

THE LAST ROSE OF SUMMER.
(Never before photographed).

MAMMOTH CAVE.....

BY FLASH-LIGHT



BY FRANCES BENJAMIN JOHNSTON.

WITH TWENTY-FIVE ILLUSTRATIONS FROM

MISS JOHNSTON'S OWN PHOTOGRAPHS.



WASHINGTON, D. C. :
GIBSON BROS., PRINTERS AND BOOKBINDERS.
1893.

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AUTHOR'S NOTE.

The Mammoth Cave of Kentucky—since its discovery early in this century—has ranked foremost among the natural wonders of the world. There is no other known cavern which approaches it, either in extent or magnitude; and for nearly a hundred years this marvel of natural architecture has been a source of unflinching popular interest, drawing thousands annually to its rocky portals.

Numberless books, pamphlets, essays, poems, and descriptive articles have been written about Mammoth Cave, but, owing to the eternal night of its depths, there was never any wholly successful effort to picture this subterranean world until the perfection of photography by artificial light made possible an absolutely correct reproduction of its curious and beautiful formations.

It would be difficult to find a more interesting field for the practice of flash-light photography than that offered by the Cave; a fact so well appreciated by the management of DEMOREST'S FAMILY MAGAZINE that the work of obtaining an extensive series of Cave photographs was first undertaken upon a commission from that publication. When these photographs appeared therein, they constituted the most successful and elaborate effort ever made to illustrate the Mammoth Cave. As many views have been added to those already published, they are now issued in book form, with a brief sketch of the history of the Cave, and its chief points of interest. The accompanying illustrations of the Cave interior—made by the use of magnesium light—have been reproduced from the original photographs without any "retouching" or "working-up," and, representing many points never before attempted, they have been pronounced by experts among the finest series of underground pictures yet produced. A number of the series are republished through the courtesy of DEMOREST'S MAGAZINE.

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MAMMOTH CAVE HOTEL.
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Mammoth Cave

By Flash-light.

The Mammoth Cave is located in Edmonson County, Kentucky, and lies about 90 miles south of Louisville, just half way between that city and Nashville. It is now easily and pleasantly accessible by the main line of the LOUISVILLE & NASHVILLE R.R., running through Glasgow Junction, from which point a narrow-gauge road makes direct connection with the Cave Hotel. There are two trains daily, both from the North and South—the trip from Louisville requiring about four hours, while from Nashville the time is an hour or so longer, as the train connections are not so close.

The LOUISVILLE & NASHVILLE R.R. permits all passengers holding first-class tickets to stop over at the Cave Junction, on notice to the conductor, and the excursion can be made comfortably, with a delay of only from 12 to 24 hours, while special excursion rates are offered to parties of ten or more traveling together from any point over the L. & N. road.

The Mammoth Cave estate is a charmingly wild and picturesque stretch of country, about 2,000 acres in extent, and the only settlement upon it is the CAVE HOTEL, a comfortable, old-fashioned hostelry, resembling an old-time Southern manor-house, which is not only frequented by throngs of tourists, but is popular as a summer resort. The scenery of this region is ruggedly beautiful, the steep ravines are clothed in rich verdure, and the picturesque Green River winds in and out between its rocky cliffs about a thousand yards below the Hotel. The air here is deliciously pure and bracing, there is abundant game in the neigh-

boring woods, while the river affords excellent fishing; all which, added to the supreme attraction of the Cave, render the place unusually inviting for a holiday trip.

The hotel accommodations are unpretentious, but extremely comfortable and reasonable in price; with special rates, both in Hotel and Cave fees, to parties of ten or more.

The history of the Mammoth Cave, since its discovery, is necessarily romantic and full of tradition, while from a scientific point of view it stands as an inexhaustible object-lesson of Nature's mighty forces. The popular and generally accepted story of its discovery relates that a hunter—trailing a wounded bear—first entered it in 1809. However this may be, the fact is well established that the nitrous earth in the avenues near the entrance was worked during the war of 1812-14 to obtain saltpeter for the manufacture of gunpowder. The rude leaching-vats, the great heaps of lixiviated earth, the clumsy lines of log-pipe have remained undisturbed since that time, while the hoof-prints of oxen and the wheel-ruts of the miners' carts are still easily distinguishable in the Cave floor.

The Cave property originally consisted of about 200 acres, and the first transfer was made, according to early records, in consideration of "forty dollars and a mule." The estate changed hands half a dozen times during the next forty years, and the names of former owners are preserved in several avenues.

and in such points as "Gatewood's Dining-table," "Gorin's Dome," and "Croghan Hall." In 1845 the Cave estate was purchased by Dr. John Croghan, of Louisville, and is, at present, held by his heirs.

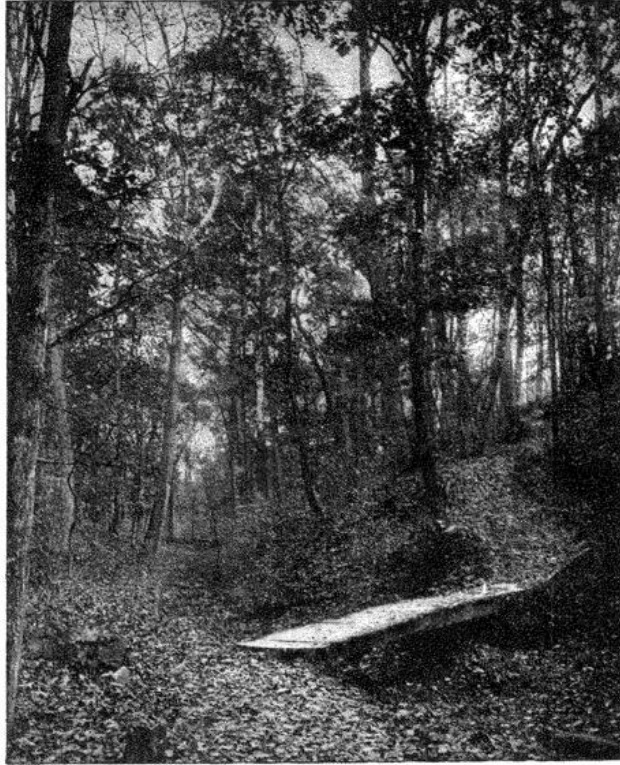
The geological formation of Mammoth Cave is attributed by scientists to the chemical action of water charged with carbonic acid gas upon the extensive deposits of limestone peculiar to this section of the country. Prof. N. S. Shaler estimates that the limestones of the sub-carboniferous group of rocks in the caverned district about the head waters of the Green River attain a depth of several hundred feet, and cover an area of at least ten thousand square miles, with an aggregate length of underground galleries extending one hundred thousand miles. In Edmonson County alone there are some five hundred caverns, while on every side the surface of the country bears evidence of the tunnelled regions underground. "Sink-holes" and yawning-pits are frequently found, while brooks and small streams of water have totally disappeared. The country, at the period of the Cave formation, was covered with dense vegetation; rain falling upon decaying leaves and plants became impregnated with carbonic acid gas, and this acidified water, trickling through the limestone crevices, hollowed out, during unnumbered centuries, the vast caverns of this subterranean world.

It is unfortunate that no exact and recent estimate is obtainable of the dimensions of the Mammoth Cave; the figures given being those of Owen's *Geological Survey of Kentucky*, published in 1854. According to this authority, the extent of the great Cave is estimated at hundreds of acres, through which wind 223 avenues, with an aggregate length of 200 miles, and diversified by 47 domes, one of which is supposed to be 300 feet high; 23 pits, one 175 feet deep; 8 waterfalls, and several bodies of water, of which 3 are termed rivers, 2 are nominally lakes, and one a sea. The avenues average 21 feet in height and width, although in many places the larger galleries widen out to immense proportions, and it is assumed that 12,000,000 cubic yards of limestone have been displaced in their formation. The Cave has five levels, or stories, with an aggregate height of 328 feet, the upper tiers being remarkably dry, while the lowest depth is that of the drainage, or river level. The river halls, as they are called, contain several bodies of water—the Dead Sea, River Styx, Lake

Lethe, and Echo River—independent of each other in the dry season, but united in a single stream when rains and freshets bring high water. These rivers were not discovered for more than thirty years after the Cave was first entered, and for a long time the problem of their outlet was a mystery, the supposition being that they disappeared into the depths of the earth. At length it was observed that the current set in and the Cave rivers rose when Green River was high, and, when the waters of the latter stream fell, the Cave rivers also subsided. The connection of Echo River with Green River was finally established when it was found that chaff, thrown on the subterranean stream, issued from beneath a rocky, vine-decked cliff into a gloomy pool, and flowed thence into a small stream emptying into Green River. This discovery emphasizes some peculiar facts concerning Green River, which is said to receive its supply entirely from underground streams, and, being extremely cold in temperature, never freezes, even through the severest weather.

