spring. There must exist a large amount of unknown cave passage between the sumps and the spring and there is at least the possibility that some of them are air-filled. Thus there was a search for other caves in the Sinking Creek Valley downstream from the sumps. Better Forgotten Cave was one of the discoveries.

The entrance to Better Forgotten Cave is on the western flank of Chestnut Ridge on property now owned by the BCCS. The cave was first explored in 1959 through a tight entrance series to a 100-foot pit. Descending the pit proved very difficult and no leads were found at the bottom so the cave was declared “better forgotten” as indeed it was for nearly 10 years. In the fall of 1969 there were six exploration pushes into Better Forgotten Cave sparked by Jack Hess and Nevin Davis (Hess 1970). On these trips, the groups successively passed the ladder drop, the 100-foot pit, the vertical crawlway, and other obstacles to break out into a major stream passage. Upstream, the stream emerged from a sump but there were several thousand feet of passage downstream before the stream reached

its final sump. The first sump encountered had a bypass passage. The second and final sump is the present terminus of the cave. Rather than a backdoor to downstream Butler, Better Forgotten Cave revealed yet another stream apparently independent of the Butler streams but also draining to the Aqua Cave Spring. Explorers returned to Better Forgotten Cave in the 1980s and 1990s to complete an accurate survey and produce the map shown in Chap. 24 and in the electronic map file. The downstream sump is 411 feet below the entrance.

2.5 More Recent Events in Butler Cave

2.5.1 Sump Diving

The first attempt at diving the Last Hope Sump was in June, 1960, when Hank Hoover penetrated 200 feet into the sump and reported it tight but continuing. In the August, 1975, Sheck Exley, one of the country’s most experienced cave divers, had a try and penetrated 500 feet into the sump before running out of line. In October, 1975, Sheck was back with more equipment. Nevin Davis tells the story in the BCCS Newsletter (February, 1976).

At the siphon we struggled with the equipment, assembling every thing and checking its operation. When everything was ready, Sheck walked out into the pool and while still moving, put his flippers on, pulled down his face mask, and disappeared. With the double tanks, he had the capacity to penetrate 2000 feet of submerged passage and have a duration of one hour with an hour reserve if the dive was shallow. After he left we sat around periodically checking a watch. In one hour we started to worry; in an hour and a quarter we were beginning to wonder if he would return. In about one hour and twenty minutes there was a glow which rapidly grew brighter; then splash, he was back. Sheck removed his mask, smiled, and said. “Well, I have some good news and some bad news. Which do you want first?” Someone said, “The good news.” Sheck said that the siphon came up into air-filled passage about 100 feet beyond the end of his dive on 31 August. There he removed his tanks and explored about 950 feet of passage mostly 4 to 5 feet high and up to 20 feet wide in one area. The passage got as wide as 20 feet. At the end of his downstream trek was the bad news, a second siphon. It was too difficult for him to carry his tank down the passage alone to dive the second siphon. There was one side passage which quickly became too narrow to follow wearing a dry suit.

Measurements with compass and length of dive line provided a sketch map (Fig. 2.17). Shek Exley included a first hand account of his dives in Last Hope

Siphon in his memoirs (Exley 1994). Later David Whall and Karen Wark attempted to dive the Bad News Sump and found it clogged with mud.

