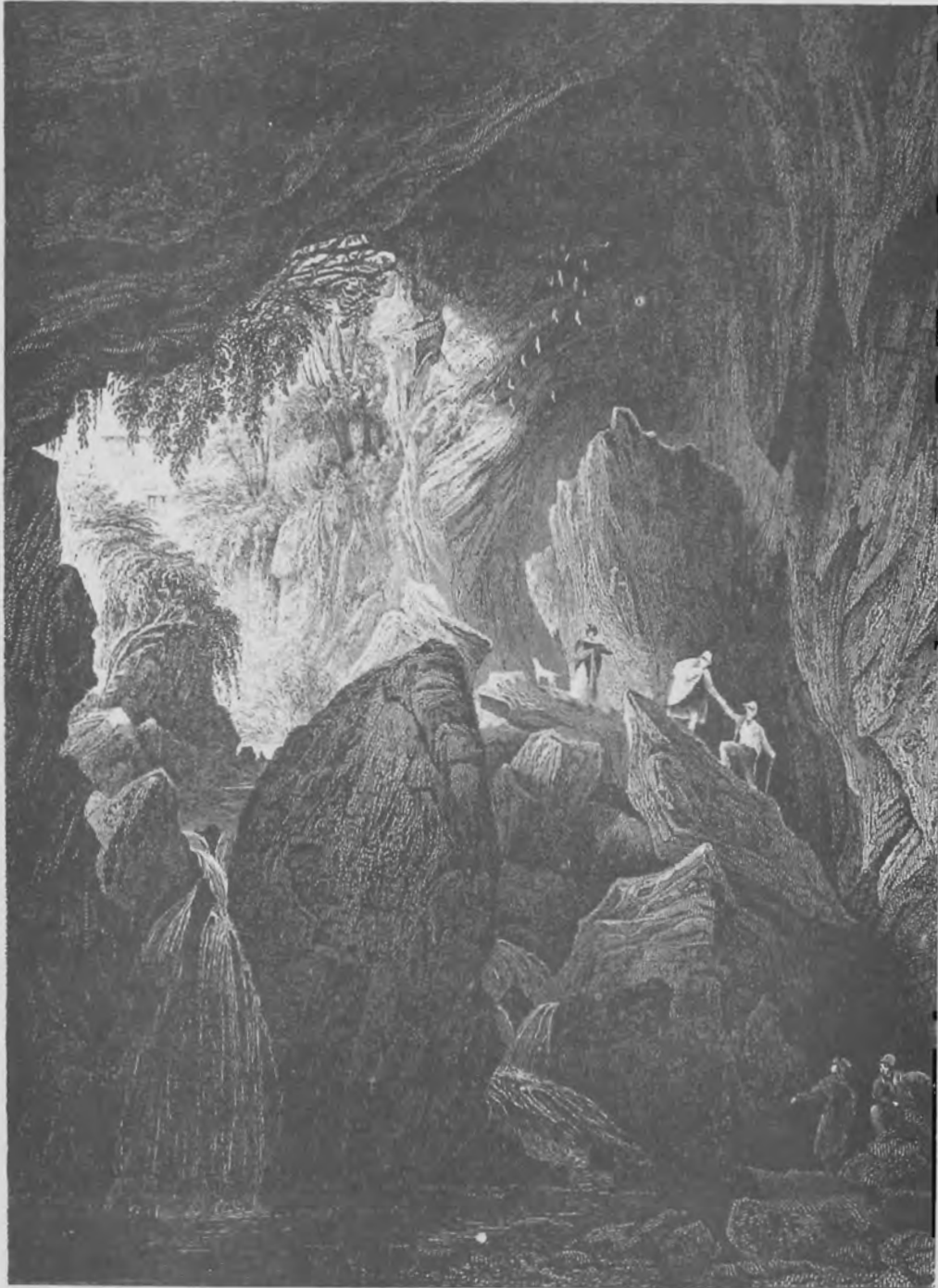


24

The Journal of Spelean History

OFFICIAL PUBLICATION of The AMERICAN SPELEAN HISTORY ASSOCIATION



Volume 6, No. 4

Autumn 1973

ABOUT THE ASSOCIATION

The American Spelean History Association is chartered as a non-profit corporation for the study, dissemination and interpretation of spelean history and related purposes. All persons of high ethical and moral character who are interested in these goals are cordially invited to become members. Annual membership is \$5.00; family membership \$6.00. Library subscriptions are \$4.00.

ABOUT THE QUARTERLY

The Association publishes the Journal of Spelean History on a quarterly basis. Pertinent articles or reprints are welcomed. As a photo-offset process is often used, the editor should be contacted in advance concerning the current type of manuscript preparation desired. Submission of rough drafts for preliminary editing is encouraged. Illustrations require special handling and advance arrangements must be made with the editor.

ABOUT BACK ISSUES

The last three volumes are available from the Secretary-Treasurer at \$5.00 per volume. About half the other issues are available at \$1.00 per copy. All back issues are available on microfiche; for further information contact Kraus Reprint Company, Route 100, Millwood, N.Y. 10546.

ABOUT THE COVER ILLUSTRATION

The Journal of Spelean History has included numerous items about a considerable variety of spelean collectables, but until now has not specifically considered cave engravings, a field of wide variety especially during the last century. The current cover illustration is a fine example of this art, showing the entrance of "Dunold Mill-Hole, near Lancashire (England)". Drawn by G. Pickering, the engraving was by R. Sands and the publisher, Fisher, Son & Co., London, 1845. The modern printer is taxed to the utmost to reproduce the fine work of such engravings. The only publication on this art form known to yr editor is ASHA member Trevor Shaw's "Cave Illustrations before 1900: a catalogue of non-photographic illustrations of caves". This was an undated British Speleological Association Monograph published early in the 1960's in a limited edition of only 100 copies now long out of print and much sought for in Europe. The cover illustration is #77 in this monograph; Shaw dates it as 1835. Would that Trevor had time to do an expanded second edition!

THE JOURNAL OF
SPELEAN HISTORY

official quarterly publication of the American Spelean
History Association

President
Dr. John Bridge
45 Short St.
Worthington, Ohio

Secretary-Treasurer
Peter M. Hauer
Rt. 1, Box 247
Hillsboro, W. Va.

Editor
Dr. W.R. Halliday
1117 36th Ave. E.
Seattle, Wash.

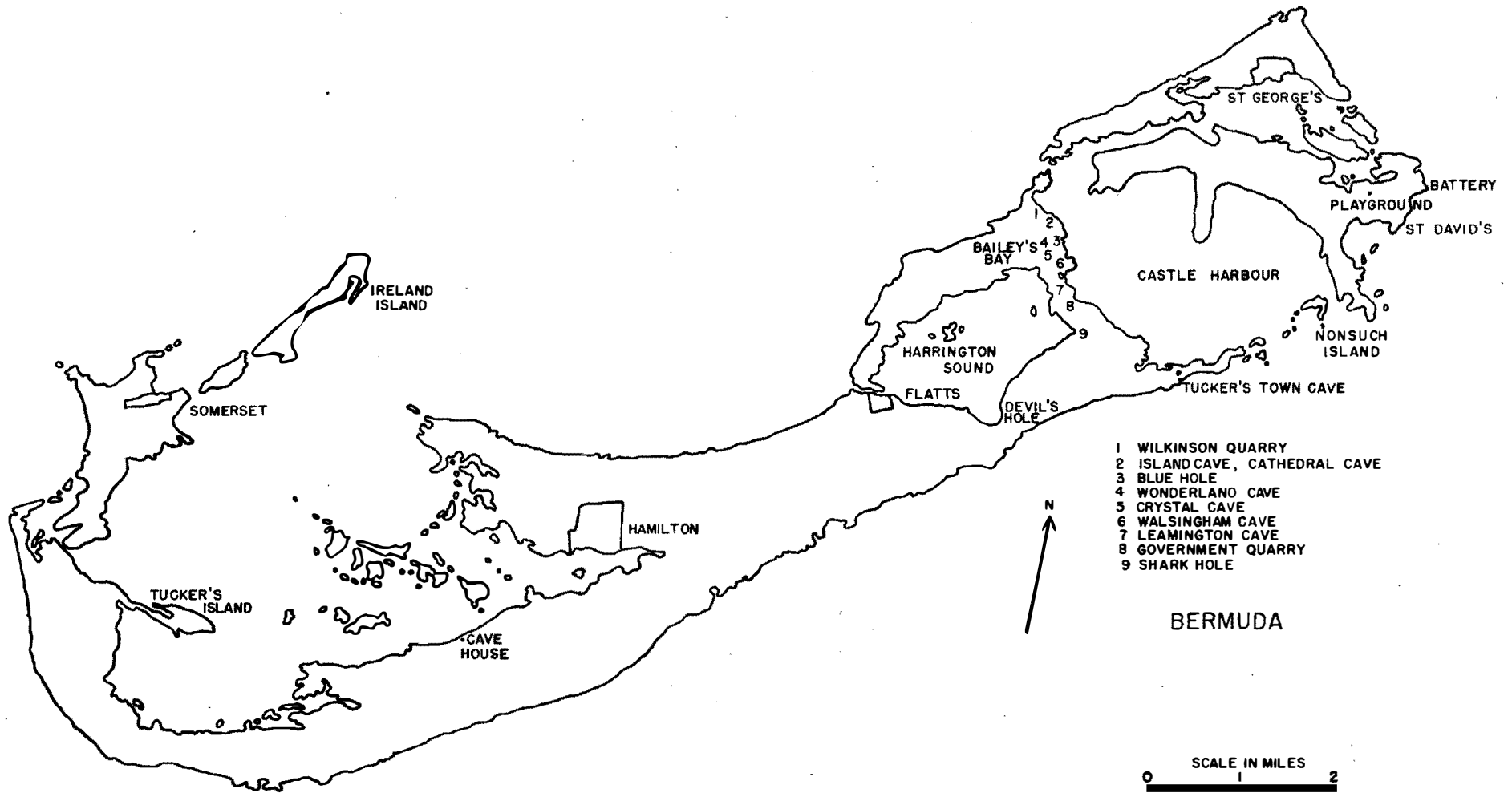
Volume Six

Number Four

October-December 1973

TABLE OF CONTENTS

- 89 Bermuda's Caves and Their History
by Gerald Glenn Forney
- 105 The Caves on Lake Erie's Islands
by John F. Bridge
- 107 Newspapers: a fugitive source for spelean history
by Stuart Seely Sprague
- 110 What Cave is This? Department
- 111 Colloquy



BERMUDA'S CAVES AND THEIR HISTORY

by Gerald Glenn Forney

INTRODUCTION

Bermuda is one of the most isolated islands in the world since it is nearly 600 miles from the nearest land. Although the land area of Bermuda is only 19 square miles, there are more than 52,000 inhabitants. The island is surrounded by a shallow bank, so that if sea level were to fall 60 feet, the land area of Bermuda would triple to about 60 square miles.