Aside from its vast proportions, there are many unique points of interest about Mammoth Cave. Its avenues are filled with odd and picturesque shapes, hewn out of the living rock by the velvet, but irresistible, force of the waters. Many of its galleries are beautified by elaborate stalactite formations, and others are incrustated with the most delicate mineral traceries, seemingly studded with myriad diamonds or covered with crystalline flowers—the fairy-like florescence of gypsum or sulphate of lime. Not the least curious of its features is the animal and plant life of the Cave. Patient investigation has discovered an astonishing number of distinct species of both fauna and flora, but of the former those most interesting to the casual visitor are the eyeless fish and crawfish found in the Cave streams, and the grotesque, long-legged crickets that dwell in the crevices of the walls. Like everything else which grows in the Cave, the fish are colorless, translucent, and, as a rule, not only sightless, but showing no trace of sight organs. The Cave flora consists of five or six species of fungus, always spotless white, and frequently very beautiful in form. They flourish best in the damp regions, and are usually found hanging in masses of filmy silver fringe from the bridges and wooden supports in the river halls.

In this connection it is curious to note that mushroom farming was once carried on in the Cave with considerable success. Still another phenomenon of



PATHWAY TO THE CAVE.

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this strange country is the absolute fixedness of the temperature, which, in all seasons, seldom varies a degree above or below 54°. As a result, there is perceptible a constant and very strong draft of air at the entrance gate, and the Cave is said to "breathe outward" during the six months of the year when the outer temperature is above 54°, and to "inhale" the other six months when the mercury drops zerowards. Neither summer nor winter, night nor day is known in this weird lower world. Time seems to stand still, and an eternal silence broods over its depths.

After years of exploration by guides, scientists, and thousands of tourists, the actual extent of the Cave is still a matter of conjecture, and it would require days of continual tramping to traverse even the known avenues. With the average visitor, two well-beaten tracks are followed, known as the "Long Route" and the "Short Route," and these have been so arranged as to include every point of interest within reasonable walking distance. For those who wish to make further explorations, there are various side excursions: notably to the Mammoth Dome and Egyptian Temple, to Chief City, and through other avenues no less wonderful, but more difficult of access.

The "Short Route," embracing the avenues nearest the mouth of the Cave, is estimated to cover a distance of 7 miles—requiring about four hours for the trip. The fee, including the services of a guide, is \$2.00, and ordinarily parties are sent over this route two and three times a day.

The "Long Route," extending across the river and through more distant avenues, is estimated at 18 miles in length, and requires from eight to ten hours for the journey. Parties for the Long Route usually make the start early in the morning, dinner being sent in to them, and the return to the Hotel is made in time for supper. The fee for this excursion is \$3.00. These routes are quite distinct, and unless the visitor makes both expeditions, it is hardly possible to appreciate the extent and marvelous diversity of the great cavern. As to the fatigue and exertion involved, it is safe to say that it is easier for the average tourist to travel 18 miles in these underground passages than it would be to walk a half of that distance over an ordinary country road, and the reasons are very apparent.

The temperature is uniform, the air is highly oxygenated and of extraordi-

nary purity, producing a sense of lightness and exhilaration which tends greatly to ward off fatigue, while there are frequent stops for explanations by the guides, who, also, at certain points produce elaborate illuminations by Bengal lights. Tourists who enter the Cave are strongly advised to don old and comfortable clothes and easy footwear, while ladies are urged to wear the sensible and convenient suits provided in the hotel, which will relieve them from dragging skirts, and add ten-fold to the pleasure of their exploration. As a matter of course, no person is allowed to enter the Cave without an experienced guide. Most of these guides, in addition to years of training and experience, have made many daring explorations and discoveries, and have grown famous in their vocation. One of the best known of the earlier guides was Stephen Bishop, the stories of whose exploits are Cave traditions; and among his capable successors are William Garvin, who has been "guiding" for thirty years; Eddie Bishop—Stephen's nephew—"Josh," "Willie," Henry, and several others. Explorations of the Cave, under their guidance, are absolutely safe, but their instructions should be followed with the utmost care, as there are manifold dangers to confront the foolhardy and adventurous. It may be well to suggest that, in case of separation from the main party, the safe thing for a person to do is to remain in one spot until he is missed and a search instituted, for to wander even a few yards from the right road may be fatal. Each guide knows the exact number he has brought into the Cave, and as he counts his party frequently, the rescue of a stray tourist is seldom more than a matter of a few minutes.

The Mammoth Cave is so bewildering in its gloom and immensity that it is difficult to form at once an adequate idea of its magnificent proportions or of its beautiful and curious formations. The seemingly endless avenues, the great domes and pits, the stalactite draperies, the delicate gypsum florescence, with the flickering lights, which only intensify the perpetual darkness, make the initial visit seem rather like the passing of some strange illusion than an actual experience. In order to define more clearly these first confused impressions, a systematic list of the points of interest along each route is given in place of the usual attempt to picture in words what each person must experience in order to fully appreciate.

The Short Route.

A start for either route is made by the gathering of the party at the end of the long Hotel veranda, where the guides are in attendance, fully equipped with lamps and oil, Bengal lights, etc. When all are in readiness, a gong gives the signal, and the party crosses an old-fashioned garden to the

PATHWAY TO THE

CAVE, which winds through a steep and picturesque ravine, and about three hundred yards below the Hotel leads directly to

THE MOUTH OF THE

CAVE. This magnificent arch of solid rock, 50 feet high and 70 feet wide, is rendered wild and romantic by its drapery of ferns and vines, and the tiny fall of crystal water that trickles from the keystone and disappears in the leaf-strewn floor of the Cave entrance. The descent is made by a rude flight of stone steps, and the fine sweep of the rocky ceiling gradually contracts until further progress is barred by

THE IRON GATE,

a narrow portal, heavily bolted and locked to keep out trespassers or too venturesome explorers. The guide stops to unlock the gate, and a violent current of air is felt rushing in or out (according to the season).

LOOKING BACKWARD,

one turns instinctively for a final glimpse of the golden light, which, veiled by spreading branches, filters in through the grim arch. Once inside the prison-like gate, the lamps are lighted, and the guide leads the way through

THE NARROWS.

Here the passage is nearly blocked by piles of loose stone, stacked along the walls by the saltpeter miners to

clear the other avenues for their work. The pump logs are still seen, and a few steps bring one to

THE FIRST SALT-

PETER VATS.

These are rudely constructed, but still in a perfect state of preservation, showing clearly the early method of leaching the nitrous earth. An old jump-frame stands at one side, where superfluous coats and wraps are left until the return of the party. After advancing a few paces, the guide sets a Bengal light in a side crevice, and as it flames up, the walls and ceiling seem to recede into thin air, leaving the party an insignificant group in the center of a vast apartment. This is

THE ROTUNDA,

where the main Cave widens out into a great semi-circular room, arched by a high and massive ceiling of solid rock. At the right of the Rotunda, Audubon's avenue branches off, and this, in turn, opens into Little Bat avenue, both of which galleries are inhabited by thousands of bats during their hibernation. The regular route—ignoring these side passages—follows the Main Cave, which, for some distance, is designated as

BROADWAY,

on account of its ample proportions. As the party progresses, a rocky shelf on the left is pointed out, and above is discovered a narrow fissure, which forms

THE ENTRANCE TO

CORKSCREW,

a tortuous and difficult passage, leading by a sheer descent directly into the river halls. Still further to the left a curious illustration of the action of water is given in

