

GEORGE BREWER'S MOVING PANORAMAS OF THE MAMMOTH CAVE AND OTHER NATURAL WONDERS OF AMERICA

By JOSEPH EARL ARRINGTON
Hollis, New York

Part I

The panorama movement served important national purposes in mid-nineteenth century America. It was a means of mass communication in the whole economic and cultural life of the rising new nation. While the young generation was occupying the continent, building up the economic life and producing the native literature, the new school of panoramic art was displaying pictorially upon canvas the geography of the homeland and the significant national activities, to be shown to the populace.

One of the young panoramists made a special contribution in this field and aroused unusual public interest by creating timely paintings of the natural wonders of our country. People were ready to applaud the creation of a new panorama "contain[ing] the loveliest and most wonderful scenery of the American Continent." The subject was "especially a national and American one — painted by native artists, who sought not in [foreign] skies that genuine inspiration, which dwells as freely and more vigorously amid the beauties and wonders of our own Columbia." The paintings stimulated feelings of popular pride, that "the world has but one Niagara and but one Mammoth Cave, and the Prairies are her own." These and other wonders, being "remarkable for their vastness" and also as "great national objects," were selected by the artist "for this truly great national panorama production," that became an American "ideal of a national work of art."¹

The creator of these new panoramas was George St. P. Brewer, who was born in England on March 11, 1814, and "was in his younger days a resident" of Toronto, Canada, where his brother Richard was a book-binder as early as 1833. He came to America probably in the late 1830s, and soon married a southern girl from Georgia, four years younger than himself. George and Mary Brewer settled in the west, where they reared their growing family. The United States Census of 1850 listed three children, born in as many states — George in Illinois, 1840; Georgiann in Missouri, 1844; and George R. in Kentucky, 1848. Brewer was living in St. Louis in 1844 and again in 1852 and then in Louisville,

probably from 1845 to 1850. Both cities were growing and stimulating cultural centers, where a number of young, western artists resided and painted in the panoramic medium. He selected landscape painting for a career, starting with western scenery on small canvases and then producing his large scale panoramas of the *Natural Wonders of America* in 1848, for exhibition. Afterwards, the artist began working on his second, large panorama, *A Glance At The World*, which was completed and its exhibition started in 1852. His brief art career came to an end by death, in St. Louis, on December 26, 1852. The press reported that "Mr. George St. P. Brewer, an artist of this city, died last evening at his residence" on Main Street, at the age of thirty-eight years. He "had an extensive acquaintance" with the artists of the region and "was rapidly advancing in the profession." His body was interred in the Bellefontaine Cemetery of the city.²

Brewer selected the scenes from "one of the chief wonders" and most "beautiful of the works of nature in our country as the principal subjects of his pencil," namely, the famous Mammoth Cave of Kentucky.³ This cave, discovered as early as 1798, had been valuable to the U.S. Government by furnishing the necessary gunpowder to fight the Indian battles and the War of 1812. Then for a quarter of a century, the usefulness of the cave was undergoing a transition from its past saltpeter factory to a public show place. The definite turning point for increased cave travel came in the winter of 1834-35, when Edmund F. Lee, a Cincinnati civil engineer, spent three or four months in "surveying and leveling eight or nine miles of cavern" floor, that was executed "with extraordinary skill and fidelity." He produced "the first map to have been professionally made" of the oldest or uppermost avenues and chambers, which "form[ed] the basis of several other maps." He published his *Notes on the Mammoth Cave* at Cincinnati in 1835.⁴ Then in 1837 or 1838 Franklin Gorin, of Glasgow, Kentucky, "purchased the cave and property, when it was in a dilapidated state," for \$5,000 and the build-up program continued with his agents and two Negro slaves, Stephen Bishop and Matt Bransford, who were invaluable aids in the early guide service of Mammoth Cave.⁵ Then Dr. John Croghan acquired the property in 1839 for the sum of \$10,000. He began large scale improvements of the grounds, roads and dwellings for tourist comfort. He also worked on the interior of the cave to lessen public dangers, enlarge the sight-seeing routes, and to offer more effective guide service. The early heights of fame for Mammoth Cave as a public spectacle were reached in the decade of the 1850s, under the direction of Dr. Croghan.⁶

Increased public enjoyment of Mammoth Cave depended upon the solution of the visual problem within the unlighted interior, that is

today electrically lighted, but then "darkness deeper than that of the blackest midnight . . . pervad[ed] these subterranean recesses."⁷ The way pre-Columbian Indians solved the difficulty was by lighted faggots, as indicated by the "vast quantities of broken, half-burnt canes [and reeds that] lie among the rocks" in the cave.⁸ The guides in the early 19th century used iron lamps, filled with grease or lard and swung them on staffs for visitors to carry. On entering the cave, some time was required for each one to get his "cave eyes" and then the torch seemed to be just "a little gleaming light much like a shade," giving merely outlines of close ground objects for safe footing, and visitors still remained largely dependent upon oral descriptions for their knowledge of the cave. Even the collected torches of a small party failed to disperse the inky darkness for any distance, or to open up a cave scene as a whole.⁹

Some early guides seized upon the "old wooden ruins" of the salt-peter works to build "a brace or two of fires," so visitors could "have a better conception of the scenes" around them. Then came into use the flashes of medicated paper and Bengal lights to illumine the larger halls, pits and domes. The best effects were attained when the guides took a number of lamps, and "made certain arrangements" of them, so as to "cause their [light] reflections to fall upon the pillars and ceiling," or hung them "in many places from the ceiling," thus "lighting up the whole space." As soon as the "soft mellow light was reflected in the distance, which radiated and diffused itself over the huge grey walls above and around us," tourists reported a "scene surpassingly grand" that "enraptured sight."¹⁰

Pictorial representations in the cave lagged far behind personal vision by flash sight. Artists needed more and longer-lasting light "to disperse the gloom," in places where the walls in the cave were "so dark as not to reflect one single ray from the dim torches." In 1837 some visitors did make an attempt "to secure a drawing of the Vestibule," by lighting it "with a dozen or more torches and flambeaux, or two or three bonfires besides; but still the obscurity was so great that it was necessary, in sketching any one part, to have the torches for the time held before it." They discovered how impossible it was "to light it up so as to embrace all its striking features in one view." Yet such flash sights did show that "its grandeur, its air of desolation combined with majesty, are unspeakably impressive."¹¹