Bermuda was discovered by the Spanish sea captain Juan de Bermudez in 1503, but the island was uninhabited until 1609. In that year, the Sea Venture, a ship carrying Sir George Somers and a party of settlers bound for Virginia, wrecked on the north end of the island. The castaways spent nearly a year on Bermuda building another ship and then continued on to Virginia. However, they wrote such glowing reports about the island that in 1612 the first permanent settlers came from England. William Strachy, a member of Somers' group wrote an account of their stay that is commonly thought to have been one of Shakespeare's sources in writing The Tempest. In 1624, Captain John Smith wrote about the Summer Isles or Bermuda and discussed the search for fresh water, mentioning that in some places there were "verye strange, darke and cumbersome Caues (Smith, 1624, 1907 ed., p. 332). This was the first reference to Bermuda's many, well-decorated caves (Lefroy, 1877, p. 759).

Since 1971, Mr. C.H. Duff and I have been studying the history and geology of the caves in Bermuda. Today over twenty caves are known in Bermuda, and ten others are known by name, but have apparently been destroyed. This report is based on fieldwork by Mr. R.C. Forney, Jr., and I in November, 1971 and by Mr. and Mrs. C.H. Duff in April and June, 1972. Many of the references to caves on the island came from the Bermuda Index, a card file compiled by Mrs. Terry Tucker of the Bermuda Library. Mr. David Wingate, Government Conservation Officer, gave us information on caves he explored while hunting for bird bones. Mr. Wm. Zuill corrected a few of our factual errors dealing with historical questions. Numerous Bermuda residents including Mr. Stan Brown, Mr. Eddie Fox, Mr. Arthur Haycock, and Mr. and Mrs. Jack Mayne gave information on caves they own or manage. Drs. S.J. Gould, L.S. Land, F.T. Mackenzie, A.C. Neumann, and Alexander Wetmore gave published and unpublished information. R.L. Breitsch, D.N. Brison, Dr. W.R. Halliday, and P.M. Hauer provided additional useful references, as did J.M. Quinlan, Jr. W. Nixon and G. Jackson helped in editing and preparing the manuscript. A shorter version of this paper was submitted to the Sixth International Congress of Speleology.

GEOLOGY

The rock that crops out over most of Bermuda is a sandstone that is composed of calcium carbonate, rather than quartz sand. The sand was derived from broken seashells, Foraminifera, and calcareous algae that lived in shallow water surrounding the island. The sand was washed ashore by waves and blown about to form large dunes, which were cemented by rain and fresh ground water. Today virtually all the rock in Bermuda is dune limestone although a small fraction of the limestone probably formed in shallow water and not as dunes.

The cemented dunes extend as much as 260 feet above sea level. Several unsuccessful water wells have shown that, in places, the limestone continues down to 150 feet below sea level. The limestone overlies a layer of weathered volcanic debris, which in turn rests on basaltic lava. The basalt has been dated as Middle Eocene to Middle Oligocene age (30 to 50 million years B.P.) by the potassium-argon method (Gees, 1969, p. 56).

During the construction of the Imperial Dockyard, which began on Ireland Island in 1809, several caves were blasted open and destroyed. One of the officers connected with the work noticed that the caves on Ireland Island and elsewhere in Bermuda contained large stalagmites that were under salt water (Nelson, 1840, p. 113). Nelson did not realize that a change in sea level had drowned the stalagmites, but instead suggested that evaporation was not necessary for speleothem growth.

Several years later, Williams (1848, p. 154) proposed that the drowned caves in Bermuda meant that the land was slowly sinking. The Harrington Sound, which is a mile wide and two miles long, was therefore formed when "an extensive subsidence of the land" took place. Since then, Bermuda's drowned caves have frequently been cited as evidence that the relative position of land and sea have changed on the island.

After Darwin published his theory on coral reefs, geologists felt that the submergence of Bermuda was caused by a gradual sinking of the volcanic pedestal that underlay the island (Thomson, 1878, p. 286). It took many years for geologists to realize the true cause of the drowned caves and sea level change. In 1840, Louis Agassiz suggested that there had been a great ice age in Europe. Maclaren (1842) realized that such an ice age must have been attended by a large world-wide drop in sea level.

In 1907, Verill realized that the rocks of Bermuda were a series of dune limestones with interbedded red soils. During the course of his studies, Verill visited Peniston's Cave, Tucker's Island Cave, and several others. Verrill suggested that for red soils to form between dune layers, there must have been periods of re-elevation while the volcano was subsiding. Sayles (1931) proposed instead that the volcano was standing still, but sea level was moving up and down as the glaciers retreated and advanced.

Swinerton (1929a, 1929b) examined Crystal, Wonderland, Leamington's, Admiral's, and Bassett's Caves, and suggested that Bermuda's caves were formed by water descending along joints under vadose conditions.

However, he only included sketchy descriptions of the caves and no locations. Swinnerton also recognized that Harrington Sound and Castle Harbour were not giant sinkholes, but were merely low areas that had formed between dunes. Bermuda seemed to have two distinct types of depressions, which today would be called karstic and non-karstic or constructional (Swinnerton, 1929b, p. 81).

Some years later, Bretz (1960a, 1960b) revived the older ideas about the origin of Bermuda's topography and suggested that the bays, sounds and harbors were "huge solutional depressions" (1960b, p. 1730). In the course of his karst studies, Bretz visited Admiral's, Joyce, Walsingham, Tucker's Town, Leamington, Wonderland, Crystal, and Castle Grotto Caves. He also examined the caves in the Government and Wilkinson Quarries and the caves on St. David's Island between the Lighthouse and the Battery. He felt that Bermuda's caves represented "isolated portions of formerly extensive systems" so that the entire island could be described as a "partially drowned, late mature...karst". The evidence cited for a phreatic origin of the caves included blind solutional pockets and nearly horizontal passages.

More recent studies of the geology of Bermuda emphasize the non-karstic origin of Bermuda's landscape. Assuming a rate of erosion only slightly greater than the present rate, Land, Mackenzie and Gould (1967, p. 999) suggested that only about a meter of overall erosion could have occurred since the rock was formed. Much more rock must be removed to produce a "late mature" karst. They also pointed out the Neumann's (1965) bathymetric map of Harrington Sound shows a line of submarine sand dunes on the bottom of the sound. This suggests that the sound is constructional rather than karstic.

CAVE DESCRIPTIONS

CRYSTAL CAVE, HAMILTON PARISH

Crystal Cave is one of the two Bermudian caves that is lighted and it is visited by as many as 800 persons per day (Anon., 1969a). The entrance to the cave is an artificial tunnel about 120 feet above sea level, and the upper part of the cave is a large fracture passage with much breakdown and few signs of solution. The fracture rapidly descends to a tidal pool 200 feet long and containing a long pontoon bridge. The pool has been explored to a depth of 80 feet by divers, and there are large drowned stalagmites at depths of 30 to 60 feet (Bretz, 1960b, p. 1743). The ceiling above the pool is low and covered with stalactites.

The three accounts of the discovery of Crystal Cave are generally similar but differ in some important details. Paine (1911) tells the story from a nearly contemporary viewpoint, and his is probably the most accurate although somewhat overly romanticized. In March, 1905, a 14-year-old boy named Carl Gibbon was playing with a friend named Edward Hollis. Gibbon noticed a cool breeze coming from a hole, and after pulling aside some rocks, the boys found a cave. They returned with lights and climbed down 100 feet to the lake. Gibbon

swam across the lake and about three hours later, they collected a few stalactites and returned to the surface.

Gibbon's father was delighted to learn that such a potentially valuable attraction lay beneath his land. The boys returned several days later with a rope and acetylene bicycle lamp to do more exploring. Louis Mowbray, a biologist, heard about the cave and asked Gibbon about bones in the cave. Mowbray and Gibbon visited the cave and found bird bones and feathers embedded in calcite. The feathers apparently belonged to the cahow, a bird described by early colonists but thought to be extinct.

Although Gibbon's father owned the entrance, most of the cave was under the land of a neighbor, who blasted an artificial entrance to the cave, walled up the passage that led to Gibbon's entrance and opened the cave to the public.

According to the version of Shufeldt (1916, p. 627), Crystal Cave was "on property owned by a Negro named Gibbons. "Gibbons' son broke off several stalactites and tried to sell them to Louis Mowbray. Mowbray visited the cave on May 2, 1907, and found the skulls of a rat and a bat and also some bird bones. Sometime in 1907, Mr. Edward McGall of Orange, New Jersey, also found bird bones and three feathers embedded in calcite in the cave. McGall and Mowbray both realized that the bird bones belonged to the cahow (compare Wingate, 1960, p. 146).

The third version of the discovery (Anon., 1931) is told by the guides at the cave today. Crystal Cave was discovered by "two coloured children playing with a rubber ball". Sometime later, Mr. Julian I. Wilkinson noticed a child playing with a stalactite and asked to see the cave where it was found. Wilkinson's sons explored the cave and they decided to commercialize it. They drove a tunnel and installed acetylene lamps in the cave. The first tunnel had 100 steps (Anon., 1969a), and the cave was opened in 1908. In 1912 a more gently inclined tunnel was driven, and this is the one in use today.

In 1914, Universal Pictures produced a movie entitled Neptune's Daughter starring Annette Kellerman, an Olympic swimmer, as Annette the Mermaid. Neptune's Daughter was probably the first movie to use footage shot in a cave. As the movie begins, Annette swims through the Shark's Hole and into Crystal Cave (thanks to editing), where she pleads with the sea witch to make her mortal. Later in the movie, the Castle Grotto Cave is used as the throne room of Neptune.