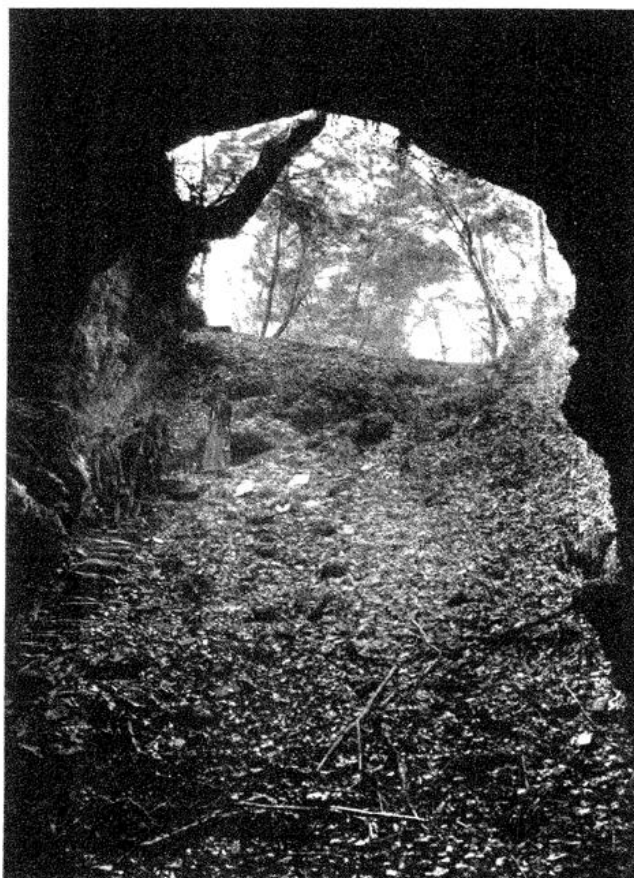
THE PIGEON HOLES,

small apertures hollowed out of the rock as neatly as if by



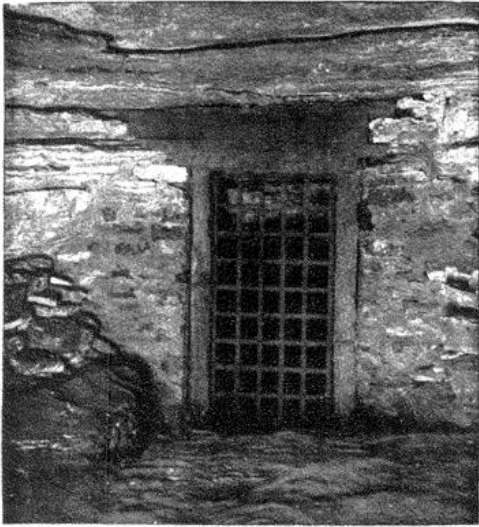
ENTRANCE TO THE CAVE.
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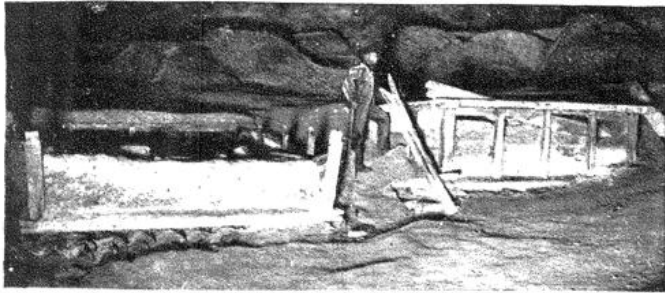


LOOKING BACKWARD
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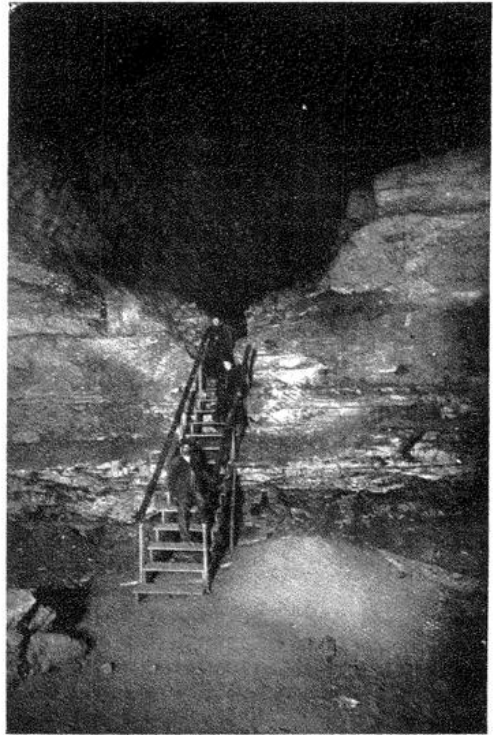
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THE IRON-BARRED GATE.



SALTPETER VATS OF 1812.



ENTRANCE TO GOTHIC AVENUE.

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a chisel in the hands of a mason. Beyond these, and still to the left, the gloomy walls, rising steep and rugged, have been named

THE KENTUCKY

CLIFFS, from a fancied resemblance to bluffs along the Kentucky River. The Cave now seems to widen out, and, as one grows accustomed to the gloom, a series of rough stone piers are seen, supporting a double line of the old log

WATER-PIPES,

still in an excellent state of preservation. At this point, the flaring light from a blazing rag, held by the guide on the end of his stick, reveals a second large chamber.

THE METHODIST

CHURCH. Here, facing a fine amphitheater, is a rude pulpit, hewn by living water out of the solid rock, from which many a sermon has been preached; the usage, it is said, having originated with the miners eighty years ago. Just beyond this natural sanctuary are

THE GOTHIC GAL-

LERIES, where the main Cave again widens out, and is crossed at right angles by another avenue on a higher level.

THE SECOND SALT-

PETER VATS are now reached in the middle of a large apartment, which, with its irregular formation, resembling a pit and gallery, is known as

THE THEATER,

and from its sombre stage, tradition says that Edwin Booth once delivered some of his most famous lines. At the right, a wooden stairway leads to the level of the upper avenue, which forms

THE ENTRANCE TO

GOthic AVENUE. Here the Main Cave is left for the time being, for the exploration of one of the most remarkable passages of this sub-

terranean country, where the finest stalactite formations of the Cave are found. A niche very near the head of the staircase is pointed out as

THE SEAT OF THE

MUMMY,

where the bodies of a prehistoric woman and child are said to have been found. A writer who visited the Cave in 1813 is quoted as describing in the minutest detail the woman's body, and the clothing, trinkets, etc., found with it. There is also the story of the remains of a giant having been dug up by the miners, but accounts are conflicting concerning these relics, though it is given as a well-authenticated fact that many remains of a former race—such as sandals, cane torches, and bits of rush matting have been found in the Cave. Near this point is seen the first of the stalactite formations,

THE POST OAK

PILLAR,

beyond which Gothic avenue broadens into a low room, whose ceiling is hung with pointed clusters of this curious lime-water growth. As the avenue widens the ceiling suddenly becomes as smooth as if it had been plastered. The name of

REGISTER HALL

has been bestowed upon this room, as in the days when candles were used for illumination, many visitors—who were vandals at the same time—left their autographs in smoke on the creamy and perfectly-grained surface overhead. Register Hall is filled with cairns—great piles of stone and rock—numbering several hundred, which are also found in all well-traveled avenues of the Cave, and frequently reach to the ceiling. They have been erected by tourists, as memorials to famous men and women, cities, States, countries, societies, and colleges, serving also the very useful purpose of keeping the passages free from loose stones. Passing

THE CATACOMBS,

which are curious water-molded niches in the wall, startlingly like the sepulchers from which they derive their names,

THE GOTHIC WALLS

are reached. Beyond these the floor of the Cave appears to have been flooded by some volcanic eruption which has given the name of

THE LAVA BEDS

to this peculiar formation. A short distance further on, the way is apparently barred by a giant stalactite reaching from floor to ceiling, and appropriately named

THE PILLARS OF

HERCULES.

A nearer approach discloses a narrow defile, through which entrance is made into one of the most famous points in the Cave.

THE BRIDAL

CHAMBER.