George Brewer, "an adventurous artist," went to see this national spectacle in 1845, when he was thirty-one years of age, to make "the first representation of the cave." He was impressed and decided "to obtain drawings of a number of the different avenues, halls, and chambers, for the purpose of illustrating the hidden wonders of this natural

phenomenon to the eye, by the aid of the beautiful illusion of the moving panorama," which was "in a great degree successful." This was probably done at intervals in the beginning, and then "the artist resided for some time in the neighborhood of the Mammoth Cave," thus "affording him the advantage of frequent studies." Moreover, he became acquainted with Dr. Croghan, the cave owner who lived at Louisville, that enabled the artist to share in the past exhibition experience and make use of the newer equipment and service. A small room within the cave, near the favorite site of Gothic Chapel, was selected for his work. Here "he carved a bust and painted his name near the entrance," and this became known as "Brewer's Studio." He "finished many of his sketches in this place."¹²

It was "by the permission of the proprietor, Dr. Croghan," and with the full cooperation of his agents and guides, that the whole cave was explored and the most striking parts selected for panoramic representations. Then "every facility was given to Mr. Brewer (the artist), during the time of nine weeks, in which he was occupied in making the drawings" for the panorama. While the original, on-the-spot "drawings were [being] made, the different parts of the cave were illumined . . . with hundreds of lights, of various kinds, placed at different points, so as to give the best effects." The lighting system, "at the time the artist took his sketches," consisted of "500 lamps, burners and torches," which brought out "the most powerful and just effect, to the ever-varying perspective within" the cave. The "immense lustre" and "brilliant light" of the 500 torches were thrown upon the cave interior, "encrusted from one end to the other with a substance of translucent whiteness and a dazzling crystallization." Thereby the "light is trebbled in the reflected flashes of the Glittering Dome, and Adamantine Pillars," and encrusted walls. As a result, "every passage and vault was rendered almost incandescent, and a radiance equalling that of the sun at noon day was thus diffused throughout the stupendous and ordinarily gloomy chambers of the Mammoth Cave." Consequently, the artist "had the advantage of examining and of transferring to his canvas everything, even to the most minute crystal existing within the portion of the cave explored by him." He painted a well-lighted cave that "flash with crystal roof and diamond pillars overhead," with its "formations glittering and scintillating in the rays thus thrown upon them." The cave was drawn "in all its glory and represented with beauty," as seen by the artist. His procedure had "enabled him to give such a representation of it, as was never seen by any visitor to the cave" before that time.¹³

Brewer's "great national production" on the Mammoth Cave and other natural wonders were "admirable subjects for panoramic exhi-

bitions, affording as they do opportunity for bold effect, and power of perspective," and popular appeal. These American wonders that could be "transferred with such correctness to the glowing canvas" were "taken by artists on the spot," by Brewer himself and other possible assistants at home and abroad or from drawings of traveling artists. They were "drawn by men who have traversed the western prairies, and stood in speechless awe before the foaming Cataract of Niagara, or beneath the dimly glittering dome of the colossal cave in Kentucky." To paint the panoramas from these original sketches, Brewer set up his studio in Louisville, a city where John Banvard had painted his famous Mississippi panorama in 1846.^{13a} The records do not show the exact location of Brewer's studio, although his residence was at No. 52 Seventh Avenue, between Market and Jefferson Streets.¹⁴

It was probably early in 1848 when the artist began "the first attempt ever made to convey an accurate impression" on panoramic canvas of the far-famed Mammoth Cave. By July "the Mammoth Cave, Niagara Falls, Egyptian, Mississippi and Ohio scenery" had all been "painted on over 10,000 [square] feet of canvas." Included with the panoramas were a few still pictures, "the burning of the *A. N. Johnson* steamboat in 1847," "the interior of the steamer *Ben Franklin*" and "the Falls of the Ohio River," giving a distant view of Louisville. The number of scenes for the cave was not mentioned at first, but later reports give the total number successively, as "35 distinct views to complete" it, then between "30 and 40 views" and finally 47 to 49 "different scenes." In comparison with Banvard's Mississippi, local editors felt Brewer's Mammoth Cave was "akin to this and equally meritorious" and they were proud that "the greatest pictures in the world have been painted in Louisville."^{14a}

Like Banvard also, Brewer did not have the means to complete all of his panoramas in the studio at one time, so he exhibited the finished paintings in Kentucky and Ohio during the latter part of 1848, to gain the necessary funds and resources to continue his work. Then by November of the same year, the artist had returned to Louisville and added "a day's travel through the western prairies," the "full view of the City of Mexico" and more scenes on the Nile River. There were also other new, single pictures of the "interior of Kentucky," including the "hotel and cottage for visitors and transient boarders" near the cave, Henry Clay's Ashland Residence and Harrodsburg Springs. Now the "splendid panoramas are painted on 15,000 feet of canvas." Andrew Jackson's Hermitage was added in March 1849 while in Baltimore, and in June of the same year at Philadelphia, the artist had completed most of his panoramas, by adding scenes of the journey up "the Niagara River" to Niagara Falls, also of Mount Vernon and Virginia's

Natural Bridge, with other new scenes of the Mississippi and Nile rivers. The work continued until November 1849, when all the panoramas were "painted on 25,000 feet of canvas," all being "admirably executed" and "full of interest." While in Charleston, S.C., in December 1849, both "summer and winter views of Niagara River and Falls" were ready to be used. When the exhibition returned to Cincinnati in April 1850 "the views [had] all been much improved" since it was there in 1848. After the exhibition reached Boston in August 1850, Brewer had painted the "Boston Commons"; the "Fairmount Water Works and scenes on the Schuylkill" River, that he had sketched in Philadelphia; the "most enchanting view of Fairy Grotto," of the Mammoth Cave; and finally the Mignot Lighthouse in Boston Harbor. Thus Brewer had completed his panoramas and paintings, and all have "their peculiar merit, from the happy manner in which each subject is handled by the artist." "Many of the subjects are entirely new," especially the Mammoth Cave scenes which "are truly wonderful and beautiful, the prairie scenes unique and thrilling, while Niagara in its awful grandeur was never before so truthfully portrayed upon canvas."¹⁵

Brewer's panoramas of the wonders of America seem to have changed hands at the end of 1850 or 1851 while in Boston, so the artist could work on his second panorama, *A Glance at the World*. George Howorth, "Restorer of old painting," became the new manager of the exhibition in Boston, because of his "knowledge of its great superiority as a work of art." Then, while in the city and before the European itinerary had started, second copies of the different panoramas were painted, most likely under the direction of Brewer himself. But they were financed by George Howorth, who was born in England in 1791, came to America before 1833, had prospered and become wealthy through the years, in his art business at No. 1 Bradford Street, in Boston. His young and talented son (or nephew) John Howorth, born in New York about 1836, became the manager and proprietor of the second exhibition. It was through their "enterprise and capital," the very "large outlay of capital and labor," that the new copy was produced. The young proprietor informed the public that "this unrivalled work of art has been produced at a net cost of \$45,000." That sum presumably included Brewer's capital and labor expenditures and Signor Bartolommeo's Crystal Palace panorama, that "was purchased by Mr. Howorth for the sum of \$15,000," to be added to the Brewer panoramas. It was many years later at London in 1859, that the Victoria Bridge was painted by Canadian or English artists, to become a part of the exhibition.¹⁶

The various panoramas and paintings were all well executed. The first criterion for their excellence was "the fidelity with which the

Mammoth Cave.