Crystal Cave has always been a popular tourist attraction. In 1920, the Prince of Wales, who later became Edward VIII, visited the cave. By 1928, the admission to the cave was four shillings, and the once-popular rides on Cahow Lake had been replaced by a pontoon bridge to serve larger crowds (Rider, 1928, p. 179). The present owner is Mrs. Bernard Wilkinson, and the manager is Mr. Randolph Furbert, Crystal Cave, Wilkinson Avenue, Bailey's Bay.

WONDERLAND CAVE, HAMILTON PARISH

The entrance to Wonderland Cave is only a few hundred feet north of Crystal Cave. The entrance is behind a locked gate. Nearby is a building with a faded sign that says "Pay here". Paine (1911) tells that the cave was discovered one day in 1907 when a Mr. Haycock noticed a draft coming from a hole on his property and asked Carl Gibbon to investigate. Carl found a cave that was not as large as Crystal Cave, but which had many formations and a pretty lake. Mr. Haycock decided to open the cave for private exhibition. He hired Gibbon to construct trails and the boy discovered a large room while working in the cave.

Wonderland is the only major cave in Bermuda which is not mentioned by Rider (1928). The cave was open to the public only intermittently. According to Mr. Arthur Haycock (oral communication, November, 1971), the cave has been closed since before World War II. About 15 years ago, Wonderland Cave was purchased by the owner of Crystal Cave, Mr. Bernard Wilkinson. However in 1961, Mr. Elystan Haycock was still described, perhaps incorrectly, as the owner of Wonderland Cave (Anon., 1961a). Today the cave is gated. Mr. Arthur Haycock has one key and Mrs. Bernard Wilkinson, the other.

LEAMINGTON CAVE, HAMILTON PARISH

On November 26, 1909, a Mr. Anderson found a hole on his land and sent for Carl Gibbon who lived nearby. The hole did not go into a cave, so Anderson sent Gibbon to explore alone. He found another hole and climbed down 25 to 50 feet where he found a skull of some sort. He left the cave hurriedly and later returned with his cousin Harold Gibbon. The two boys found a third hole, moved some rocks and crawled into a large cave that had a lake and large chambers and was larger than Crystal or Wonderland Caves (Paine, 1911). Mr. Anderson visited the cave and decided to commercialize it. He gave Gibbon a reward and a job as guide.

Another version of the discovery relates that the cave was discovered in 1910 and operated by Clara and Alexander Anderson (Anon., 1951). In 1946, the cave was purchased by the Leamington Plantation Corporation. The cave is presently managed by Mr. and Mrs. Jack Mayne. Mr. Mayne (oral communication, November, 1971) relates that the cave was discovered during land clearing operations and opened to the public in 1914.

Rider (1928, p. 176) mentions that Leamington Cave was opened during January, 1912 and that it was also known as Peniston's Cave. The Leamington Cave name was derived from a nearby 17th Century house built by John Hubbard. The house was named for the Warwickshire town that was the Hubbard family's original home (Zuill, 1946, p. 171).

ADMIRAL'S CAVE, HAMILTON PARISH

Admiral's Cave is located a quarter mile inland from Castle Harbour at an elevation of 40 or 50 feet. The cave was described by Milne-Home (1866, p. 424) as about 180 feet long, 40 to 60 feet wide and, in places, up to 30 feet high. The entrance is 8 feet high and quite narrow and the floor descends rapidly and irregularly. The cave contains a large pool of salt water with a definite tidal action. Rider (1928, p. 170-171) described the cave as 100 feet west of the Joyce's Dock Caves. The terrain is rough and we were unable to relocate the cave during November 1971.

In 1819, Admiral Sir David Milne removed a large stalagmite 75 feet inside the entrance and shipped it to Scotland. One of his sons, Sir Alexander Milne, visited the cave in 1863 and found that 5 cubic inches of stalagmitic material had been deposited in the intervening 44 years. Another son, David Milne-Home (1866, p. 426) calculated that if the rate of deposition was constant, the large stalagmite which contained 76,000 cubic inches of calcite, must be 600,000 years old. The 600,000-year age has been widely quoted, but later authors such as Farrington (1901, p. 255) have failed to note the assumption of a constant rate of deposition.

Sometime in the 1920's, Hiram Hoyt found specimens of the fossil land snail Poecilozonites nelsoni nelsoni in Admiral's Cave (Gould, 1969b, p. 514).

JOYCE'S DOCK CAVES, HAMILTON PARISH

Rider (1928, p. 171) claimed that there were five caves in the Joyce's Dock group but mentioned only two of them, Island and Cathedral Caves, by name. At that time, Island Cave was also known as Prospero's Magic Cave and was open to the public with an admission charge of three shilling tuppence or 75¢.

An unfounded legend retold by Smith (1958) claims that Sir George Somers found Island Cave while shipwrecked on Bermuda in 1609-10. William Strachy's letter about the adventures of Somers' crew was one of the sources that Shakespeare used in writing The Tempest ("from the still-vexed Bermoothes" I.ii.229). However the identification of Island Cave with Prospero's Cell has no basis in fact.

Mr. Ernest ("Pussy") Bourne was still operating the cave as a tourist attraction in 1949 at the age of 81 (Smith, 1958). The first form of illumination was torches made of cedarwood brush, then acetylene and finally electric lights were used. At one point the ceiling became so soot-covered that Bourne whitewashed the entire cave (Mrs. Jack Mayne, oral communication, November, 1971).

Bretz (1960b, p. 1743), apparently having misidentified Island and Cathedral Caves, calls them Admiral and Joyce. Admiral's Cave is several hundred feet from Island and Cathedral which are so close that they probably connect. Gould (1969b, pp. 513-514) mentioned that 'Prospero's Cave' was a locality for Poecilozonites nelsoni nelsoni. The Joyce's Dock property is now a hotel called Grottoes Harbour and there is a subterranean bar in Island Cave.

WALSINGHAM CAVES, HAMILTON PARISH

One of the members of Sir George Somers' shipwrecked crew was named Walsingham, and the name is now attached to part of the area between Castle Harbour and Harrington Sound (Zuill, written communication, June 30, 1972). Over the years, the term Walsingham Caves had referred to one or all the caves in the area. In 1840, Nelson (p. 119) mentioned caves at Walsingham, "near the ferry", but indicated that they were not as pretty as other caves nearby.

In 1803, the Irish poet Thomas Moore (1779-1852) was appointed registrar of the Admiralty Prize Court in Bermuda. He spent much of his four months in Bermuda writing poetry in the shade of a calabash tree at Walsingham near the home of Hon. Samuel Trott. One of his Odes and other Poems which was published in 1806 mentions the "sparkling roofs and pearl-blue ponds" of the Walsingham Caves (Hovey, 1896, p. 13).

Early in this century, the twelve caves at Walsingham were the most frequently visited caves in Bermuda (Verrill, 1908, p. 108). The largest of the Walsingham Caves has two entrances and is located near the calabash tree (Rider, 1928, p. 182). More recently, Paul Cooper found cahow and crow bones in a cave at Walsingham (Anon. 1967b). Tom Moore's Cave mentioned by Gould (1969a, pp. 512-513) is probably the Walsingham Cave since it is located "north of Tom Moore's tavern".

CASTLE GROTTTO, HAMILTON PARISH

Castle Grotto Cave is located on the coast of Castle Harbour just north of the ticket office for the Blue Hole dolphins. The cave was used as the throne room of Neptune in the 1914 movie Neptune's Daughter (Rider, 1928, p. 181). The cave has concrete walkways and was open to the public in the past (Rider, 1928, p. 172; Bretz, 1960b, p. 1743), but today it is used for storing dolphin food. There is also a passage behind the Blue Hole (Verrill, 1907, p. 42), but it is inaccessible today.

GOVERNMENT QUARRY CAVES, HAMILTON PARISH

In March, 1960 excavations at the Government Quarry opened a cave which contained many bird bones (Anon., 1960a, 1960b, 1962). Dr. Pierce Brodkorp of the University of Florida examined the bones and found that many were from a flightless bird similar to the clapper rail. Brodkorp also identified the bones of two or more smaller rails, a crow, a duck, a crane, and two species of small songbirds. Other bones discovered came from a cuckoo, a small lizard, and a bird that may have been a large wood pecker. Unlike most of the Bermudian caves, Rail Cave is a solution tube that shows few signs of collapse. The bird bones were disarticulated and had probably been washed into the cave from the surface. Land (1970, p. 179) analyzed a stalactite collected in Rail Cave (written communication, May, 1972).

On February 23 or 24, 1966, workmen at this quarry found a cave in the shop area of the Public Works Department while digging a trench to lay cable (Anon., 1966, 1967a, Allen, 1966). The cave is under the stores building. It is 60 feet long, 40 feet wide and 50 to 55 feet high in places. The cave contains many speleothems and David Wingate found a few cahow bones in it.

During the weekend of November 11 and 12, 1967, David Wingate and Paul Cooper found the bones of finch-type birds, rails, and cahows in another newly opened cave in the quarry (Anon., 1967b). The fauna of Finch Cave also included a possible woodpecker, a large shearwater, and a lizard. The material was highly disarticulated and was probably washed in from the surface (D. Wingate, oral communication, November, 1967).

In early May, 1969, workers at the quarry opened a cave several hundred feet long, 50 feet wide, and 10 feet high, with large pools of water at both ends (Anon., 1969a). David Wingate (oral communication, November, 1971) found a dead bat, Lasiurus sp., in the cave. The bat must have wandered in accidentally, since none of the bats in Bermuda normally inhabit caves (Wingate, 1959, p. 5).

Wilson's Cave, located near the Government Quarry, was recently bulldozed shut and will probably be destroyed by quarrying. The cave had a small natural entrance and was very well decorated. A talus cone of red soil contained many cahow bones (D. Wingate, oral communication, November, 1971).