Upheld at one end by the pillars of Hercules, the roof is supported on either side by two fine stalactite columns,

POMPEY AND CÆSAR.

and at the further end stands

THE BRIDAL ALTAR,

a union of several irregular but graceful stalactites lavishly decorated with natural scroll-work. The same formation incrusts the ceiling like a mass of ornate carving, and with the glow of a Bengal light tinging with rose tones each column and frieze, the effect is indescribable. It is said that before this natural altar nine couples have been married; and Cave tradition tells the story of the pioneer subterranean bride, who, having pledged her mother that she would "never marry any man on the face of the earth," here fulfilled the letter if not the spirit of her vow, by an underground wedding. Beyond the Bridal Chamber the guide points out a head of George Washington, outlined by Nature's pencil upon the ceiling, and at one side a knotty growth,

THE HORNET'S NEST,

which looks dangerously life-like. The floor all about here is seemingly a mass of cinders, which gives this region the name of

VULCAN'S FORGE,

or, the Blacksmith's Shop. A little beyond, the soft drip of falling water is heard, and a dextrous turn of the guide's lamp shows that the immeasurably slow process of stalactite building is still going on. The water, trickling drop by drop from a suspended point on the ceiling and falling upon the floor, has formed

THE MAN'S HEAD,

which is indeed an almost perfect representation of a human skull, and a source to the guides of many a joke. The invariable query is, "And why is it a man's head?" and the reply is also invariably, "Because its mouth is shut." Beyond this the floor opens into a deep crevice, in front of which runs a smooth embankment known as

NAPOLEON'S BREAST-

WORKS,

and a little further on is a magnificent column, showing perfectly the line of jointure between the overhanging stalactite and the stalagmite beneath. This is called

THE ARM-CHAIR

from its peculiar shape, and many distinguished people are said to have sat in it. Just at the side of the Arm-Chair is a clear spring of water, held in a neat little basin, and fed drop by drop from a crevice in the ceiling. Stalactitic formations are marked characteristics of Gothic avenue, and near the end, the Cave is hung with the remains of a beautiful stalactite fringe,

THE DROP CURTAIN,

which, unfortunately, has been irreparably ruined by early vandalism. It may once have served to entirely close this avenue, but has been ruthlessly broken and destroyed so



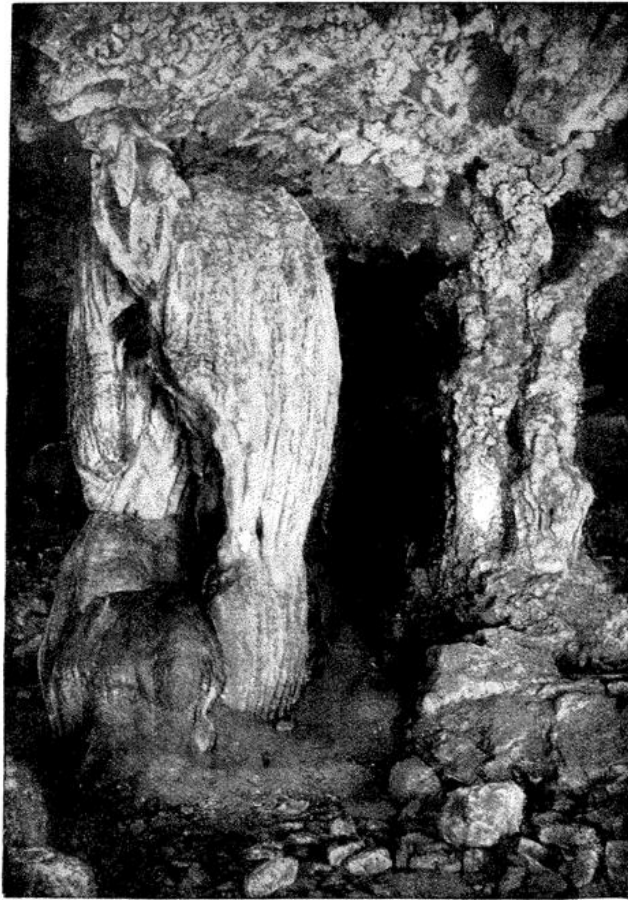
KENTUCKY'S CAIRN.
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THE BRIDAL CHAMBER.

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THE ARM-CHAIR.

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- that only a part of it now remains. Just beyond it is another curious mass of alabaster,
- THE ELEPHANT HEADS.** which, though minus the trunks, are natural enough to warrant their name. Through the low passage at one side the avenue seems to break off abruptly, and here a point of rock.
- LOVERS' LEAP.** juts out sharply over a black gulf. The guide leads his party cautiously down the deep descent and through
- ELBOW CREVICE.** a high but extremely narrow passage which opens into a lower level of the Cave. The way here is almost blocked by
- GATEWOOD'S DINING-TABLE.** a huge circular mass of stone which seems to have dropped bodily from
- NAPOLEON'S DOME.** curving in fine and graceful lines above it. To the right a small gallery leads to
- THE COOLING TUB,** a beautiful basin of water about six feet wide and three feet deep. Beyond it is
- JOSEPH'S PIT.** in old times called the Flint Pit. The main gallery from Gatewood's Dining-Table leads to
- LAKE PURITY.** and ends in one of the prettiest of the smaller domes,
- ANNETTA'S DOME,** whose sides are hung with stalactite draperies, which sparkle and glisten with the waters of a small cascade. Annetta's Dome forming the termination of these galleries, it is necessary to return over the path through Gothic avenue, and again enter
- THE MAIN CAVE.** Descending once more the wooden steps, a well-beaten track lies through great heaps of
- LIXIVIATED EARTH,** the refuse from the leaching-vats of the saltpeter miners. Near here the guides point out the "Fat Girl," silhouetted in black upon the ceiling, and the "Hen and Chickens" on the wall. Beyond the earth-heaps is a broad sweep of the Cave, where the floor is quite level, and which was known in former times as
- THE BALL ROOM.** From this the entrance is into a fine passageway several hundred feet long, 60 feet wide, and 50 feet high, called
- THE GRAND ARCH,** half way down which is found
- THE STANDING ROCKS,** a group of ponderous stones weighing many tons and standing on edge in the Cave floor. Further on at the left, a beautifully fluted niche has been carved in the wall by the clear water which trickles into a nicely rounded basin beneath, and bears the romantic name of
- WANDERING WIL-LIE'S SPRING.** The path now grows somewhat rougher, and leads to a deep crevice behind a group of boulders, where a pause is made in order to listen almost breathlessly for
- THE WATER CLOCKS.** In the oppressive silence, there sounds distinctly the slow measured "tick, tock," "tick, tock" of the one, and the rapid "tick, tick," "tick, tick," "tick, tick" of the other. It seems almost impossible to believe that instead of some ingenious mechanism hidden away, the sound actually comes from the rhythmic dripping of a tiny stream into a pool below. Near the end of the Grand Arch on the right,

THE GIANT'S COFFIN

looms up, an enormous mass of stone, horribly realistic in its immensity, being 40 feet long, 20 wide, and 10 high. Above it is

THE ANT-EATER,

in bold outlines of black upon the ceiling, one of the most interesting objects in the Cave "menagerie." All through this part of the Cave these incrustations of a blackened gypsum take peculiar shape, and but little imagination is required to trace silhouettes of all sorts of birds and beasts. Around the foot of Giant's Coffin a steep and narrow passage leads into a still lower level, known as

THE DESERTED

CHAMBERS,

which form the entrance into one of the most wonderful sections of the Cave—the region of pits and domes. The first chamber is called

THE WOODEN BOWL

ROOM,

from the fact that such a relic is said to have been found here; and from it opens Ganter Avenue, a narrow and tortuous passage, and connecting with the more remote parts of the Cave—lately made accessible by the untiring efforts of the present manager, Mr. H. C. Ganter. Ganter Avenue renders the Long Route absolutely safe when the lower passages are cut off by the rising waters of the subterranean river.