AT AMORY HALL,

Corner of Washington and West streets,

BREWER'S PANORAMA

—OF THE—

WONDERS

AND NATURAL CURIOSITIES

—OF THE—

AMERICAN CONTINENT.

FAIRMOUNT WATER WORKS, & ADJACENT SCENERY.

Id lingers on the mind like a dream of fairy land. The

MAMMOTH CAVE

OF KENTUCKY.

THIS subterranean world has been explored in its various avenues, over 600 miles, and in its awful depths more than 600 feet. By direction of the proprietor it was illuminated with 500 lamps, burners, and torches, and every facility was given to Mr. Brewer (the artist) during the time of nine weeks, in which he was occupied in making his drawings for this picture. The eye and the fancy are regaled with a succession of magnificent

Halls, Grottos, Arches, Chambers, Domes,
LABYRINTHS, RECEDING CAVERNS, RIVERS, AND LAKES,
 Some of the latter being large enough, and of sufficient depth, to float a Navy—all richly and judiciously illuminated. The large
Stalagmite and Stalactite Pillars, covered with Diamond Drapery,
 Supporting the vaulted and lofty roofs, the ceiling studded with starry light, contributed largely to the general effect—and as a writer on the Mammoth Cave observes, "It is like no other; it has no brother!"

Forty-nine Distinct Places are Represented,

And not any two of them in the least resembling each other. They are appropriately named, as follows—Cottages, Hotel, Marine, Cave House, Entrance to the Cave, 21 view of entrance from within great Ventilate, Kentucky Clefts, Chert, Acute Angle, Gothic Gallery, Gothic Avenue, Register Room, Gothic Chapel, Stalagmite Hall, Devil's Arm Chair, Lover's Leap, Brewer's Studio, Glass Coffin, entrance to the River View, Star Chamber, Floating Clouds, Chief City or Temple, Labyrinth, Grotto's Door, Bridge over the Bottomless Pit, Harriet's Shaw, Floating Way, Great Relief Hall, Bacon Chamber, River Hall, Dead Sea, River Lecher, River Bazaar, entrance to Echo River, Pass El Chert, Williams's Tomb, Crispin's Hall, City of the Tombs, Saint Cecilia's Grotto, Martha's Vineyard, Snowball Room, Cleveland's Cabinet, Paradise, Mary's Tower, Brown's Arkon, Fairies Grotto. The above

ARE BEAUTIFUL BEYOND CONCEPTION,

And a visit to this exhibition gives a better idea of its excellence and truthfulness than can be obtained in any other way. The first representation of the Cave, was made by Mr. Brewer in 1845; it has gained an excited celebrity in the South and West. In Philadelphia it was visited by eminent artists of that city, and they favored Mr. Brewer with the following notices:

1. Thomas Dally, Esq., artist, of Philadelphia, says

"Mr. Brewer has achieved one independent—such of representation. My judgment is formed on the accuracy with which the painter has given the (Pain of Niagara), the original of which I have seen. Its truthful delineation has given me a firm reliance on the truthfulness of the rest of the Panorama."

2. Another artist, of Philadelphia, Mr. Paine gives his opinion in the following terms

"Mr. Brewer's Panorama, strikingly varied by other scenes, gives its chief attraction to his truthful representations of the stupendous and magnificent chambers of the Mammoth Cave of Kentucky. His residence near the Cave affording him the advantage of frequent studies, should he duly apprehend in this unique production."

3. John Hough, Esq., artist, of Philadelphia, says

"I have several times availed myself of the opportunity of witnessing Mr. Brewer's Moving Panoramic Paintings, executed by his truthful pencil, and I, and several letters of art were commended me to this exhibition, derived from several places at such time."

4. Dr. Crispin, the proprietor of the Cave, in a letter to the artist says

"Your Panorama of the Mammoth Cave, I confess, much surpassed my expectations. The general impression has been that no one could paint a correct representation of the varied and magnificent scenes which are witnessed in the different avenues of the Cave. I am happy, however, to say, that you have demonstrated that such is not the fact. Your Panorama exhibits most striking and faithful representations of the scenes which it represents, so that persons who have visited the cave would immediately recognize them."

5. Brewer's Panoramata.—The S. Scherbert, Artist of Rouen, cheerfully recommended "Brewer's Panorama of the Mammoth Cave of Kentucky, the River and Falls of Niagara, and the Western Prairies, &c. &c. The plan adopted to enable the spectator to judge for himself in all respects."

THOMAS T. SPEAR,
 CHESTER HARDING,
 A. G. HOIT,
 BASS OTIS,

JOSPH AMES,
 C. G. THOMPSON,
 MOSES WIGHT,
 MOSES B. RUSSELL,

F. ALEXANDER,
 JOSHUA HAYWARD,
 CHARLES BOND,

We might fill a volume with similar high testimony of the best judges—but citizens are invited to see and judge for themselves. No lover of the chase, the sublime and beautiful, should fail to embrace the opportunity of beholding the great and instructive Wonders of Nature, especially those in our own country, which surpass all others.

COURTESY of AMERICAN ANTIQUARIAN SOCIETY
 LIBRARY
 BOSTON PLAYBILL — 1850

artist has transferred to the canvas the stupendous views he depicts," so that the pictorial representations were "very natural" and "all true to nature." Generally, the collections of the "scenery are extremely perfect and give a vivid and lasting idea of the objects they present." In particular, the gloomy, grand chambers of Mammoth Cave were represented "with wonderful accuracy" and "the illusion created by the pictures [was] admirable" and so real as to leave the feeling "that we have been wandering through the Mammoth Cave itself." The same was true for all of the other paintings; they "illustrate[d] some of the most remarkable scenes in nature"; the beholder "fancies himself standing in the very presence of these wonders and gazing at the realities instead of the pictures." The viewers were reassured by eyewitness testimonies "that the artist has been a most faithful copyist of nature," as to the "correctness of outline, faithfulness of detail, and general truth of nature." The artist always had in hand the recommendation of the proprietor of Mammoth Cave, to satisfy his critics as to the drawings. John Croghan wrote to George Brewer, that "your panorama of the Mammoth Cave I confess much surprised my expectations. The general impression has been that no one could paint a correct representation of the varied and magnificent scenes, which are witnessed in the different avenues of the cave. I am happy, however, to say that you have demonstrated that such is not the fact. Your panorama exhibits a most striking and faithful representation of the scenes which it embraces — so much so, that persons who have visited the cave would immediately recognize them."¹⁷