OTHER CAVES IN HAMILTON PARISH

Thomson (1878, p. 304-305) used a small rowboat to explore the well-decorated cave at Painter's Vale near the present Castle Harbour Hotel. Verrill (1907, pp. 39-40; 1908, p. 109) mentioned a Peniston or Paynter's Vale Cave on the land of W.S.O. Peniston on top of a hill south of Harrington House. Rider (1928, p. 176) identifies Peniston Cave with Leamington Cave, but this seems unlikely since Leamington Cave was not discovered until 1910. H.C. Hoyt collected Poecilozonites shells in a "cave near Harrington House" in 1927 that may have been Peniston's Cave. Apparently the Peniston Cave was destroyed by quarrying when the land became part of the Government Quarry (Zuill, written communication, June 30, 1972).

Cooper's Hole is a cave along the coast of Castle Harbour just south of the Government Quarry (Rider, 1928, p. 176). Britton (1915) collected mosses in Cooper's Hole, but we have not been able to relocate the cave.

Church Cave is located just south of the carriageway that leads to the Castle Harbour Hotel. The cave is a fracture that descends steeply to a small pool. It was supposedly used for worship by a 17th Century religious group that was being persecuted (Zuill, written communication, June 30, 1972). Britton (1915) also collected mosses in Church Cave.

Thomson (1878, p. 302) includes a picture of the entrance of Convolvulus Cave, which was also mentioned by Verrill (1907, p. 40). The cave was in the Paynter's Vale area, but has not been relocated.

There is another cave called Paynter's Cave on the hill between the Castle Harbour Hotel and the Government Quarry. The cave is probably not the one described as Paynter's Vale by Verrill since the entrance is vertical and very tight. The interior of the cave consists of a breakdown chamber 60 feet wide and 100 feet long and 15 to 20 feet high. David Wingate (oral communication, November, 1971) explored the cave and found songbird and cahow bones.

The cave in the Wilkinson Quarry which was mentioned by Bretz (1960b, p. 1734) and Gross (1964, p. 181) has been destroyed by quarrying activities. The bird bones and land snails collected by Dr. Heinz Lowenstam probably came from this cave. Wetmore (1960) described the bird fauna from Wilkinson Quarry which included a cahow, a nearly flightless duck, a flightless crane, and a rail.

In March, 1960 workers digging a cesspit for the Eastern Exchange Building of the Bermuda Telephone Company broke into a cave 65 feet long and 45 feet wide. Since the cave had no apparent outlet, the project architect decided to use the entire cave as part of the sewage facility, remarking "the cave will increase the volume of the cesspit 20 times" (Anon. 1960c).

Verrill (1908, p. 11) also mentioned two collapsed caves on the north shore of the island near Bailey's Bay, and a cave behind the Shark's Hole (Verrill, 1907, p. 40), but it is accessible only by boat. The water-filled sinkhole on Coney Island may also be a collapsed cave (Verrill, 1907, p. 40).

SMITH'S PARISH CAVES

Lloyd (1855, pp. 155-156) mentioned a "curious and beautiful natural fish-pond near Harrington Sound, belonging to Mr. Trott". This, The Devil's Hole, was probably Bermuda's first tourist attraction. It was walled by its owner, Mr. Trott, in 1830 and opened to the public with an admission fee in 1843 (Zuill, 1946, p. 175). Verrill (1908, p. 111) realized that the Devil's Hole was a collapsed sinkhole. Harshberger (1914, pp. 195-196) examined the blue-green algae associated with small stalactites on the walls of Devil's Hole. He suggested that the algae help precipitate calcium carbonate by removing CO₂ from drip water. This cave was once also called Neptune's Grotto (Rider, 1928, p. 175).

Sears Cave, near St. Mark's Church, is really a sinkhole that was once famous because it contained a rare fern (Zuill, written communication, June 30, 1972). However, there has been extensive dumping into the cave and the ferns may no longer exist.

TUCKER'S TOWN CAVE, ST. GEORGE'S PARISH

Tucker's Town Cave is located in Tucker's Town about 200 feet east of the Mid-Ocean Coub. The cave entrance is immediately south of the road that runs along the southern shore of Tucker's Town Bay. It is a shaft 50 feet deep with salt water covering much of the bottom. Remnants of steps and concrete walkways suggest that the cave was once developed. Swinnerton (1929, p. 80) indicated that the water in this cave showed a tidal range of about two feet and that the formations in that zone had been partially dissolved.

OTHER CAVES IN ST. GEORGE'S PARISH

Bretz (1960b, pp. 1742-1743) mentioned five shallow caves along the coast of St. David's Island between the Battery and the Lighthouse. One of the caves, Freshwater Cave, contains rimstone dams with pools that are stepped down from the entrance, which is in a sea-cliff, into the cave. These rimstone pools are the only standing fresh water known in Bermuda.

On August 4, 1969, a cave was discovered by engineers excavating for a playground on the hill beneath the Kindley AFB Elementary School. The playground is located at the intersection of St. David's Road and Texas Road, but the cave was destroyed immediately after being explored.

Maps made before World War II show a Cave Island in Castle Harbour, but it was buried during construction of the airport (see the map in Rider, 1928, for example).

CAVE HOUSE, WARWICK

On October 17, 1961, workmen found a cave while excavating for an addition to Bel-Mer, the home of Cdr. and Mrs. Geoffrey Kitson. The cave was explored by Mr. Elystan Haycock and was described as low with hands-and-knees crawling. The cave extends today from the basement of the house, along Harbour Road, under the Belmont Golf Course. Cdr. Kitson has installed lights in the cave, but it is not open to the public. The discovery of the cave was described in many newspaper articles (Anon., 1961a, 1961b, 1964; Allen, 1966; Kelly, 1961; Mason, 1963; Rose, 1961).

BASSETT'S CAVE, SANDYS PARISH

Nelson (1840, p. 118) described Bassett's Cave near Somerset as the largest cave in Bermuda since "it is said to extend for more than a mile". The cave was also mentioned by Lloyd (1835, p. 192), who tells of an apparent suicide or drowning that took place in the cave. In 1907, Edward McGall found a "perfect skull and beak of Strickland's shearwater" in Bassett's Cave (Shufeldt, 1916, p. 626). The location of the cave is shown on the map in Zuill (1946, p. 351); it is on the mainland, facing Tucker's Island. The cave was rediscovered in 1961 and used by the U.S. Navy for dumping fuel oil. Today a man-hole cover marks the only entrance (Mason, 1963, pp. 35-37).

TUCKER'S ISLAND CAVE, SANDYS PARISH

Nelson (1840, p. 119) described a cave on Tucker's Island as about 80 feet long and 40 feet high. The cave was partially water-filled, with pools up to 14 feet deep and ceilings as much as 15 feet above the water. It contained stalactites as much as 7 feet long, but the cave was destroyed during construction of fortifications.

Another cave on Tucker's Island was 300 feet long, from 50 to 200 feet wide, and up to 60 feet from floor to roof. The floor was a large pool about 12 feet deep and the cave was toured by rowboat. It was lighted by a generator of acetylene outside the cave, and in 1908 (Verrill, 1908, p. 110), was the only commercial cave in Bermuda. This cave may have been destroyed by construction of the U.S. Naval Base on Tucker's Island.

IRELAND ISLAND, SANDYS PARISH

Nelson (1840, pp. 112-113, 119) also described several caves opened and destroyed during construction of fortifications on Ireland Island. Most contained saltwater and drowned stalagmites and extended well below sea level. A cave under the North Bastion contained bird bones and snail shells ("Helix", most probably Poecilozonites) in a red "unctuous" clay. This was the first discovery of sub-fossil bird bones in Bermuda (Wetmore, 1962, p. 15). Another cave was near the "Magazine Pond".

CONCLUSIONS

Caves were known in Bermuda well before the first cave was found in the United States. Over the past 150 years many caves have been discovered in Bermuda and not a few have been destroyed. Individual caves have often had many visitors and several names through the years.

Historical methods have proved very useful in relocating lost caves and matching old cave names with known features. The Bermudian caves have also been important as collecting sites for fossil birds and snails and for living mosses, so the locations of the caves should not be lost. The histories of the individual caves are colorful but often contradictory, and cave history should receive additional study at the Registrar of Deeds, the Bureau of Vital Statistics, and elsewhere in Bermuda archives.

The caves should especially be mapped, since that is the best form of 'fingerprinting' available. Further studies on the origin of Bermuda's caves should take into account ideas developed by Jennings (1968) about similar caves in the southern part of West Australia. The Bermudian caves should also be examined by competent biologists looking for fauna adapted to cave life on land or in the salt water pools.