THE STEEPS OF

TIME

form another passage from the Wooden Bowl Room, and lead down into a low-roofed chamber, where the party may find refreshment at

RICHARDSON'S

SPRING,

a clear pool of cold water lying almost invisible in the clay floor. Through

THE ARCHED WAY,

and past a ledge of rock which forms a very retired nook, named

THE LOVER'S

RETREAT,

SIDE-SADDLE PIT,

is found the first of the many domes and pits—

so called on account of its curious shape. It lies almost directly under

MINERVA'S DOME,

which hangs like a huge bell overhead. The path now leads in and out, up and down, with many bewildering twists and turns through the mazes of

THE LABYRINTH,

which apparently ends at a small round opening in a solid wall of rock. Here the guide leaves his party gazing into a region of black nothingness, while he disappears into a crevice at the side. Suddenly a great cavity springs into light in front of the watchers, who find themselves peering through a natural window into

GORIN'S DOME,

which the guide, concealed behind a rocky screen, has illuminated with Bengal lights. This splendid chasm is said to measure over 200 feet from pit to roof, and to cover an acre in extent. Shimmering with the water which trickles into a deep pool below, the walls are covered with folds of stalactite drapery, so ornate and filmy in design, that in the brilliant but wavering light they seem to actually stir and tremble in the damp current, breathed up from the depths. Retracing once more a tortuous way through the Labyrinth,

THE BRIDGE OF

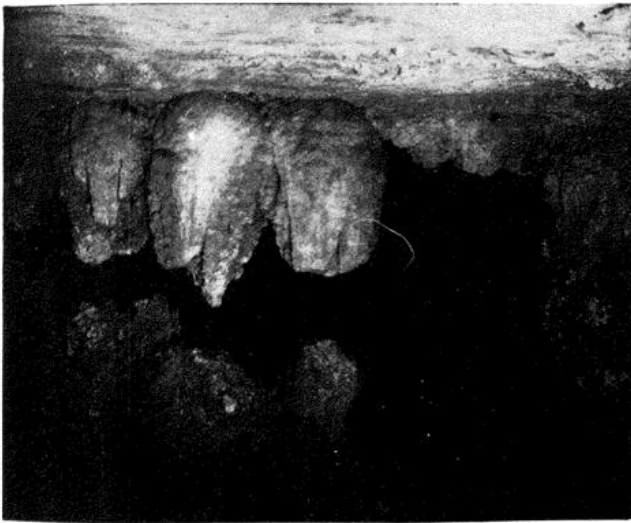
SIGNS

is reached. This is a stout wooden structure suspended over the forbidding depths of

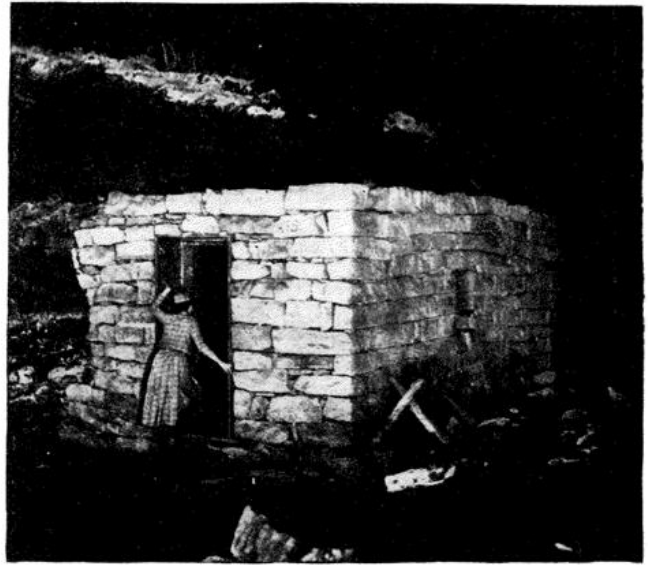
THE BOTTOMLESS

PIT,

whose name is something of an anomaly, as it is in reality only about 100 feet deep. To insure safety the bridge is renewed every four years. Overhead, but a little to one side, hangs



ELEPHANT HEADS.



ONE OF THE LIMESTONE HUTS.

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THE BOTTOMLESS PIT AND BRIDGE OF SIGNS.

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SHELBY'S DOME, whose ponderous sides seem in imminent danger of falling. At the other side of the Bottomless Pit is entered

REVELLERS' HALL, a former dining-room of the Cave, whence several passages branch off in various directions. The first gallery on the right is

PENSICO AVENUE, which is nearly blocked by a huge boulder, designated by a lively imagination

THE SEA TURTLE. Beyond this is reached a spot where the voice of the guide sounds hollow and resonant. This is

ECHO CHAMBER, whose floor being directly over a lower gallery forms a natural sounding-board. Further along Pensico avenue is

WILD HALL, where masses of broken rock litter the floor and crop from the walls in indescribable confusion. Wild Hall might well be termed the Torture Chamber, for arches, walls, and ceiling all seem on the verge of falling to crush the rash intruder: a groundless fear, as it is said no fall of stone has occurred in the Cave within the knowledge of man. At the end of Wild Hall a very narrow crevice leads to

SNOWBALL ARCH, where white rounded patches of gypsum thickly incrust the ceiling. A sharp turn opens into

GRAND CROSSING, where a gallery on the tier above has broken through its own floor to the lower one, giving an excellent illustration of the manner in which the various levels of the Cave were constructed. Pensico Avenue and its branches may be explored some distance beyond the Pineapple Bush and the Hanging Grove, but Grand Crossing is usually made the turning-point, and thence the path is retraced to the narrow passage back of

Giant's Coffin, and from there to the Main Cave. The chief thoroughfare of this underground country is really splendid in its proportions, and it is appalling to think of the swiftness of the torrent which thus forced its way through the living rock. Just here the waters must have surged, and eddied with mad velocity, as the broad avenue doubles sharply on its former trend and forms what is literally

THE ACUTE ANGLE. A trace of the circling waters is left on the ceiling, where a large egg-shaped cavity is hollowed out. Here are more queer shapes in blackened gypsum on the clean limestone surface, the Indian Chief and

THE GIANT AND GIANTESSES, who seem to be sportively tossing to and fro a ponderous infant in swaddling clothes. A few yards beyond are two little huts, rudely built of the cave limestone, and known as

THE CONSUMPTIVES' HUTS, which have a melancholy history. The miners who once worked the nitrous earth were known to have grown healthy and robust, and in 1843 a little company of fifteen persons, in the last stages of consumption, formed a settlement here in the vain hope that the favorable conditions of even temperature, dryness, and the highly oxygenated air might check the ravages of the disease. Actually buried alive, this spectral colony lived in their roofless cottages for five months, until the climax of this strange tragedy came in the death of one of their number, and with his life the light of their hope went out. Then began a mad rush for the living, beautiful world outside, but death ran too swift a race, and it is related that several died before the entrance was reached, and the rest succumbed in a very short time. Under the cedars, in a tangled overgrown patch near the

Hotel, several of these unfortunates lie at rest, the moss-grown and crumbling stones telling nothing of their strange story and stranger fate. A few paces beyond the stone cottages is the unique attraction of the Cave,

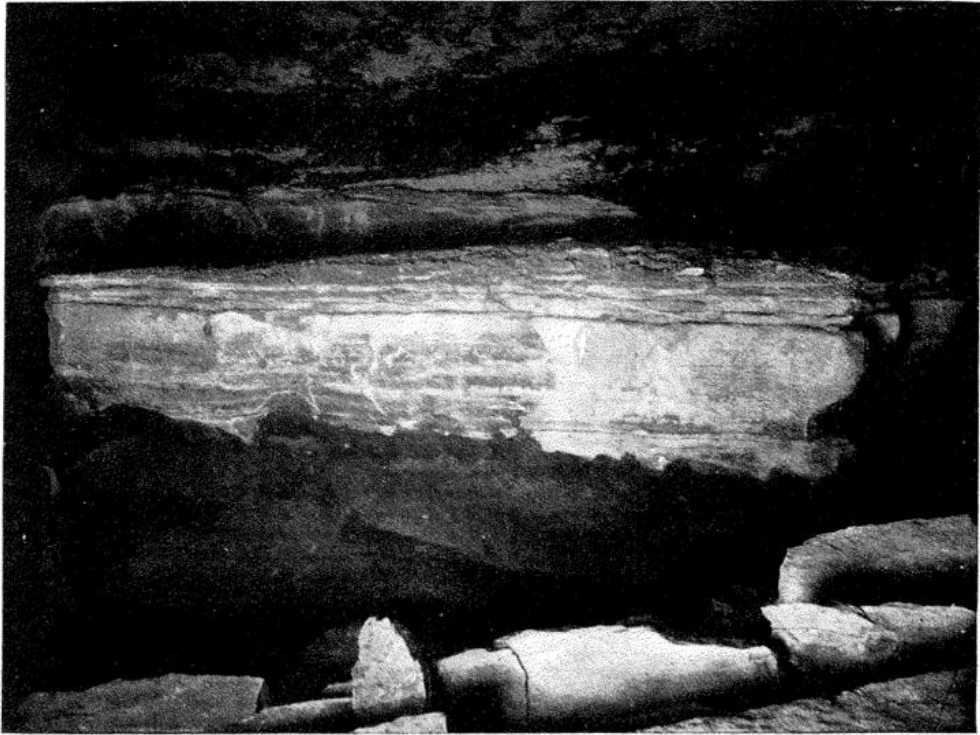
THE STAR CHAMBER.