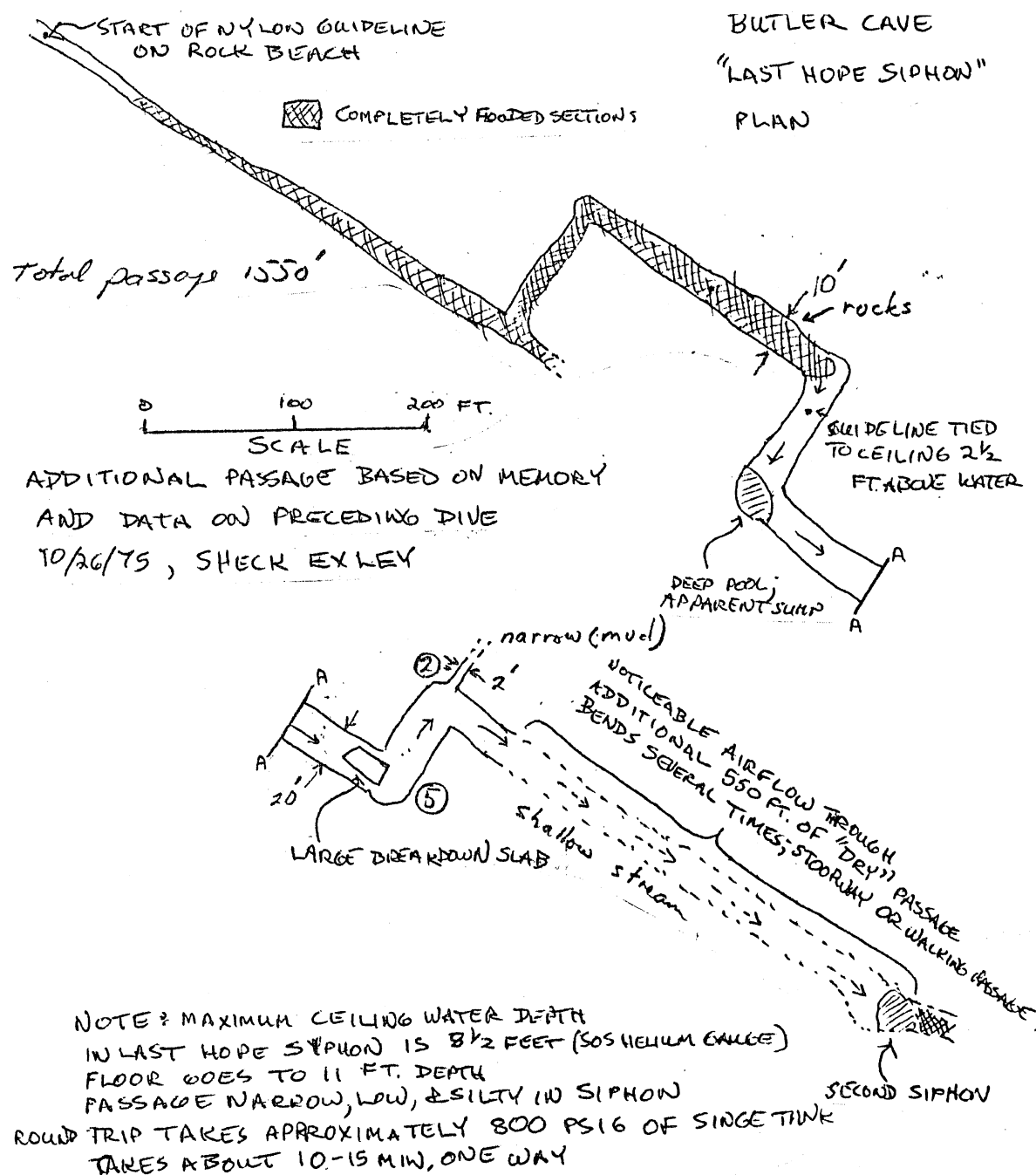


Fig. 2.17 Sketch map of the Good News Passage beyond Last Hope Siphon. From BCCS Newsletter, February, 1976

2.5.2 The SOFA Entrance

By far the most significant event in the recent history of Butler Cave was the construction of the SOFA entrance in late October, 1998 (Marks 1999). It had long been known that Dave's Gallery terminated against a breakdown and gravel fill in the walls of the sinkhole just below the Butler farmhouse. However, various desultory attempts at digging had produced nothing. Several days work with a track hoe and a bulldozer were necessary. Once breakthrough had been achieved, a 5-foot culvert was slid into the opening and the pit backfilled. The culvert was fitted with a door, steps, and a handrail. Later, a protective roof and rock walls were added to protect the door from the continuous sloughing of loose rock from the cliff overhead. Instead of a tedious series of downclimbs from the original entrance on the hillside (now known as the Nicholson Entrance), one opens the door, descends easily through the culvert and steps out into Dave's Gallery. Sand Canyon is then only minutes away.