* * *

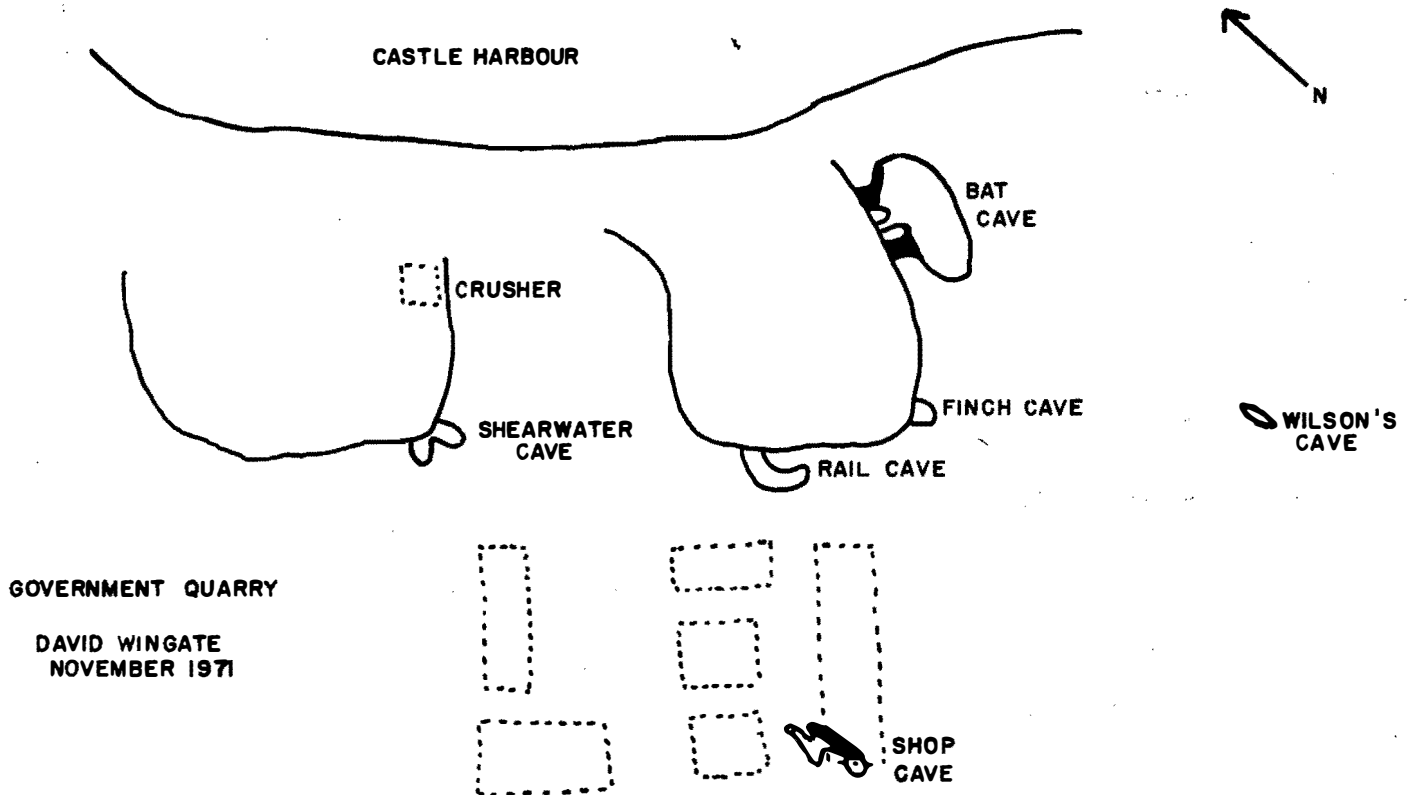
(Inadvertent omission from "Literature Cited": Maclaren, C., 1842. The glacial theory of Professor Agassiz. American Journal of Science, Ser. 1, v. 42, pp. 346-365.)

LITERATURE CITED

- Anonymous, 1931. Crystal Cave. Bermudian Magazine, v. 2, no. 4, p. 23.
- , 1951. Leamington caves discovered by chance. Sunday Royal Gazette, v. 4, no. 39, p. 7 (September 30).
- , 1960a. Fossil cave. Royal Gazette, v. 40, no. 64, p. 1 (March 16).
- , 1960b. Expert says find one of "richest in years." Royal Gazette, v. 40, no. 70, p. 1,10 (March 22).
- , 1960c. Workmen discover centuries-old cave at Bailey's Bay. Royal Gazette Weekly, v. 8, no. 13, p. 16 (March 27).
- , 1961a. Big cave find in Paget. Royal Gazette, v. 41, no. 245, p. 1-2 (October 21).
- , 1961b. (Two pictures of Cave House Cave). Royal Gazette Weekly, v. 9, no. 45, p. 2 (October 22).
- , 1962. Bermuda 1959-1960. Colonial Report. London. 85 p.
- , 1964. Discovery. Royal Gazette (Belmont Golf and Country Club Supplement), v. 44, no. 262, p. xvi (December 17).
- , 1966. Big cave discovery at quarry. Mid-Ocean News, v. 54, no. 40, p. 1 (February 26).
- , 1967a. Report of the Public Works Department, Bermuda for 1966. 46 p.
- , 1967b. Half-million year old bird bones discovered. Royal Gazette, v. 44, no. 267, p. 3 (November 16).
- , 1969a. "New look" for Crystal Caves. Bermuda Sun Weekly, no. 228, p. 5 (March 22).
- , 1969b. Quarry men find huge cave. Royal Gazette, v. 46, no. 105, p. 1 (May 5).
- , 1969c. Cave discovered. Royal Gazette, v. 46, no. 183 p. 3 (August 7).
- Allen, C., 1966. Newly-found cave only one of dozens. Mid-Ocean News, v. 54, no. 45, p. 9. (March 5).
- Bretz, J H., 1960a. Origin of Bermuda caves. National Speleological Society Bulletin, v. 22, p. 19-22.
- , 1960b. Bermuda: a partially drowned, late mature Pleistocene karst. Geological Society of America Bulletin, v. 71, p. 1729-1754.
- Britton, E.G., 1915. Mosses of Bermuda. Torrey Botanical Club Bulletin, v. 42, p. 71-76.
- Farrington, O.C., 1901. Observations on Indiana Caves, Field Museum Publication 53, Geology Series, v. 1, no. 8, p. 247-266.
- Gees, R.A., 1969. The age of the Bermuda sea mount. Maritime Sediments, v. 5, p. 56-57.
- Gould, S.J., 1969a. Land snail communities and Pleistocene climates in Bermuda: a multivariate analysis of micro-gastropod diversity. Proceedings of the North American Paleontological Convention, part E, p. 486-521.
- , 1969b. An evolutionary microcosm: Pleistocene and recent history of the land snail *P. (Poecilozonites)* in Bermuda. Bulletin of the Museum of Comparative Zoology, Harvard, v. 138, no. 7, p. 407-532.

- Gross, M.G., 1964. Variations in the O^{18}/O^{16} and C^{13}/C^{12} ratios of diagenetically altered limestones in the Bermuda Islands, *Journal of Geology*, v. 72, p. 170-194.
- Harshberger, J.W., 1914. Algal stalactites in Bermuda. *Torreyia*, v. 14, p. 195-197.
- Hovey, H.C., 1896. Celebrated American Caverns. Cincinnati, Robert Clark, 228 p.
- Jennings, J.N., 1968. Syngenetic karst in Australia. Australian National University, Department of Geography, Publication G-5, p. 41-110.
- Kelly, E., 1961. Underground fairyland. *Bermudian Magazine*, v. 32, no. 10, p. 31.
- Land, L.S., 1970. Phreatic versus vadose meteoric diagenesis of limestones: evidence from a fossil water table. *Sedimentology*, v. 14, p. 175-185.
- Land, L.S., F.T. Mackenzie, and S.J. Gould, 1967. Pleistocene history of Bermuda. *Geological Society of America Bulletin*, v. 78, p. 993-1006.
- Lefroy, J.H., 1877. Memorials of the discovery and early settlement of the Bermudas or Somers Island, 1515-1685, v. 1, London: Longmans, Green, 772 p.
- Lloyd, S.H., 1835. Sketches of Bermuda. London: James Cochrane, 258 p.
- Mason, D., 1963. Let's go cave hunting. *Bermudian Magazine*, v. 33, no. 11, p. 20-21, 35, 37.
- Milne-Home, D., 1866. Notice of a large calcareous stalagmite brought from the island of Bermuda in the year 1819, and now in the College of Edinburgh. *Royal Society of Edinburgh Proceedings*, v. 5, p. 423-428.
- Nelson, R.J., 1840. On the geology of the Bermudas. *Geological Society of London Transactions*, ser. 2, v. 5, p. 103-123.
- Neumann, A.C., 1965. Processes of recent carbonate sedimentation in Harrington Sound, Bermuda. *Bulletin of Marine Science*, v. 15, p. 987-1035.
- Paine, A.B., 1911. The boy cave-finder of Bermuda. *St. Nicholas Magazine*, v. 38, p. 447-451.
- Rider, F., 1928. *Rider's Bermuda*. New York: MacMillan, 247 + xxxvi p.
- Rose, H., 1961. New cave "find" was foreseen in 1908. *Bermuda News Pictorial*, p. 4 (October 28).
- Sayles, R.W., 1931. Bermuda during the Ice age. *American Academy of Arts and Sciences Proceedings*, v. 66, p. 381-467.
- Shufeldt, R.W., 1916. The bird caves of the Bermudas and their former inhabitants. *Ibis*, ser. 10, v. 4, p. 623-635.
- Smith, B., 1958. No tourists now at Prospero's Cave. *Royal Gazette Weekly*, v. 6, no. 3, p. 10 (January 19).
- Smith, J., 1624 (reprinted 1907). *Generall historie of Virginia, New England and the Summer Isles*. Glasgow, John MacLehose, v. 1, 396 p.
- Swinnerton, A.C., 1929a. Changes of baselevel indicated by caves in Kentucky and Bermuda (abstract). *Geological Society of America Bulletin*, v. 40, p. 194. *Pan-American Geologist*, v. 51, p. 68-69.

- , 1929b. Caves of Bermuda. Geological Magazine, v. 66, p. 79-84.
- Thomson, C.W., 1878. The voyage of the "Challenger" The Atlantic, v. 1. New York: Harper, 391 p.
- Verrill, A.E., 1907. The Bermuda Islands, Part IV: Geology and Paleontology. Connecticut Academy of Arts and Sciences Transactions, v. 12, p. 45-348.
- , 1908. The caverns of Bermuda. Tropical and Sub Tropical America, v. 1, no. 3, p. 107-111.
- Wetmore, A., 1960. Pleistocene birds in Bermuda. Smithsonian Miscellaneous Collection Publication 4423, v. 140, no. 2, p. 1-11.
- , 1962. Notes on fossil and subfossil birds. Ibid, Publication 4502, v. 145, no. 2, p. 1-17.
- Williams, W.F., 1848. Account of the Bermudas. London: Newby, 346 p.
- Wingate, D.B., 1959. A checklist of the birds, mammals, reptiles, and amphibians of Bermuda. Bermuda Audobon Society, 33 p.
- , 1960. Cahow, living legend of Bermuda. Canadian Audobon, v. 22, no. 5, p. 145-149.
- Zuill, W., 1946. Bermuda journey: a leisurely guidebook. New York: Coward-McCann, 426 p.