Here the guide seats his party on some convenient wooden benches, requesting them to watch the ceiling and wait until he returns. Gathering up all the lamps, a hole in the wall swallows him, and as the last ray of light disappears, there descends a blackness so absolute and leaden that it is almost terrifying. Instantly the air, which a moment since was brisk and stimulating, grows heavily oppressive: through the death-like silence it is possible to count the heart-beats, and in a dragging second of time the horror of the curse of darkness is revealed. Even while gazing into this almost tangible gloom the grim tension is loosened, and the watchers are held spell-bound by a vision overhead. Myriads of stars have sprung into the velvet blackness of the clear, calm vault above, and one breathes freely again, for this can be no illusion. By some spell, the radiant serenity of a cloudless summer night is there, but even as one looks the sky is no longer cloudless, but gradually overcast by heavy shadows which veil the stars and finally blot them out. Again the watchers are left in darkness, but little by little a faint rosy light creeps up in the east, a dog barks a saucy *veille*, the bleating of sheep and the lowing of cattle suggest the coming of dawn and the awakening of nature: then the sun appears in a flood of glory—as does also *the guide*, who is something of a ventriloquist. This is the

wonderful illusion of the Star Chamber, which serves as a fitting climax to the Short Route, and is produced by a deft manipulation of clustered lights which, from a hidden side passage, are thrown upward over the mass of starry gypsum crystals incrusting the ceiling. Beyond this storehouse of magic the Main Cave may be followed for many miles, but it is seldom traveled on account of the distance and the roughness of the road. For those who have time and inclination, there are many points of interest along this route, notably Proctor's Arcade, the Snow Storm, where the flaky gypsum often falls in showers: the Floating Cloud Room, Wright's Rotunda, "S" Bend, Fox's Avenue, the Big Chimneys, the Cataracts, Solitary Chambers, Fairy Grotto, December Street, and Chief City, an enormous apartment estimated to cover about two acres, and arched with a roof of solid limestone. The Short Route is completed at the Star Chamber, but, to break the monotony of the return, a stop is made just beyond the Giant's Coffin to show a very ingenious and beautiful optical illusion. Halting his party, the guide goes ahead, and after a few moments a shout is heard. In the distance, standing upon a well-defined pedestal, against a background of velvet blackness, is seen a figure, wrought apparently from the most translucent crystal. With more or less poetic license this has been termed

MARTHA WASHINGTON'S STATUE,

and is nothing but the outline of the jutting walls where the Cave makes an abrupt turn, sharply defined by a blazing light. This pretty display is the final incident of the Short Route.



GIANT'S COFFIN.
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THE STAR CHAMBER.

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The Long Route.

The avenues and passages of the Long Route are so distinct in their interest from those of the Short Route that, without making the second and longer exploration, a visitor can hardly be said to have seen the Cave. The preparations for this expedition are more elaborate, as, owing to the length of the trip, dinner is carried in by the guides and served to the party in the Cave. After reaching the entrance and passing the iron gate, the path through the Main Cave is the same as that followed over the Short Route. A turn is made back of Giant's Coffin, thence across the Bridge of Sighs to Revellers' Hall. The avenues hitherto explored are now abandoned, and a passage opening on the left of Revellers' Hall,

THE VALLEY OF

HUMILITY. marks the commencement of the Long Route. The transit of this vale necessitates a general ducking of heads and leads to

THE SCOTCHMAN'S

TRAP. Over a small black pit in the floor hangs a huge stone slab, like a massive lid, which is apparently only prevented from closing, by a frail ledge of rock. Its fall seems imminent enough to have frightened even the canny Scot, who is said to have come this far and no farther: but it is consoling to know that if this trap should ever close, there are various other ways of making an exit. Just above Scotchman's Trap is perched

THE OWL.

an embodiment of wisdom in miniature, and one of the most perfect of the sculptured rocks which have taken on a life-like semblance. The descent here is very abrupt into

GRECIAN BEND AVENUE.

where the roof lowers abruptly and a proper show of humility is again necessary. The walls now close and the roof still descends, until it would seem that there is "no thoroughfare" here. The guide, however, shuts himself up after the manner of a partly-closed jack-knife, and with a crab-like motion begins to edge through a crevice famous as

FAT MAN'S MISERY.

This is a long, tortuous passage, just wide enough at certain points to squeeze through with great effort, and never high enough for an ordinary person to stand erect, which turns and twists and doubles for over 200 feet through the solid rock. Near the end, entering

TALL MAN'S TRIBUTATION.

the roof seems ready to shut down altogether, but this final discomfort is brief, as a welcome outlet is found in

GREAT RELIEF.

an ample room, where one is free to stand up straight and take a long breath. In the limestone ceiling is shown a perfect reproduction of

THE ODD-FELLOWS' LINKS.

and a short distance further on, in an alcove at the right, is a more curious and elaborate example of this peculiar water carving. This is

THE BACON CHAMBER.

where the water-worn rocks hang suspended from the roof like so many hams and sides of bacon in a smoke-house. The Cave at this point might well be termed the "Five Corners," as five different passages diverge from it. The first, just traced from Fat Man's Misery, the second ascending

into Bandit's Hall and the Corkscrew, the third leading through Spark's Avenue to the Mammoth Dome and Egyptian Temple, the fourth into the Bacon Chamber, and the fifth into

RIVER HALL.

Skirting this is a high and narrow cliff which overhangs a gloomy, sullen pool,

THE DEAD SEA.

lying black and forbidding in the depths beneath. Descending a flight of wooden stairs a small cascade is reached, supposed by some to be the reappearance of the fall of water at the entrance to the Cave. Beyond this is another sullen looking body of water.

THE RIVER STYX.

which for many years was navigated by clumsily-built boats until the discovery of

**THE NATURAL
BRIDGE**

afforded a quicker and pleasanter means of transportation. This rocky span apparently swallows up the Styx, but the waters reappear on the other side as

LAKE LETHE.

which is skirted by a narrow path leading across a pontoon bridge into

THE GREAT WALK.

a long, ample passage, with a high arching roof, and floored with the finest yellow sand. In reality a former river-bed, the Great Walk is reasonably dry in summer, but becomes submerged when the water rises in the lower levels. Near the end is Shakespeare's Gallery, where

**SHAKESPEARE'S
HEAD**

is cut in intaglio in the ceiling. This is so startlingly like the death-mask preserved at Stratford-on-Avon that the swollen cheek is plainly discernible. At the termination of the Great Walk lies

ECHO RIVER,

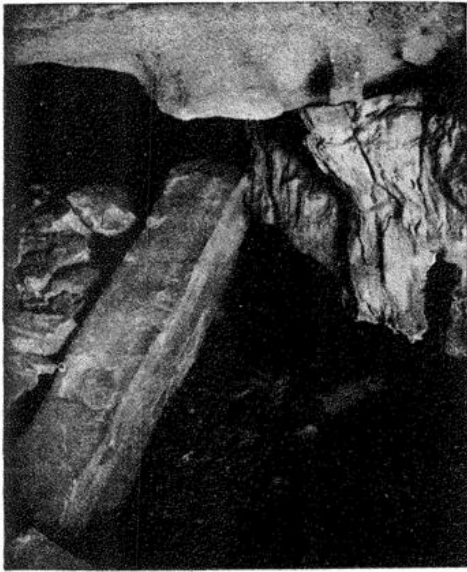
where is moored the rude fleet which serves for the voyage on this marvelous stream. These ungainly craft are brought piecemeal through the tortuous passages and put together inside the Cave. They are, nevertheless, well built and perfectly safe, serving to transfer a dozen or fifteen people at a time. Embarking cautiously, with the guide, paddle in hand, in the bow, the arch at the entrance hangs so low that, for several yards, all are forced to crouch almost to the level of the gunwale. Suddenly the roof springs up in a majestic vault, the walls broaden with a fine sweep, while the flare of many Bengal lights makes the scene one of unearthly beauty, which, with the music of its echoes vibrating back and forth, renders the voyage on Echo River the most thrilling and impressive of all adventures in the Cave. Few musical sounds which one has ever heard can equal the rare echo, which has the power and resonance of the finest organ, combined with the melody and sweetness of a choir of voices. The full rich chords reverberate and float back from dim recesses of the still waters, and one is held spell bound by these fairy harmonies. Echo River is estimated as about three-quarters of a mile in length, but the ride is all too short. The landing is made in

SILLIMAN'S AVENUE.