Did BCCS really need the SOFA Entrance? Certainly, the trip from the Nicholson Entrance was not exceptionally difficult for experienced cavers. The 300-foot difference in elevation between Sand Canyon and the Nicholson Entrance was an aggravation for tired cavers returning from some activity deep within the system. Safety was improved because the time and difficulty necessary to extract an injured caver was greatly lessened. The main virtue of the SOFA entrance is that it provides access to the cave suitable for class field trips and other educational activities in which the participants may not be experienced cavers. These activities have included Outdoor Adventures arranged through the Smithsonian and also geology class field trips from Penn State and from the College of William and Mary.

2.5.3 Current Exploration

Following intensive exploration efforts in the 1970s, new discoveries in other part of Burnsville Cove diverted attention from the Butler Cave-Sinking Creek system. Most of the important leads had been checked and mapped and although there were educational and sport caving trips, few new discoveries were made. A new interest in Butler has been underway for the past five years. Exploration takes the form of digging

out silt-filled passages and using bolts and climbing poles to probe potential leads in the cave ceiling. The long-suspected connection to Boundless Cave was one of the accomplishments.

An important discovery, made in late 2010, was an air connection between Backyard Cave and Evasor Gallery in Butler. A fan with a reversing motor was placed at the entrance to Backyard Cave and a recording anemometer was placed in Evasor Gallery. The air pressure signal generated by the fan was clearly recorded in Evasor Gallery with about a 15 s delay.

The end of the story cannot be written. There is still more cave beyond the terminal sumps. The connection to Breathing Cave may or may not be a lost cause. There is a real possibility of a connection to Barberry Cave if the right silt-filled passage is dug open. New discoveries are often made where they are least expected and the best guidance for cave explorers is to just keep looking.

2.6 2008 Addendum: Placing a Bronze Plaque at the Nicholson Entrance by Philip C. Lucas

All discoveries are preceded by a sequence of events

I'm going to pull together those events, those things, those people that ultimately led to the discovery of Butler Cave, one of the most significant caves in Virginia and in the US.

To begin, the Burnsville Cove, the valley from Burnsville down to the river was much then as it is today—very rural with mostly farms and forests. This spot here was open pasture land—there were no trees except for that old snag of an ash tree down there. Fifty years ago, it was in its prime. The roads have been paved but mostly everything looked pretty much the same as it does now.

Not much was known about caves around here but that was about to change in a big way. The catalyst for that was the Burnsville Saltpeter Cave used for saltpeter mining during the Civil War. This was a huge cave thought to be the biggest in Virginia, with about 3.5 miles of passages. Its name got changed to Breathing Cave when it was discovered that it breathed with inflowing and the out-flowing air currents. People from all over would come to explore Breathing Cave. It was because of Breathing Cave that

an interest in finding more caves in the Burnsville Cave began to develop.

Now I need to talk about people and those folks who called themselves cavers. The NSS was a youthful organization in the fifties. There was an early NSS cabin along the Bullpasture Gorge where cavers would congregate. Two of those cavers who would see the potential for finding a big cave were Ike Nicholson and Oscar Estes. Ike lived in Maryland and Oscar in Staunton. Oscar and Ike were good friends and caving buddies and they were on a mission. Oscar's talent was people and he made many contacts gaining information about caves. Ike was the organizer, the dreamer of what might be, and the scout checking the ridges and valley for leads. They were a great team. When Lockridge's refrigerator spring was dived and Aqua Cave discovered—the hunt was on to find where all that water was coming from.