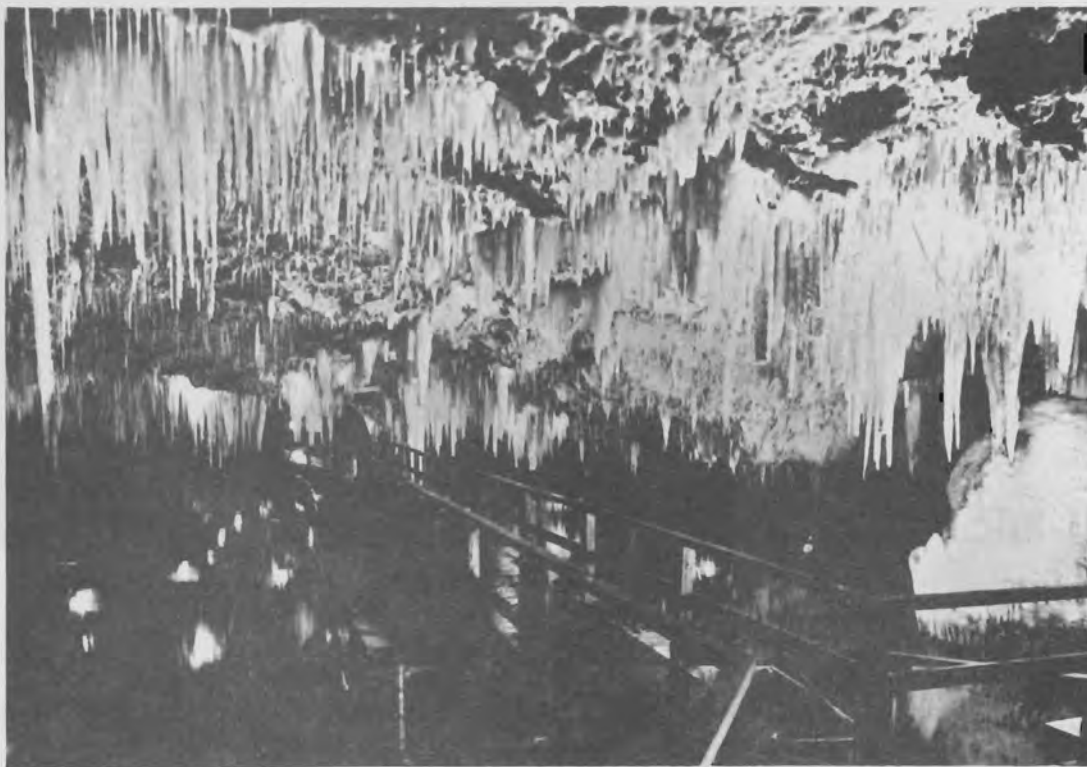




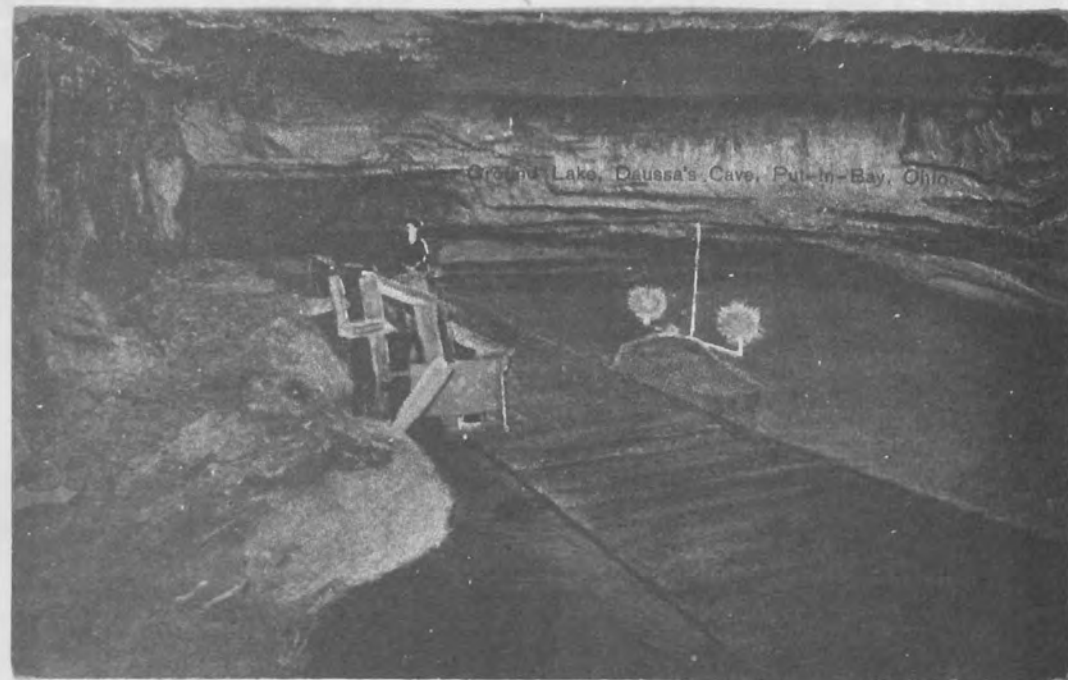
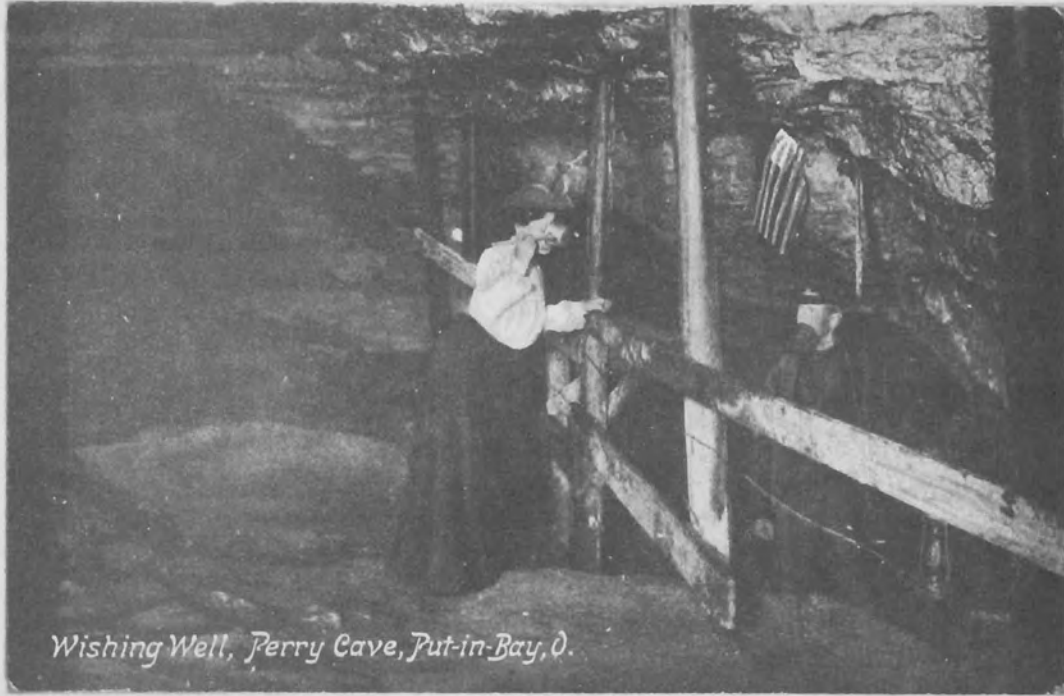
Carl (rt.) and Harold Gibbon



The Admiral Cave stalagmite.
Courtesy Dr. Harry Macpherson,
Curator of Minerals, Royal Scottish
Museum Edinburgh.



The Pontoon Bridge on Lake Cahow in Crystal Cave.



Old postcards of the Put-in-Bay caves, from yr editor's collection.
Above: "Wishing Well, Perry Cave, Put-in-Bay, O."
Below: "Under Ground Lake, Daussa's Cave, Put-in-Bay, Ohio"

THE CAVES ON LAKE ERIE'S ISLANDS

BY John F. Bridge, Ph.D.

The islands at the west end of Lake Erie have an interesting and unique history. The Treaty of Paris in 1763 after the Revolutionary War more or less ignored them. Not until 1913 was an exact boundary defined between Canadian and American islands through a series of straight lines and turning points based on lighthouse positions.

Kelley's Island and Middle Island consist of Columbus limestone which has been quarried extensively, as has the same formation on the mainland. This formation does not seem to produce many caves of any sort. The others in the island group consist of a rather complicated formation of dolomite, limestone and shale, with extensive lenses of gypsum. Most of the known caves of historical significance are on South Bass (Put-in-Bay) Island, which is composed of Put-in-Bay dolomite. The entire island is contained within a 50-foot-thick bed of this formation. The generally accepted explanation of the origin of its caves is that anhydrous calcium sulfate in lenses within the flat-bedded dolomite were slowly hydrated over the years as the lake formed. This caused expansion which produced dome structures within the matrix. As water saturated the jointed rock structure the gypsum was slowly dissolved out of the pockets, leaving voids which in some cases collapsed, forming sinkholes and in other cases remained stable in some form, producing a cave chamber. Very little solution of the dolomite formation appears significant in the caves' origin or present condition. The caves do contain calcite speleothems, and some collapse entrances appear to have been slightly enlarged by solution. The water-level in some cave pools is controlled by that of the lake.

Crystal Cave appears different from all the others, but its origin may well be similar. The occurrence of very large crystals of strontium sulfate on floor, ceiling, and walls has caused some observers to compare it to a large geode. It is more likely that differential solution of the gypsum within the chamber caused preferential growth of the large strontium sulfate crystals at the same time the calcium sulfate was leaving the cave in solution. This cave had no natural entrance. Its discovery was involved, and is incorrectly told to visitors. According to the guide, the Heinemann brothers were drilling a well for their winery and lost a drill bit when they hit the cave chamber, etc.

Strontium sulfate crystals were discovered on Green (or Strontian) Island about 1859. In 1880 a well on the Heinemann property (then owned by Mr. Herbster) did penetrate a bed of strontium sulfate crystals of large size and unusual clarity, about 6 feet thick. In 1882, a German, Emil Venator, an ex-officer in the Russian Army, visited the island and decided to mine the deposit for export to Europe. The mining rights were obtained and some 75 tons of the mineral were shipped off for sale at a loss in Germany. The German miner departed the island never to be heard from again. When Gustav Heinemann purchased the land later he found the mine had partially collapsed revealing a 20-foot-high chamber lined with glittering white strontium sulfate crystals of spectacular size. The cave has been continuously operated commercially in conjunction with the winery since it was opened in 1885 and

today is the only commercial cave on any of the Lake Erie Islands. Today no fee is charged due to the deteriorated condition from smoke, soot, mud, and vandalism. Have a few belts of wine in the tasting room, and the bartender will let you into the cave to poke around at your own speed. The door to the cave is the one just to the left of the men's room.