The second characteristic of the panoramas was that they depicted the natural world into "a series of large and beautiful paintings." The artist demonstrated his ability to paint skillfully object groupings, light and shade, by the "beauty of perspective, and the symmetry of all the figures in the different daylight scenes." Then "in regard to contrasts, shades and delicacy of coloring, some of the paintings are equal to a high order of landscape and cabinet pieces." Observers pointed out "the admirable manner in which the water is painted. The limpidity and transparency of the fluid deceive the most critical eye." In the cave scenes, the artist has transformed the splendor of the underworld that had "rested so long in darkness" into one of light and color. The crystal domes and stalagmite pillars had striking "rainbow tints." That the cave generally was "depicted with great artistic skill" and had "unequalled beauty," received confirmation from men of judgment. Dr. R. M. Bird in Philadelphia felt that "Brewer's delineation of the Mammoth Cave creates unmitigated delight," although the other "paintings are admirably done" too; here he had successfully employed the "artistic effect, to aid the imagination in comprehending the grandeur and

magnificence of the subterranean halls." "Certificates of its great merit have been given by all the best artists of Boston," Philadelphia, and other places, where the most competent authorities have vouched for the paintings, as being "works of art." Public opinion generally pronounced the works variously, as remarkable and "noted specimen of panoramic art," an extraordinary "triumph of art," a "magnificent work of art," a pre-eminent and "exquisite specimen of art" and "one of the wonders of art" in a scenic age.¹⁸

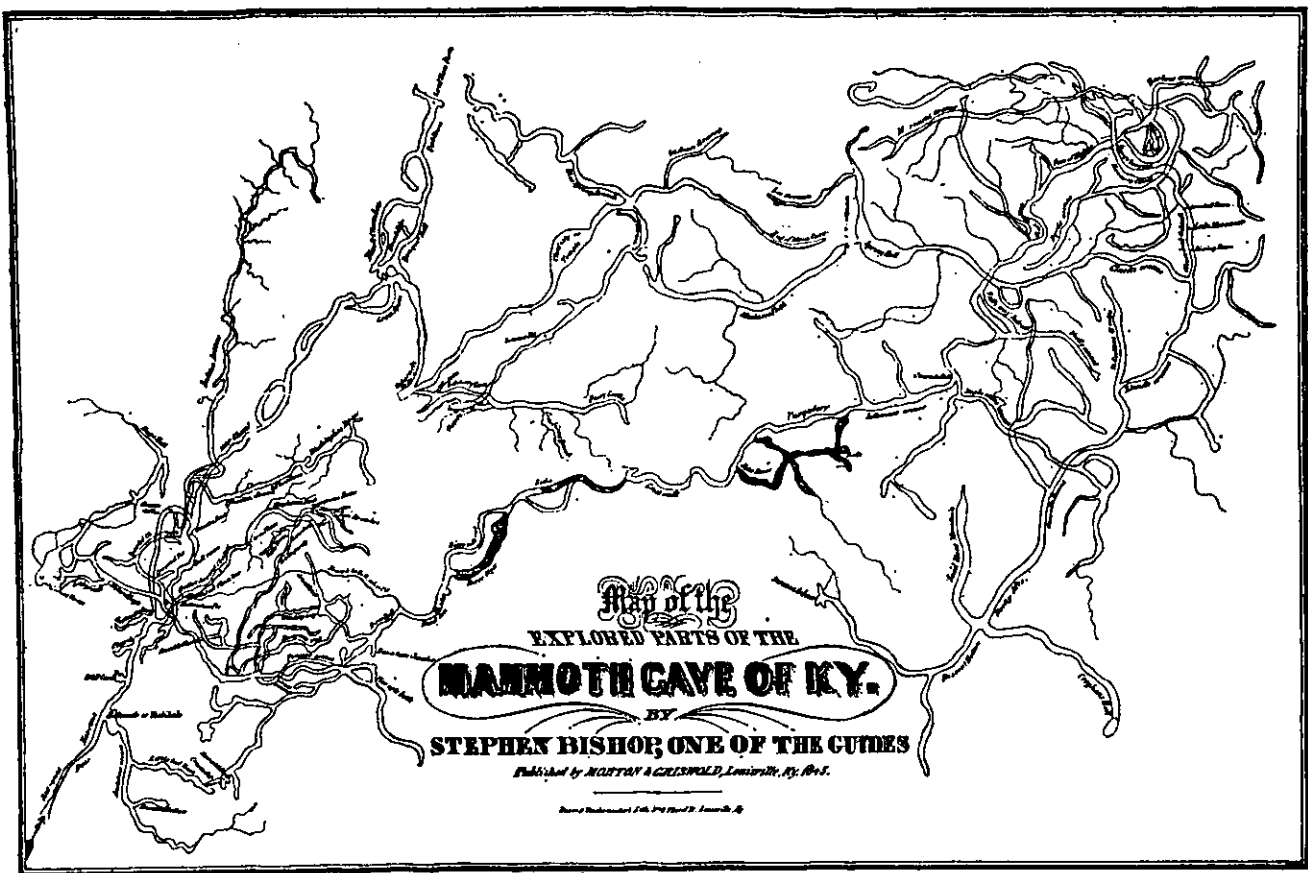
The panoramas were such a "combination of nature and art, or "faithful portraitures" and "picturesque scenery," as to evoke deep public responses. They were frequently described in the dual terms of "spirited and accurate representation," or "graphic fidelity," that "excites general admiration" of nature and "is highly interesting to the lovers of the beautiful." Sometimes there were exceptions, as when the negative attitudes appeared in England, where some critics felt if it were "viewed merely as a work of art, the panorama is not of high pretention," but they agreed that "the painting is sufficiently faithful to convey a fair idea of the places." Generally, the qualities of the paintings were favorable for the release of the viewers pleasurable emotions. The realistic cave halls, when "all brilliantly illuminated, present a scene beyond conception, awakening in the beholder the most thrilling interest." Likewise, the pictorial features were "depicted with great artistic skill," so as to "excite the admiration" of all. Even "the Genii of the Arabian Tales have been surpassed in the wild and gorgeous scenery of this subterranean world." The painting "lingers on the mind like a dream of Fairyland." The "deep underground, with its appalling darkness" and "painful sense of loneliness," is "adapted to awaken emotions of the deepest sublimity and awe." But the well lighted cave halls "present a scene beautiful beyond mere power of imagination, if unassisted by the pencil of the artist," like Brewer's work, which "create in the heart of every beholder mingled emotions of wonder, reverence and admiration." Some persons experienced deep religious feelings as they gazed at "all the gorgeous tints of the painter's skill" and were "dazzled by its sublime grandeur and impressed with awe at the mighty and wondrous workings of nature's God."¹⁹