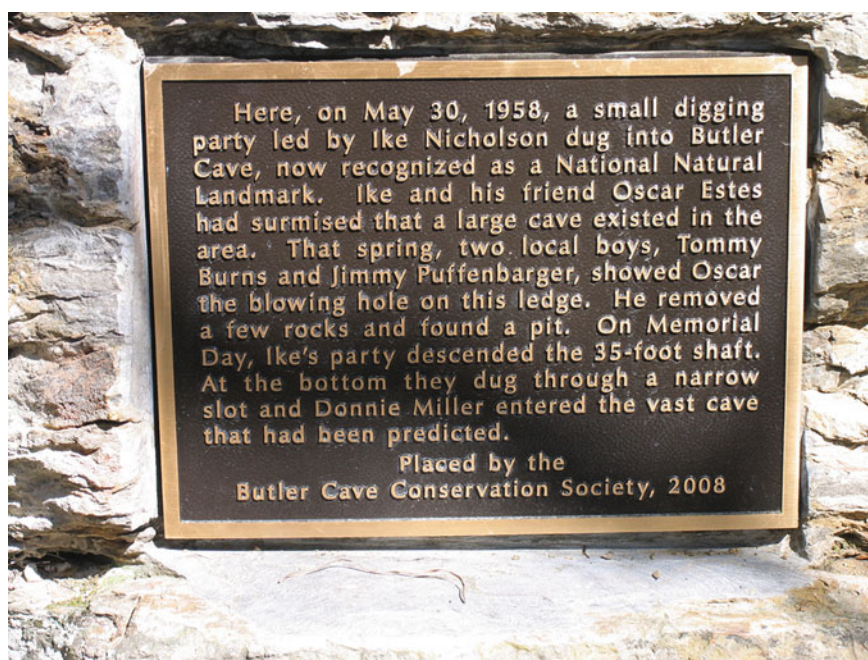
Some of Oscar's cave explorations had been with two young men who lived near Burnsville; Tommy Burns and Jimmy Puffenbarger. Oscar knew that landowners were well acquainted with their property and whether there were caves or possibilities of caves. So Oscar asked Tommy and Jimmy to keep their eyes and ears open for caves. And so it was that in the spring of 1958 Jimmy and Tommy were sitting on the porch of the store in Burnsville when they saw Oscar

driving by in his jeep station wagon. One of those guys, Tommy Burns, is with us today and so Tommy, tell us about what happened next.

Tommy (Emory) Burns then explained how he and Jimmy Puffenbarger took Oscar Estes up to the Butler Farm and up the hillside to where they had seen the blowing hole beneath a limestone ledge. He said that Oscar crawled into the cave a short ways until he came to the top of a pit. He dropped rocks down to estimate the depth of the pit. Not having come prepared that was all he could do that day.

What exactly happened next is lost to history but I think the conclusion is inescapable that Oscar quickly told his caving buddy Ike about this new pit and the first opportunity for Ike to check it out was Memorial Day Weekend. Oscar being an ex-Navy man was probably taking part in some aspect of Memorial Day celebrations back in Staunton. So Ike, following Oscar's directions, finds the cave and after descending the pit finds a nearly choked fissure too tight to get through but blowing air. He quickly determines that he needs help. So he goes back to his cabin along the Bullpasture River and secures two young volunteers and they go back up to the cave that afternoon. One of those young men was Donnie Miller and he is with us today. Donnie tell us about your efforts that day.

Fig. 2.18 The plaque at the Nicholson entrance to Butler Cave. WBW photo



Donnie Miller explained how Ike had come down to the Roller cabin excited about the cave and asked for help in digging to try and get through the fissure. He explained that he agreed to go and later that day the fissure had been opened to the extent that he could wiggle through. Donnie then said that he went some distance into the cave and that it got bigger so he finally decided he had gone far enough and crawled back through the fissure.

So they retreat from the cave and it is nearly two weeks before Ike returns with his two sons, Mike and Dave for an exploration trip. Mike is here and I'm going to ask him to describe his memories of that first cave trip.

Mike then explains that they went through the fissure (now called the Glop Slot) and down the steep slope into the first big room in the cave. They then went through the window in the Window Ledge and explored a lot cave passage in the Sand Pit area of the cave. He then told a little about subsequent trips including one where he fell from a climb on top of his brother Dave when a rock had broken cutting his brother's forehead. Tommy Burns suddenly exclaimed that he had been on that trip and remembered the accident. Mike went on to explain that his brother was not badly injured.

And so with this it was realized that an immense cavern had been discovered. Later that summer, a week-long expedition revealed further the huge size of the cave. Even though we are fifty years down the road, discoveries are still being made in Butler. Just

last year a new species of crustacean was found. And so with this fiftieth anniversary the BCCS has placed a bronze plaque to commemorate this occasion. I will read what is written on this plaque (Fig. 2.18).

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<http://www.springer.com/978-3-319-14390-3>

The Caves of Burnsville Cove, Virginia

Fifty Years of Exploration and Science

White, W.B. (Ed.)

2015, XII, 479 p. 498 illus., 412 illus. in color.,

Hardcover

ISBN: 978-3-319-14390-3