Perry's Cave, the most famous South Bass Island cave, is closed at present for the first time in almost 100 years. I was unable to learn why it has been closed. To the discredit of local lore, neither Commodore Perry nor any of his men ever laid eyes on the cave. In 1813 a Captain James Harper from Sandusky, Ohio, was encamped on the island and reported visiting a cave in which was found an 8-foot-tall mummy. The bones conveniently crumbled when taken from the cave. In 1818 Estwick Evans reported visiting a cave with a lake at one end, which was probably Perry's Cave. In 1831 Samuel R. Brown recorded a visit to the cave.

The son of the John Brown of Harper's Ferry fame, John Brown, Jr., came to South Bass Island to live in 1862. He was a permanent resident until 1885 when he moved to California. He visited the cave many times and reported on its first survey in the 1870's. Jay Cooke, an investor in island property and sometimes resident, described the formations in the cave in his journals as equal to any in the Mammoth Cave of Kentucky.

The fortunes of the islands, and particularly Put-in-Bay, have waxed and waned with the general economy. Caves were discovered, opened, closed, named, and renamed over the years. I have a map showing the locations and names of some 30 caves on South Bass Island. After trying to find some of the caves, it seems more like a treasure map drawn by Edgar Allan Poe. Certainly these caves are in a continual state of opening, closing and collapsing. Many apparently have several names depending on the previous history known by its "discoverer". Some are probably completely filled. The number of caves known on the island was so extensive in 1919 that the Sandusky Register ran an article about lands for sale on the island entitled "Own your own Cave".

Today, the caves of the Lake Erie Islands, particularly South Bass Island, offer a very pleasant, peaceful family vacation for cavers, with bits of interesting American history still to be learned in this backwater region. South Bass State Park has one of the finest campgrounds in the Ohio State Park System, and there are at least two caves inside the state park!

References

Charles E. Frohman, Put-in-Bay. Ohio State Historical Society, Columbus, 1971.

Ruth Dickerman Noizuk, History of South Bass Island. Published by the author circa 1968.

Thomas H. Langlois, the Caves on South Bass Island, Inland Seas. Great Lakes Historical Society, 1951.

NEWSPAPERS: a fugitive source for spelean history
BY Stewart Seely Sprague
Associate Professor of History
Morehead State University
Morehead, Ky. 40351

The St. Charles Missourian carries an article headed "Stupendous Cavern" and the armchair cave historian's adrenalin courses through his veins. What fabulous Missouri cave be this? The heartbeat drops, however, when one discovers that the cave referred to is located on James Le Ray's land, Watertown, N.Y. This is not an isolated incident. The Delaware (Ohio) Patron, December 29, 1825, carried an account of a "New Cavern Discovered" which turns out to be a cave located a mile from the meeting house, Granby, Connecticut.

To understand why this strange state of affairs existed in the period previous to the War Between the States, one must know something about the newspapers of the day. Early editors faced with filling the columns of their paper in the days before the AP and UPI received "exchanges" from other editors, the government allowing such matter to be mailed free. Consequently, an editor by printing an overrun of 20 copies could obtain copies of 20 other papers (like the grotto newsletters of today except that the government is no longer so generous). These would be clipped and used, sometimes giving the source of the original, oftentimes not. Thus an account of a cavern might appear in a paper hundreds of miles away from the crawling. An additional factor that caused articles to appear where one might least expect it is that they were often of the "a letter from a gentleman in _____ to his friend in this town" variety. That is to say there is no rational way to locate all early newspaper accounts of a specific cave. They have to be discovered by mistake--in the course of looking for something else.

Yet these finds can be important. For instance, the Summer, 1972 issue of this Journal carried George F. Jackson's fine article "The history and exploration of Wyandotte Cave". According to this account McMurtree (1819) was the first to publish the tale of William Henry Harrison and Major Floyd being at Wyandotte, the Benjamin Adams letter of February 27, 1818 not being published until after 1820. But lo and behold! this letter appeared in the Cincinnati Advertiser of July 21, 1818 and the Nashville Clarion of August 4, 1818. This is the probable source. I further suspect that the Worcester (Mass.) Spy, 1815-1819, is the original source for this and other period cave accounts. This surmise is based on the fact that the Nahum Ward account of Mammoth Cave dated April 4, 1816, Marietta, which appears in the August 16, 1816 Cincinnati Western Spy mentions the Worcester Spy as its source as does its account of the Mammoth Cave mummy which appears in its October 25, 1816 issue. The Lebanon (Ohio) Western Star of July 12, 1816 uses the (Marietta, Ohio) American Friend as the source of the April 4, 1816 letter. I leave this lead for one of our yankee brethren to follow up.

Some of the accounts I have run across are, I believe, worth reprinting in full. These are of Mitchell's Cave, N.Y. which was well known in the 19th Century: Cincinnati Western Spy August 25, 1821; Ruffner's Cave, Va., indicating a new date for its discovery: Maysville (Ky.) Eagle June 22, 1825; Bottomless Pit of Mammoth Cave, Ky.: Flemingsburg Kentuckian December 8, 1837; and Carter Caves, Ky.: Ironton (Ohio) Register September 18, 1856. The third is as follows:

"The Bottomless Pit in the Mammoth Cave of Kentucky is suspected by many to run nearly through the whole of the earth. The branch terminates in it (!! - W.R.H.) and the explorer suddenly finds himself brought up on a projecting platform, surrounded on three sides by darkness and terror, a gulf on the left, and before him what seems an interminable void. He looks aloft: but no eye has yet reached the top of the great overreaching dome; nothing is there seen but the flashing of the water dropping from above, smiling as it shoots by, in the unwonted gleam of the lamps. --- He looks below, and nothing there meets his glance, save darkness thick as lamp-black but he hears a wild, mournful melody of waters, a wailing of the brook for the green channel left in the upper world never more to be revisited. Down goes a rock, tumbled over the cliff by the guide who is of the opinion that folks come hither to see and hear, not to muse and be melancholy. There it goes--crash; it has reached the bottom. No--hark, it strikes again; once more and again, still falling. Will it never stop? One's hair begins to bristle as he hears the sound repeated, growing less and less, until the ear can follow it no longer. Certainly if the pit of Frederic (legendary pit in Norway - W.R.H.) shall be eleven thousand feet deep, the Bottomless Pit of the Mammoth Cave must be its equal; for two minutes, at least, we can hear the stone descending." (Editor's Note: it is planned to include the other three items in future issues of JSH as space permits.)

Below follows a listing of other accounts I have found in various newspapers.

1805 Se. 9 (Wilmington, Del.) Mirror of the Times and General Advertiser. Devil's Hole, Durham twp, Bucks Co.

1806 Ag 11 (Baltimore) American and Commercial Daily Advertiser. Herkimer. J1 8 Natural Curiosity near Manilus, from Farmers' Monitor. Also Newburyport (Mass) Herald Ag. 12, 1806, 1s Beckwith's.

1813 Mr 30 (Lexington) Reporter adv. Saltpeter Cave and Works. Wm. Gatewood, Warren Co., 8 miles south of the Mammoth Cave.

1815 Ag 11 (Cincinnati) Western Spy. Weir's Cave with map. Ltr Gen. Calvin Jones to Mr. _____ in N.C. dated Mr. 17, 1815; editor of Raleigh (N.C.) Star.

1816 Mr. 1 (Cincinnati) Western Spy. Corydon (Wyandotte probably) Louisville F 14.

1816 Ag 24 Georgetown (Ky.) Patriot Mammoth Cave, from Nat. Int. Same source as our Great Cave in Kentucky, Woodford Co., J1 1816.

- 1816 N 3 Lebanon (O) Western Star. Larel Hill, Penna. 9 mi SW of Uniontown, George twp.
- 1818 Oc 13 Knoxville Register. Wyandotte.
- 1818 Ag 1 (Cincinnati) Western Spy. St. Lucia B.W.I. Animal Flower Cave from NY Advocate. (Could this be Barbados instead? -W.R.H.)
- 1818 Se 23 (Lexington, Ky.) Reporter. Valuable property including Salt Peter Cave for Sale.
- 1819 Je 26 (Natchez) Mississippi State Gazette. 1 mi from Put in Bay.
- 1819 Ag 17 Cincinnati Advertiser. from NY E.P. Put in Bay.
- 1819 Ag 10 Cincinnati Advertiser. Tenn., 2-3 mi from Columbia, Maury Co. Wm. Donnison Esq. of Nashville to Samuel L. Mitchell, Oct. 25, 1818.
- 1821 Ag 14 Cincinnati Advertiser. St. Lucia B.W.I. Animal Flower.
- 1822 Je 22 (Cincinnati) Western Spy. Watertown, NY; Jas. Le Ray from NY Mer. Adv.
- 1823 Oc 1 (Natchez) Mississippi Rep. Cave of Pirates - Cape Cruz.
- 1825 Fe 24 Delaware (O) Patron. Weir's Cave. Extract ltr from Natchez in NY Statesman. Visited Madison's Cave as well.
1826. Fe 23. Delaware (o) Patron. Epsom Salt Cave nr Corydon.
- 1827 N2 (Shelbyville) Kentucky Advocate. Cave nr Soli, so. Java.
- 1829 Mr 5 Delaware (o) Patron. Few hundred yards up the Caney Fork of Cumberland River; from Nashville Republican. Refers to Ap. 1811 and Drs. John R. Bedford and Chas. Cassidy.
- 1831 Oc 3 Louisville Daily Focus. Mammoth Cave from N.E. Review. First visit De 1826.
- 1831 Oc 18 Maysville (Ky.) Eagle. Wier's Cave, etc, from Baltimore American.
- 1835 American Railroad Journal, from the N.Y. American IV, 281. Weyer's Cave.
- 1835 ibid, IV, 654. Knox Cave from Schoharie Republican.
- 1836 Mr 5 (Lexington) Ky. Gazette. Wilson's gang, Ohio River. Cave-in-Rock? See also Maysville Eagle Ap 20 1836.
- 1837 Fe 14 Milledgeville (Ga.) Southern Recorder from Cassville Pioneer Ja 20. 5-6 miles from Lafayette, Walker Co., Ga.