The subjects of the main panorama were those parts of the Mammoth Cave that had been excavated out of the cavernous limestone of Kentucky; through the past geological ages, by means of the natural agencies of chemical solution and water abrasion. Most of the upper and older avenues had been discovered early in the 19th century, while in search of saltpeter. These and the later discoveries at greater depths formed "a vast labyrinth" of passages of various lengths, winding over an area of 8 or 10 miles square. Very early their "vast longitudes," or

total measurements were estimated fairly at 150 miles. The size of the avenues varied "from 20 to 100 feet in width, and from 5 to 40" in height. Single rooms have immense areas measured in acres, with "its awful depth and abyss" extending hundreds of feet down into the bowels of the earth. Those found on the five levels of the cave would be confined to 328 or 400 feet, the measured depths of the limestone excavations. Mathematicians have calculated that Mammoth Cave openings are equivalent to 12 million cubic yards of limestone. Within these inner cavities are known to be 246 avenues, 47 domes, 8 cataracts, 23 pits, 3 rivers, 2 lakes and 1 sea.²⁰

The cave constitutes "a subterranean world" in itself, that was at first considered to be "more remarkable for its extent" than for any especially beautiful parts. It was "known by the name of the Great Cave," and "called Mammoth Cave" because it was considered to be "the monarch of caves," the "most extraordinary one in the world," "perhaps unequalled" and "certainly unsurpassed." Subsequently, public attention turned toward the cave as a scenic spectacle and found "its sepulchral scenery is of surpassing variety." "In extent, in grandeur, in wild, solemn, severe, unadorned majesty—it stands entirely alone. It has no brother; it is like no brother" "so wonderfully vast is the cave, so singular its formations, and so unique its characteristics," all "the sublime and beautiful architecture of nature," and one of the great "wonders of the world."^{20a}

Brewer had transferred to canvas representative scenes of these dual viewpoints from the whole course of Mammoth Cave. He pictured the guides and tourists wandering through its "vast galleries and colossal chambers, over crooked ways and narrow defiles, now intricate and sombre, and anon spacious and overwhelming in extent." Also on the canvas "the eye and the fancy are regaled with a succession" of sensational sights — "wonderful avenues," "resplendent galleries," "magnificent chambers," "gorgeous palaces," "capacious halls," "beautiful grottos," "bottomless pits," "subterranean cataracts," "towering domes," "intricate labyrinths," "interminable passages," "receding caverns," "roaring rivers," "still lakes," high mountains, and flat plains. The artist had captured "nature's own mysterious hand at work within this gorgeous and unfathomable Laboratory! — (producing) Halls of Solid Crystal, Stupendous Arches!" — "massive pillars," "resplendent columns," with "diamond drapery," and "groves of stalactites." Some "vaulted ceilings" "seem as if the hand of the mason had aided to form them," but with others having many fantastic forms and colorful decorations studded with stary light, that inspired feelings of their Celestial origin. The artist had depicted "that wondrous work of nature . . . with all its picturesque accessories" in such ways that viewers



looked upon them as being "beautiful and wonderful beyond the power of description, or the capacity of conception." He could only exclaim "This is not the work of man."²¹

The scenes in Brewer's panorama of the Mammoth Cave, with its "windings of several hundred miles," featured the two routes taken by the guided tours, as shown on Stephen Bishop's map, namely, the main cave, or the avenues just under or closest to the ground surface level and the cave's river halls on the lowest level, or nearest to the Green River bed, of which it is an underground source or branch. The artist selected a series of scenes from "all the most interesting points" of the cave, "replete with pleasing wonders," where "everything is so stupendous and beautiful," "most wonderful and striking"—"the most sublime views imaginable." Altogether, "forty-nine distinct places are represented, and not any two of them in the least resembling each other." "Most of the places of interest" in the cave were identified and "named from some incidents in their history, or from the object or place to which they bear a real or imaginary resemblance." This "peculiar nomenclature is derived from biography, history," architecture, mythology, geology and ordinary popular folklore. Some names are from the visitor's personal experiences and feelings, while making the cave tour, resembling in this respect Paul Bunyon's characters in *Pilgrim's Progress*, which was a popular book at that time. The specific scenes of the consecutive order in which they appear on the canvas are given in three guidebooks published by the proprietors in Philadelphia, 1849, in Boston, 1850 and in London, 1851. Some of the more important scenes may have contained more than one view not distinguished separately and there are slight variations in the order for some of them in the guides.²²

Mammoth Cave, the subject of this painting, "is on the left (or south) bank of Green River, in Edmonson County, Kentucky," about 96 miles from Louisville and the same distance from Nashville, Tennessee. Visitors traveled seven miles from the railroad stop at William Bell's Tavern to reach the cave, where the first part of the panorama, with about twenty scenes in it, opens with the view of "a large and handsome *Hotel*," two stories high, 200 feet long and 45 wide, with double piazzas running its entire length. Nearby is "a long row of neat cottages built of logs." The buildings had a total capacity of lodging 150 cave visitors at one time and were furnished in an elegant style. Next is the small *Cave House*, built by Dr. Croghan, about 200 yards from the Hotel and 50 feet from the cave, as approached "down a beautiful ravine," deeply cut and shaded by "towering trees," and "graceful, pendant vines." Here the visitors dressed in their mustard-colored clothing, including the protective, stuffed skull-cap for all, and bloomers for the

ladies. They met the guides and received their swinging torches or oil lamps, water canteens, food baskets and other necessities for spending a day in the cave. They approached the old underground opening, of which there are more than one, since they are caused by a break in the top sandstone ledge and the falling-in of the cave roof. Two views of the historic *Cave Entrance* are given. One shows the front of a "huge yawning vault" or "a dark gulf," which is the brink of the pit "30 or 40 feet deep" that was originally 60 feet, but partly refilled from the debris of the cave-in. It is "overhung with rank vegetation, and dripping with moisture." Here we descend "a flight of rude stone steps" to the "precincts of this nether world." At the cave mouth are "the remains of the saltpeter works, consisting of furnaces, tubes, etc., with large mounds of ashes scattered around." Skeletons were once found here. Then comes *A Back View, Looking Out of the Cave* entrance, and featuring "a small stream of water" that "pours in a cascade from the face of the crowning rock" of sandstone on the exterior, the source of which was a sinkhole before the fall-in.²³