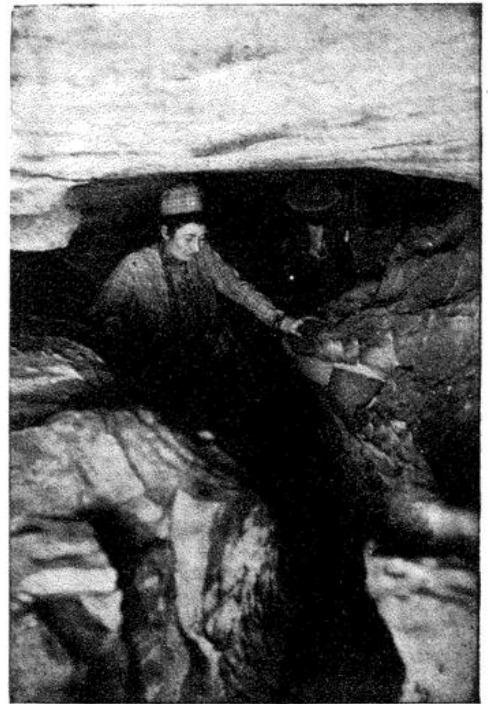
a long, irregular passage, and the way lies for some distance over a path of loose stones and wet clay. Near the entrance is

THE DRIPPING SPRING,

a small fall of water, about which are a few stalactites. As the way progresses, it becomes rougher and more unpleasant, and no one is surprised where a particularly bad stretch is reached to find it called

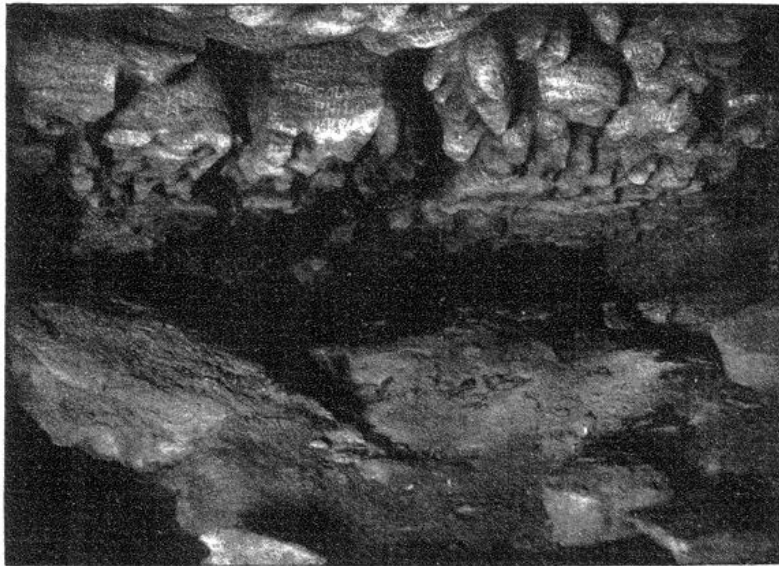


SCOTCHMAN'S TRAP.



FAT MAN'S MERRY

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BACON CHAMBER.
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THE INFERNAL REGIONS. Not far beyond and naturally enough is

PLUTO'S DOME, followed by

SCRATCH'S ARCH, which leads almost directly into

SERPENT HALL, where long serpentine crevices on the ceiling give rise to the name of this room, which forms the outlet of Ganter Avenue, and connects in a round-about way with the upper galleries. Climbing

THE HILL OF FATIGUE, a steep ascent, the path follows

THE NARROW-GAUGE WALK, leading around an immense rock on the left, which, with a well-defined rudder, seems the bulging stern of some huge vessel. This has been most appropriately named

THE "GREAT WESTERN." Not far beyond,

THE VALLEY OF FLOWERS is reached, a welcome spot, which serves as the Cave dining-room, where the party now finds luncheon neatly spread on a large flat rock. After a time of rest and refreshment, the march is once more resumed into

OLE BULL'S CONCERT HALL, where the virtuoso once played to enraptured listeners. From the Valley of Flowers there is also another gallery, Rhoda's Arcade, which leads to one of the finest, and it is said the loftiest, of the Cave domes—Lucy's Dome. These are seldom visited as they are so difficult of access. Leaving the Concert Hall, the path leads into

THE PASS OF EL GHOR, a wildly rugged and picturesque passage, which boasts many

points of curious interest. The sides are broken and irregular, and in many places the roof seems on the point of falling in. Hanging Rocks are a mass of suspended boulders, while

SUICIDE ROCK

is a single, huge stone caught in between two projecting ledges of the roof. The more remote avenues are filled with the most curious gypsum formations, the first of which is shown in

THE FLY CHAMBER.

This seems very much like the other rock-tunnelled chambers, except that the roof is apparently swarming with flies, which are, happily, crystallized points of sulphate of lime. Beyond the Fly Chamber is

THE SHEEP SHELTHER,

a broad, jutting ledge which might comfortably house a flock, and in close proximity is

QUEEN VICTORIA'S CROWN,

well defined in outline, but much too massive to adorn the head of England's Queen.

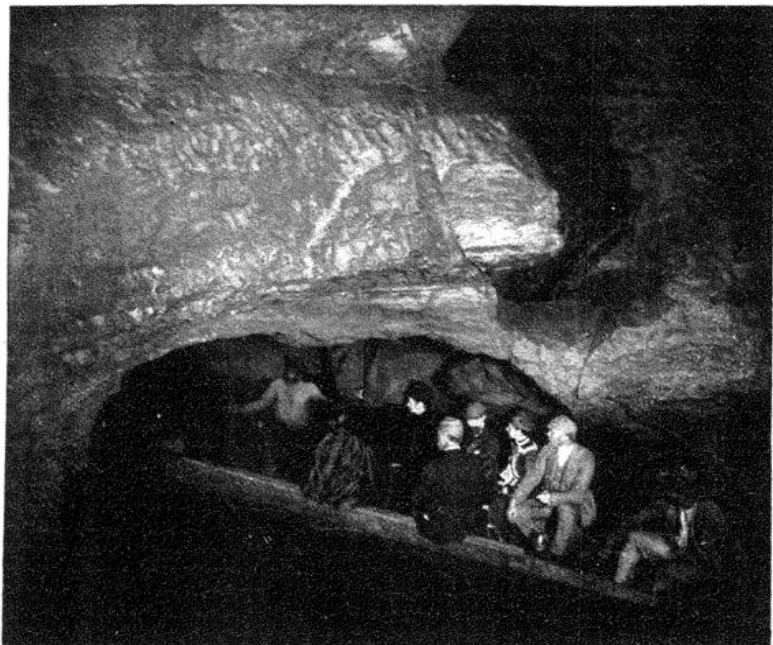
THE MULE STALL

is a neatly hollowed-out recess, which might serve very comfortably for a stable, if it were possible to bring in the mule in sections and piece him together after the passage of the Corkscrew or Fat Man's Misery. Near at hand is Corinna's Dome, about 40 feet high and directly over El Ghor. This Pass has many vagaries in its formation; one of them is

KNEE-HIGH CANYON,

a narrow cut in the rocky floor, which is just what the name suggests.