1837 Ja 26 (Covington) North Kentuckian. Wilson's gang 20 mi. below mouth of Wabash River.

1838 Ap 12 (Covington) Kentucky & Ohio Journal. Judge's Cave, Conn. From Conn. Hist. Recollections.

1838 S 28 (Flemingsburg) Kentuckian. Mammoth Cave. To the ed. s. Frankfort (Ky.) Commonwealth S 3 1838.

1853 Je. 29 (Covington) Kentucky Garland. New Cave in Union Co. From Lewisburg (Pa.) Chronicle. Hill lands of Youngman & Walter in Dry Valley 4 mi below Lewisburg. Quarry of John C. Hess, 200 yards S of Gibson Hotel.

1856 Ag 5 Newport & Covington (Ky.) Daily News. Mammoth Cave. "E. Merriam is furnishing the Portsmouth (O.) Journal with a series of interesting articles about Mammoth". Copies of the latter are not known but it might be reprinted.

1875. Ap 30 Charlotte (Mich.) Leader. Manitou, from Colorado Springs Gazette.

1885 Ap 3 Charlotte (Mich.) Republican. Mammoth Cave. "The cave is nine miles from the station and the only approach to it is by wagon road through red clay mud eighteen inches deep."--Luren D. Dickinson.

1886 Mr 24 Hazel Green (Ky.) Herald from Galveston (Tex.) News. Kinney Co., Texas, 30 mi nw of Brackett. Cave features include spring arbor, cathedral, big side chamber.

* * * *

WHAT CAVE IS THIS?

A KENTUCKY WONDER -- J. Allen, of Bloomfield, while excavating the foundation of a new mill, struck the dome of a cavern of immense proportions, from which a strong current of cold air issued with great force as the workmen made the opening. Torches were produced, and Mr. Allen and Mr. Gain Hurst were lowered by means of a winlass. It was about 60 feet from the surface to the entrance of the cave, which they found to be level and sandy, as if it was once the bed of an ancient subterranean stream. They followed the main avenue a distance of over 2 miles, and discovered an opening in a cliff on the farm of Mr. Benjamin Wilson, and a well-beaten path was easily discerned that was once trod by human beings, although it is now in many places covered with forest trees and undergrowth. Mr. Allen and Mr. Hurst, after emerging from the cave, hastened back to the town and reported the result of their discoveries, A large party was at once formed, which entered the opening on the cliff on the Wilson farm. On one of the main avenues numerous evidences existed that the place had been the abode of the cave men, as numerous relics were found in the shape of pottery and bronze articles; a sepulcher was also discovered in a large niche or avenue, and in it are numerous mummified bodies. Three of them have been removed to the town and excite great curiosity. The formations in the cave are beautiful beyond all description. Stately towers of stalagmites, suggestive of grotesque and unique figures are encountered all along the wonderful subter-

anean avenues. There is a beautiful little lake with water as clear as crystal, and, as is usual in cave streams, it is full of tiny eyeless fish. The avenues in the cave will measure in all probability about seven miles, so that it may be fairly considered another rival to the Mammoth, and certainly one of the many great cave wonders of Kentucky, the country of caves. The cave is about thirty-seven miles southwest of Louisville and seventy miles from the Mammoth Cave."

--from "Woman", April 1888. Courtesy of Capt. Charles Pease.

* * * *

COLLOQUY

The Jenolan Caves Historical and Preservation Society has issued an attractive brochure entitled: "You are invited to join the JENOLAN CAVES HISTORICAL AND PRESERVATION SOCIETY". A cover illustration shows "the second Accommodation House at Jenolan Caves, 1887." As it points out, this is the first historical society in Australia concerned specifically with limestone caves. It is fitting that this should be at Jenolan, the country's most widely renowned and popular caves." The organization's first project is the re-erection of the Jenolan Caves Post Office to serve as a museum. It holds quarterly meetings at Jenolan, and is affiliated with the Royal Australian Historical Society; also strong links with the New South Wales Department of Tourism. The nicely illustrated brochure offers individual membership at \$5 Aus.; \$7 family, \$2 student or child with years beginning each July 1. Address: Jenolan Caves, N.S.W., Australia 2786. The fourth page of the brochure gives a succinct history of the discovery of the caves.

* * *

Genealogical Publishing Company, 521 St. Paul Place, Baltimore, has just issued List No. A-8, which is a list of all its current titles. Free.

* * *

Elder's Book Store, 2115 Elliston Place, Nashville, Tenn. 37203 is engaged in reprinting Tennesseeiana, some of which is of spelean interest. For example: Haywood, John. 1823. The natural and aboriginal history of Tennessee; Breazeale, J.W.M. Life as it is. 1842 (one chapter on caves, one chapter on the Harps.)

* * *

Lake Shasta Caverns has a very pretty booklet in color at a reasonable price (\$1.00 earlier this year). Unfortunately it has a number of major inaccuracies such as confusing Potter Creek Cave with Lake Shasta Cavern (Baird Cave), and the guides give additional historical information not included in the booklet. In May, 1973, yr editor queried the company about the possibility of a revised edition; the general manager asked what yr editor had in mind; yr editor responded, giving some details and suggestions but in the following 6 months, there was no response. For those who want a copy, address is: Box 601, O'Brien, Calif. 96060. They also have some 20 postcards for sale.

* * *

Chuck Pease forwarded a confusing item from the July 31, 1936 Great Falls (Mont.) Tribune, which discusses creation of "Madison Caves state park", now Lewis and Clark Cavern State Park. This previously was Morrison Cave; it's in the Madison limestone above the Madison River. How come the name Madison Cave???? And how long?

Bleeah!!! Pete Hauer forwarded a reply from Senator Thomas Eagleton to ASHA's opposition to the Meramec Dam. A standard brushoff. So much for THAT great historian-conservationist.

Incidentally, yr editor has been struggling with the tapes of the International Vulcanospeleological Symposium which he chaired, and therefore has considerable sympathy with the White House at the moment. I don't think we're going to be able to get anything useful from the ones I have.

* * *

The Scots Magazine for June 1973 has a nice article on Prince Charlie's Cave in Glenmoriston, and also mention of Wallace's Cave near Lanark, both highly significant in Scottish history. These courtesy of my aunt, Isabell Halliday.

* * *

On an unidentified Idaho cave, a further clue has turned up. The old name for Grangeville turns out to be "Mt. Idaho", so "What Cave is This?" is probably Lucille Cave.

* * *

The NSS Library is now located at NSS headquarters in Huntsville, Ala. The Meadvilles, however, still have the cave files, and Candy Reinstattler, the archives.

* * *

Wanted: a review of Dave Judson's "Ghar Parau". Said to have some good historical stuff before getting into the Iranian expedition per se.

* * *

Carl Kunath (3507 Lindenwood Drive, San Angelo, Texas, 76901) needs copies of Speleologist #1,2,3.

* * *

The University Library, University of California, Irvine, Calif. 92664, is looking for a copy of Caves of California. Att: Monica Beck, Science Bibliographer. Yr editor knows of two copies going through the hands of Speleobooks in recent months, but Doug Rhodes is unwilling to say anything about the sales. Quotes should be sent to the attention of the O.P. Section, Acquisitions Department, The University Library.

* * *

Gerry Forney adds that the Bermudian stalagmite pictured in this issue was destroyed at the time of demolition of the hall which contained it in the mid-sixties.

* * *

Is this the earliest published reference to Colossal Cave, Arizona?: "Near the little station of Vails (sic)", the Colonel remarked, "is a curious cave of great dimensions filled with guano. It has been the home of myriads of bats since time immemorial, and a great deposit of fertilizer has accumulated. The cave was opened some three or four years ago and a company organized to make shipments. For some reason the venture was not prosecuted, and after about 75 car loads had been forwarded to Los Angeles and San Francisco operations were suspended." (from p. 144 of H.S. Kneeder's "Through Storyland to Sunset Seas", Chicago, Knight, Leonard & Co., 1895, 205 pp.) If so, when and from whence came the magnificent Wells Fargo robbers story?

Jack Speece and Speece Publications have a new address: 711 N. Atlantic Ave., Altoona, Penna. 16602. His latest publication list shows about half the items already out of print.

* * * *

Yr editor was delighted to receive (yesterday) a proof copy of the dust jacket design for **AMERICAN CAVES AND CAVING**, especially because Harper and Row chose to include a photo showing two ASHA members - John Bridge and Fred Dickey.

As for the availability of the book, it is falling farther and farther behind. Latest guess out of NY is March, but I'll believe it when I see it. Which will give yr editor time for lots more fun, stirring up reader interest as in Inside Earth and at the 25th Anniversary Banquet of the Southern California Grotto.

* * * *

Fred Dickey, incidentally, suggests taking the Nahum Ward biography in the last issue with a grain of salt, since so many of this type were deliberately slanted to increase sales of the books. Which is quite true, but the account seems to indicate that Ward's family had died out before the account was written. More anon.

* * * * *

The June, 1973 **Northeastern Caver** contains some nice historical accounts of Ball's and Howe caverns, N.Y.

* * * *

Chuck Pease has submitted a curious item entitled **The Eyeless Fish of Mammoth Cave**, from "The Chimney Corner", Feb. 10, 1866. It refers to ridicule heaped upon "a French traveller who visited the cave" "for introducing so absurd an account as that of fish without eyes." Anyone have any information on the identity of the French traveller?

* * * *

The December 1973 "Explorers Journal" includes an ad by Crown Publishers for AHSA members Russ and Jeanne Gurnee's new book, "Discovery at the Rio Camuy." Let's hope the book soon follows!

* * * * *

ASHA member Tom Meador writes that he recently "found" "Livingston's Cavern" (JSH v. 6 #1, p. 23); the speleothems aren't as big as Livingston claimed but check out with published photos.

Tom also has a very nice article on an incident of the Indian wars at Las Moras Cave, Menard County, Texas, in the December 1973 **Texas Caver**.

* * * *

At last report, John Bridge thought he had been successful in lining up a new editor for this 'ere journal, to which this 'ere editor deposes and sayeth! Halleluliah!, or words to that effect. In any event, Best Season's Greetings, and have a magnificent New Year!