We proceed a half mile down the cave "narrows," measuring 7 or 8 feet wide and as many high, with a stone wall on each side and a door built by the miners to control the seasonal blast found in caves, until we reach the scene of the *Great Vestibule or Rotunda*, formed "by the collapse of large amounts of thinly layed limestone." It is 105 feet vertically downward from the ground level and just beneath the proprietor Gatewood's residence. At the intersection point of Audubon and Grand Avenues, "the great Vestibule is an immense hall," with "massive walls," 200 feet long and 150 wide. Overhead was a smooth, flat, oval sandstone rock 50 or 60 feet high, running continuously "in one majestic expanse," or "enormous vault," covering three-fourths of an acre of space, but "unsupported by a single pillar." This hall, earlier known as the First Hoppers, was the chief work room of the old saltpeter miners and still showed "large masses of nitrous earth," vats, tubes, etc. Half a mile down Grand Avenue, or the Main Cave's Broadway of today, where the walls contract to 50 feet in width and have rock piles and crags as high, are the *Kentucky Cliffs*, so named from their resemblance to the open cliffs along the Kentucky River.²⁴

Leaving the Cliffs and passing the rocky shelves into the north transept, the artist pictured a natural *Church*, with a "projecting rock" as the pulpit, behind which is "a ledge or gallery" for the organ and full choir and with a place for the congregation, some 300 feet in circumference and sufficiently large to seat thousands of people. Its lofty ceiling 63 feet high, afforded fine acoustical qualities. Interesting "religious meetings have several times been held here" in a well-lighted hall and also some concerts, "with singularly fine effects" owing to the

reverberations. After passing the Church, we have a panoramic view of a sharp turn called the *Acute Angle*, where Grand and Gothic Galleries crossed, the latter having ornamental elements resembling historic Gothic architecture. This avenue, also known as Haunted Chamber, is elevated some 25 feet above the Main Cave line and measured 50 feet wide, 15 high, and two miles in length. Two human skeletons were once discovered in this area. Near here are located the Second Hoppers of the Main Cave, with their old rocky walls, lye tubes, mounds of niter earth, and early ox-cart tracks still visible.²⁵

We proceed along the transverse Gothic Avenue for a half dozen other scenes. In this area we find the old *Salt Room*, a "small, low branch," where "the walls and ceilings are covered with salts and crystals" that fell upon the floor in places where the early miners had sacked great quantities of saltpeter to convey it to the hoppers on Grand Avenue. Here are also some old "Indian houses" under rocks, "which contain ashes and canes partly burnt." Then there are the old and new *Register Rooms*, the favorite spots where visitors "traced, with the smoke of candles, thousands of names," upon the low, flat, smooth ceiling of calcareous whiteness. Next the artist depicts the "overwhelming grandeur" of *Stalactite Hall*, called *Gothic Chapel* because of its resemblance to European cathedrals. The hall "is elliptical in shape and 80 feet long by 50 wide." Stalagmite columns of vast size nearly block up the two ends, while "there are two rows of smaller pillars" of stalactites hanging from the ceiling on each side near the wall. Torch lights in Gothic Chapel bring out the glittering, "resplendent beauties," that "awaken emotions of profound solemnity and awe." Later it became a novel bridal altar for adventurous couples. It was near this chapel that Brewer had set up his studio for sketching the cave. A little way down Gothic Avenue, the panorama shows the *Devil's Arm Chair*, formerly named after Wilkins the cave owner, produced by a massive stalactite meeting with "a large stalagmite column, in the center of which is formed a capacious seat." Nearby on the floor is a natural but dry basin formed by past drippings of sulphur water. Visitors often rested in this gigantic seat, popularly assigned to His Majesty of the Underworld, but when the Swedish Nightingale occupied it on her western tour in 1851, the name was changed to Jenny Lind's Arm Chair. The last scene on Gothic Avenue was *Lover's Leap*, "a large, prominent rock, tapering to a point, which projects over a dark and dismal hollow," or rotunda 30 feet deep.²⁶

Returning to Grand Avenue, the remaining panoramic scenes are the finest and most popular of the upper or Main Cave. About 400 yards from Acute Angle is the *Giant's Coffin*, formerly called the Steamboat, which is "a huge rock of symmetrical shape, 36 feet long and 20 high,

lying prone on the floor," and in the shape of a coffin weighing 2000 tons. It is located near the right wall, where it fell by its own weight in past ages. It was a "most important landmark" in the whole cave, for the small crevice behind it is "the entrance to the Deserted Chambers" and "the only access to the subterranean rivers" on the lower levels. The passage here is 80 feet high and 100 feet wide, encrusted overhead with "a very curious formation." The surface is "discolored with large black spots" of various shapes, that personal fancy identifies variously, as "birds, or beasts, or creeping things" on the earth above, an ant-eater being specified. Leaving Giant Coffin, the pictorial route turns sharply to the left on the Great Bend and "we pass three desolate and deserted cottages," built of stone in 1843 by Dr. Croghan as an experimental hospital for consumptive cases.²⁷

Near the cottages is the spectacular *Star Chamber*, "one of the most sublime and beautiful objects in the cave," that all visitors wanted to see and always remembered. Here the passage expands over a rocky floor, and "its walls and roof are thickly covered with elegant crystals of transparent gypsum. The high dome is encrusted with a vast number of these, and [in] the exact appearance of the glorious firmament, studded with innumerable stars." The flat surface of the ceiling is discolored "by the damp, or black moss, interrupted occasionally by points of rock projecting from the moss and from their lighter color reflecting the light of the candles." The illusion was advanced further by the side walls that "shot up nearly 70 feet perpendicularly, and then stretched suddenly back horizontally, leaving a ledge between them and the roof" by which the cave "appears to have an opening in the ceiling" and floating as under an open sky. The walls were white or yellow and the roof dark blue from the effects of candle light, that increased the resemblance to a night sky. Similarly were formed "large white patches upon a black ground" called *Floating Clouds*, where "you see far beyond in the dark sky, the moon and stars gliding slowly and majestically through the broken clouds." Emerson felt "the best thing which the cave had to offer" was the Star Chamber, "where clouds in a phantom sky are rolled, illumined by ghostly galaxies."²⁸