THE BLACK HOLE		
OF CALCUTTA	is a gruesome cavity, yawning at one side of the Pass, while	
THE SPONGE,	a huge mass hanging upon the wall, might have been fished from the bottom of the sea.	
THE PENNSYLVANIA		
BLUFFS	are near the Natural Keystone, another Suicide Rock which has "hung itself." Further on is Henderson's Rest, or	
THE NATURAL BRIDGE,	just beyond which is	
HEBE'S SPRING.	At this point the path leaves El Ghor, and a steep flight of stone steps climbs to a higher level into	
MARTHA'S VINEYARD.	where, on an overhanging bank and incrusting the walls far up to the ceiling, are masses of large translucent globules, much the color of grapes, but in reality another species of gypsum. There is a fine spring of water under the ledge. Just beyond the Vineyard is the entrance to	
CLEVELAND'S CABINET.	one of the most wonderful avenues in the Cave, estimated at several miles in length, and a perfect treasure-house of beautiful gypsum floescence. The first room,	
WASHINGTON HALL,	is of no particular interest, but was formerly a dining-hall. Beyond this is the	
SNOWBALL ROOM.	where flaky spheres of gypsum are scattered over the ceiling, as if it had been a fort bombarded in a snow battle. Further down—in	
FLORA'S GARDEN—	begins the real display of the most marvelous and beautiful of all the gypsum incrustations, a bewildering profusion of	crystalline blossoms, so perfect, so varied, so abundant, that no favorite among all the flowers is missing. Shining in a crimson light it seems as if Dame Nature had showered down, in a frozen, snowy mass, all the dead roses and lilies which perish in the chill winds of the upper world. These incrustations take many distinct forms, which have been singled out and named.
		THE CROSS IN FLOWERS
		is cut in a deep cleft in the arch and ornamented with crystalline rosettes. Beyond this is one of the finest single specimens of these alabaster flowers—
		THE LAST ROSE OF SUMMER.
		It is unique in size, almost perfect in shape, and set in solitary beauty in the smooth ceiling. On account of its position—directly overhead—the attempt to photograph it has never before been made. Further on, in
		THE STRAWBERRY GARDEN,
		the incrustations take on some fancied resemblance to this fruit. Another bit of crystallization is
		OSCAR WILDE'S SUNFLOWER.
		which is quite perfect in every detail. Beyond this æsthetic blossom is
		ST. CECILIA'S GROTTO,
		a pretty recess hollowed in the wall, and covered with myriads of these fairy-like incrustations. In
		THE VALE OF DIAMONDS
		the gypsum has crystallized in very minute points, which catch the light and glitter and sparkle like real jewels. Further on, this protean mineral takes on a new form in
		THE DENTIST CHAMBER.
		where <i>teeth</i> of all sizes and shapes, and by the wholesale, closely stud the ceiling.
		DIAMOND GROTTO
		is an alcove where the formation is much the same as in the



ON ECHO RIVER,
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DISSER IN THE CAVE
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Vale of Diamonds, and the arch blazes with brilliant points of light.

THE WALLS OF GLORY show a like beauty of iridescence. Near the end of this incomparable avenue is

CARLOTTA'S GROTTO, the last, but among the finest of the alabaster treasure-houses. The road now grows full of difficulties, and the

DEVIL'S PATHWAY, rough and stony, leads to the termination of Cleveland's Cabinet, which ends somewhat abruptly in a great wall of jagged rocks. The Cave branches off in three avenues here, but the ascent leads over a formidable pile of boulders called

THE ROCKY MOUNTAINS. After a weary climb, where every step has to be made with caution, the summit is reached, and the outlook is into an immense chamber, where, in the dim light, the walls seem almost to disappear. Descending into

DISMAL HOLLOW, the way becomes somewhat smoother, and a short walk leads to

CROGHAN'S HALL, another great apartment, where the walls are garnished with stalactites. In one corner is

THE MAELSTROM,

a horrible abyss, estimated at 175 feet in depth, but which has never been fully explored. While there *may* be some outlet to its gloomy depths, all further progress is now practically barred by the stalactite wall, and the party has reached

THE END OF THE CAVE.

A brief rest, and the work of retracing the long route begins. After crossing the river, the return journey has no incident but the exciting transit through

THE CORKSCREW.

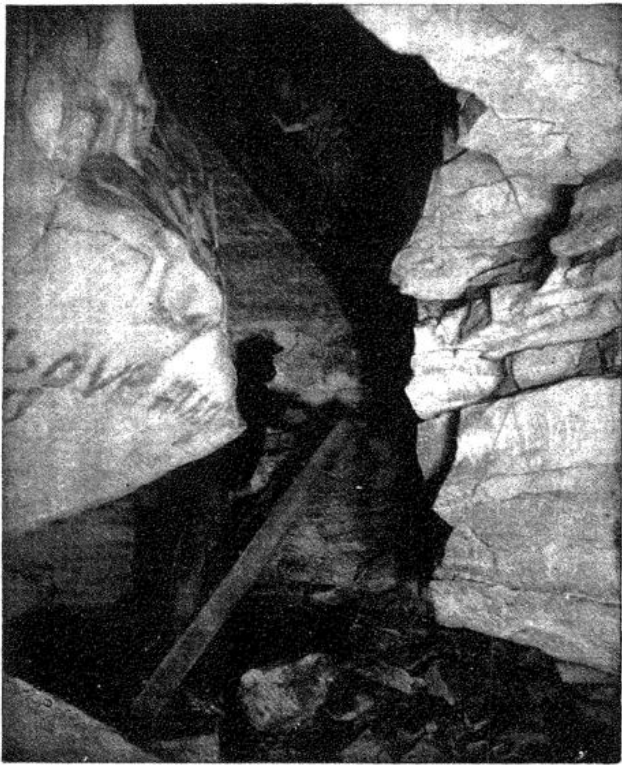
This nearly impassable cranny is just over the Bacon Chamber, and winds and twists upwards for fully two hundred feet into the Main Cave, several stories above. Although it had long been known to form a connection between these levels, it was first traversed by William Garvin, almost at the risk of his life. Climbing a series of ladders, crawling through crevices, and scrambling over boulders, the party emerges, breathless and disheveled, but happy in the consciousness that two miles of travel and the discomforts of Fat Man's Misery have been avoided. From the Corkscrew to the mouth of the Cave, the distance is very short, and a few more steps serve to complete the Long Route.

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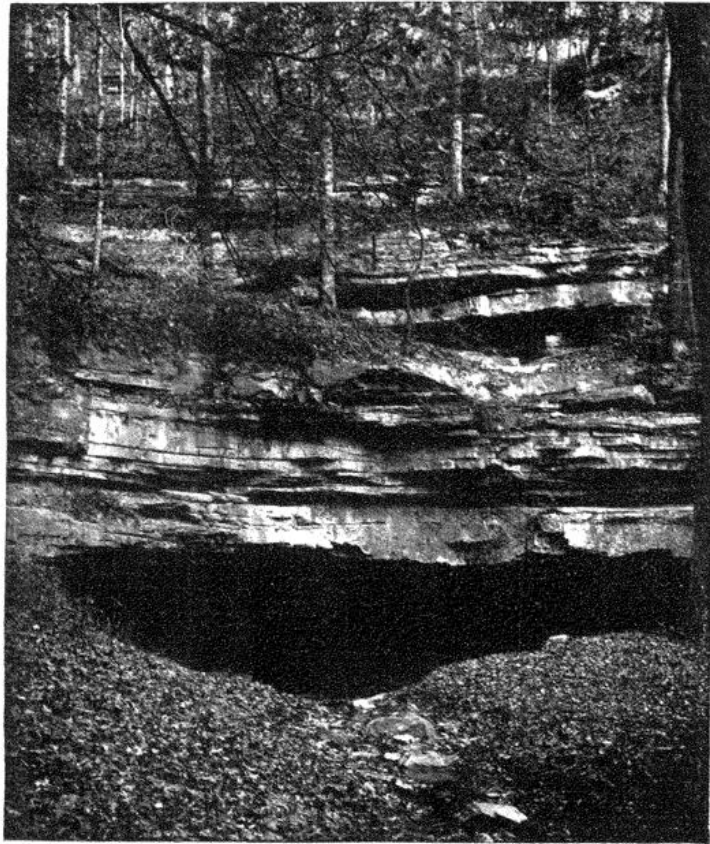
THE ROCKY MOUNTAINS,
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THE CORP-SCREW,
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EXIT OF ECHO RIVER.
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Our Party

MAMMOTH CAVE, KY.,, 189.....

Guide.....