Leaving the Star Chamber, we go around a loop southward to *The Cataracts*, where two small silvery streams from barrel-size holes in the roof enter rocky pits 25 feet deep, thus disturbing the gloom and silence of the cave by a thunderous noise that shakes the side walls. Moving again northeast along a branch exceedingly uneven, we reach the *Chief City or Temple*, "covered by a single dome of solid (sandstone) rock" 300 or 400 feet long, that rises 120 feet high in "one unbroken arch span," covering "an area of two acres." The vastness of "the unsupported roof," twice the size of the Great Vestibule Rotunda, created a

singular illusion of the sky bowl outside by "the moving appearance of the dome" as visitors walked under it. This was the place of another roof cave-in of great rocks, "thrown in the wildest confusion." "In the middle of the dome there is an immense mass of rock, rising, on one side, near to the top, very steep, and forming what is called 'The Mountain'." The illumination of this vast, dark, and silent subterranean dome and mountain gave observers deep, intense "feelings of awe" not previously known.²⁰

Returning to the Cataracts, we go southward to the *Solitary Cave* and witness "its groves of spar, its pools and springs" of recent discovery. This cave was famous for its stalactites, described as "out of the world." Before the discovery of River Hall on a lower avenue, this cave's Long Pond was "the largest body of water" known in Mammoth Cave, "measuring 40 feet long, 15 wide and 2 deep." We move southward again in a difficult passage to *Fairy Grotto*, in which some of its million-year-old formations were being damaged by the vandalism of visitors and souvenir hunters. This underworld fairyland had "a countless number of stalactites . . . extending, at irregular distances, from the roof to the floor, of varying sizes and of the most fantastic shapes — some quite straight, some crooked, some large and hollow — forming irregularly fluted columns; and some solid near the ceiling and divided lower down into a great number of small branches, like the roots of trees, exhibiting the appearance of a coral grove." By hanging lamps to the column's incrustations, "the Grove of Stalactites become faintly lighted up, disclosing a scene of extraordinary wildness and beauty." In Brewer's special *Tableaux of the Fairies' Grotto*, "Stephen [Bishop] the guide, and the visitors to the cave are represented with lighted torches (real fire), in their hands," who "appear at intervals among the parti-colored stalactites and vast arches, the whole sparkling and radiating with the most intense brilliancy, and forming a scene of unsurpassed beauty and magnificence." This scene was a fitting climax for both the main cave paintings and the whole panorama.²⁰

The second part of the panorama covered the long route in the cave along the lower river passages, that "mostly communicate with one another, and are probably but ramifications of one great fissure" in the cavernous limestone, starting "through the crevice (in the wall) behind the Giant's Coffin." There are about thirteen scenes depicted here. The first one is of the *Labyrinth*, 300 yards from the Coffin and entered by climbing down a ladder 15 feet to a circuitous, "narrow pass not more than 5 feet wide" that is "exceedingly rugged and tortuous" and "descends rapidly" with "flights of steps." Then we come to the *Deserted Chambers*, one of the "deep chasms which are numerous about this part of the cave" as inlets to the rivers below. The Labyrinth

north of the Main Cave "conducts you to one of the chief glories of the cave, *Gorin's Dome*," a "startling abyss" named after the former owner. The dome, with a stream entering from the top, "is of solid rock, with sides apparently fluted and polished, and perhaps 200 feet high." Under it is "a chasm some 20 or 30 feet wide," with a ladder extending to the bottom. The path around a narrow gallery midway on the outside of the dome leads to small openings that afford good interior views. By the use of Bengal lights a grand spectacle is seen in which "the vast dome is radiant with light."³¹

The other end of the Labyrinth "leads to the *Bottomless Pit*" and the Deserted Chambers that have more water cascades and pits "than in any other portion of the cave." They "present features extremely wild, terrific and multiform." It was an immense "chasm of 20 feet wide" and estimated "near 200 feet deep," but the engineer Edmund Lee found "the depth was 173 feet" by measurement. It was bridged over by the cave management in 1838 to make new discoveries and extend the visitor's tours. The pit opening "is somewhat in the shape of a horseshoe, having a tongue of land . . . running out into the middle of it." Across the bridge are "rocks of the most gigantic size, lying along the edge of the pit" and "above the pit is a dome of great size," from which enters a stream of water. "The Big Dome is 40 or 50 feet in diameter, and so high that its top cannot be seen," being partly obscured by its position and the suspension of a huge rock weighing 150 tons. This Bottomless Pit, that was surrounded "by darkness and terror" and "an interminable void," seemingly extended "nearly through the whole diameter of the earth." It was only slightly visible by torch or medicated paper, so the guides and tourists demonstrated its unseen depth by the long-lingering sounds of falling stones that strike successively on its downward, winding, rocky ledges and after finally reaching the water, produces successive rippling waves against the side walls to prolong the sounds and give the illusion of still greater depth.³²

The gloomy Deserted Chambers "is the point at which the water left the Main Cave to reach Echo River after it ceased to flow out of the mouth" directly into Green River. The Bottomless Pit formed the new direct passage to the cave rivers, but there was a second and more picturesque route that the artist painted. First there is *Humble Chute*, also called *Valley of Humiliation*, a branch from the Cataracts and Solitary Cave. It is "a small archway so low and narrow" for 40 feet in length that "we must crawl on our hands and knees some 15 or 20 feet under a low arch." This is followed "for several hundred yards, descending all the while," until we arrive at the *Winding Way* or *Fatman's Misery*, a very "narrow passage which leads to the river." It is "105 feet long, 18 inches wide, and from 3 to 7 feet deep, widening-

out above sufficiently to admit the free use of one's arms. It is throughout tortuous, a perfect zig-zag" and a real terror to stout men and "the ladies 'fat, fair and forty'," all of whom "entered in Indian file." Winding Way leads to *Great Relief Hall*, that "is very wide and lofty but not long," and in which relief is experienced by resuming the normal posture. Then another passage of 100 yards leads to *River Hall*, that "descends like the slope of a mountain; the ceiling stretches away before you — vast and grand as the firmament at midnight." It shows evidence of being overflowed by water frequently in the past, by the presence of "peculiar cornice-shaped forms." The geological record of River Hall is there before you — "sublime in its every feature." The hall leads in two directions — one to Bacon Chamber, the other to the rivers.³³

Leaving River Hall by a ledge we reach "a steep precipice over which you can look down, by the aid of blazing missles, upon a broad, black sheet of water 80 feet below called the *Dead Sea*." This is "a quiet pool of fresh water, more than 100 feet long," an "awfully impressive place," giving observers an indelible memory of a scene at once "dark, lurid and terrific, as the throat of the infernal pool." "Descending from the eminence by a ladder" 20 feet in length, the visitors are "among piles of gigantic rocks" that make a picturesque scene, winding over and around the ridges until you reach the brink of *Styx River*. This river, smallest of those in the cave, is between 100 and 200 yards in length and 30 or 40 feet wide normally, but varies during freshets that leave turbid water, muddy silt and sand on the shores. It is navigated in small boats-lighted by lamps, and taking four passengers at one time who only see the dimly glittering stream "flowing out of darkness to darkness." The panoramic view is of the "Natural Bridge," under which "the River 'Styx' lies before you, deep and black, overarched with rocks." This "dangerous bridge of precipices overhead" is in the form of "a cave about 300 yards long" and 80 feet over the "fabled shores of the Styx" River, affording a commanding view below of the "strangely funereal and spectral" objects and the ghostly echoes of the boating parties. Proceeding onward, "you walk over a pile of large rocks extremely steep and so slippery" it was hard to descend, and enter similarly "a lofty and spacious hall" to the banks of "the placid waters of *Lake Lethe*," or *Lake Oblivion*. Looking back you see another party "descending the high hill from the cave which runs over the River Styx." You descend and boat on the "dark tides of Lethe," which extends "about a quarter of a mile, the ceiling for the entire distance being very high — certainly no less than 50 feet." Next you "enter a level and lofty hall, called the *Great Walk*, which stretches to the banks of the Echo (River), a distance of 300 or 400 yards." It has "a floor of fine yellow sand five feet above low-water mark."³⁴

"After two or three embarkations we reach the last stream," the famous *Echo River*, presently measured at 360 feet below the surface level. It is the "most interesting and marvellous of all the rivers in the Cave." This "river is three quarters of a mile long," and navigated under three arches, each successively higher. The point of launching the boat, with its capacity of twelve people, is under a very low arch, "not more than three feet in an ordinary stage of water." After two boat length, "the vault of the Cave is lofty and wide," running from "20 to 200 feet between its precipitous walls" and "deep enough, at all times, to float a steamer of the largest class," its regular "placid or still" level being "about 20 feet deep." The trip on the boat, with "rows of lamps . . . arranged on both sides," was one of intense interest. "The deep solemnity, the novelty, the grandeur of the scene, presented under the glare of numerous torches," impressed "the most stolid and unromantic mind." The "magnificence of everything around elicited unbounded admiration and wonder." Observers felt the panoramic "view of Echo River is one on which we could gaze for hours and still turn to gaze again."³⁵

Echo River had fascinations that overshadowed the upper main cave scenery and attracted the most visitors. Its eyeless fish were world famous. "Myriads of cavities, varying from a few inches to many feet in diameter, occur in the enclosing walls" of the hall, and tend to cause the successive reverberations and echoes that were so outstanding as to give the river its name. The rippling waves of water from boating parties are "heard afar off, beating under the low arches and in the cavities of the rocks." A whisper "is magnified into a loud, hissing sound." One person singing is like a large choir performing. A yell is deafening and a pistol shot like a cannon. Echo River is important, because it is on the fifth and lowest level of the cave, which finally connects up with Green River on the surface. "A rise of the water of merely a few feet connects the three rivers" of the cave into one stream about two miles long. After heavy rains "these rivers sometimes rise to a perpendicular height of more than 50 feet," due to the volume of inflow from and obstructions of outflow to rising Green River. At high water mark super caves are dug-out above and around the others, like Purgatory and Styx Bridge over which we passed. Echo River leads to another basin known as Roaring River, a later discovery that is only 15 or 20 feet wide, a foot deep and is known to be the immediate connecting link with Green River.³⁶

Beyond the cave rivers and toward the upper dry cave levels again, the panorama featured the far side of the main cave in some fifteen scenes. It was a "little less extensive and more abundant in objects of beauty than the near side." "Its greatest attraction" was (Parker)

Cleaveland's Avenue, named after the early geologist at Yale University, and which is about "3 miles long, 70 feet wide and 12 or 15 high." It was "the crowning wonder and glory of this subterranean world," "abounding in formations" so "rich and gorgeous" and rare that natural scientists collected specimens here for their cabinets in America and Europe. There was a scene of (Benjamin) *Silliman Avenue*, named after the Bowdoin College mineralogist, leading to the lower end of Cleaveland's Avenue, near which is the man-made Carmichael Entrance of today. Then is presented a view of the *Rocky Mountains*, consisting of "enormous masses of rock" 30 or 40 feet across and piled in a great cavern with a dome 100 feet high.³⁷

At the end of a Cleaveland's Avenue branch, is shown *Croghan's Hall*, semi-circular in shape, over 50 feet in diameter and 35 feet high. It contains "an abundance of massive and beautiful stalactites [and stalagmites] of brilliant colors, semi-transparent and resembling sheets of ice." On one side "a romantic cascade comes pouring down from the roof," which was rough, irregular, "deep, dark and terrible," and enters a plunging pit, known in 1859 as the *Maelstrom*, which is 20 feet in diameter and 175 feet deep. "A merry party are here seen upon the picture engaged in dancing." They were "furnished with light by their flaming torches, and supplied with music by their own voices, accompanied with the sound of the falling waters," in which "they have engaged with spirit." Down in the pit can be seen the "entrances to various galleries," at different depths and directions. By descending gradually for 60 feet, "you reach the *City of the Tombs*," covering several acres and probably the largest in the cave, which is "covered by an immense dome." Projecting from the floor "are numerous masses of rock" like tombstones, the "Cemetery of the Cave." Also the *Holy Sepulchre* was reported in a small chapel 12 feet square. A mile up Cleaveland's Avenue is pictured a left branch called *St. Cecelia's Grotto*. It is ornamented with graceful stalagmite columns pointed at the summit and "encrusted throughout, with a white substance resembling snow," that reflects the light of the torches and "produces a beautiful and very striking effect."³⁸

Proceeding up the Great Western Way and along the narrow, tortuous *Pass of El Ghor*, we climb a ladder to reach "the commencement of Cleaveland's Avenue." The first scene is *Mary's Vineyard*, having "peculiar formations" and "immense vineyards," that made it an "exquisite portion of the cave." The observer is "surrounded by overhanging stalactites," like a "giant vine" with "enchanted festoons," "assuming the precise form of grapes in rich and abundant clusters. They are hard almost as flint, round, and polished as if done by art" of the sculptor's hand. Next appears the *Snow Ball Room*, 200 feet long,

which, under torch lights, afforded a scene of "nature's frolic" in wintertime, "by throwing a thousand snow-balls against the roof" and an equal number scattered on the floor, then all being petrified. These crystallizations, or gypsum blisters, were a "combination of sulphates of lime and of magnesia," that all appeared "peculiarly beautiful and unique." Snow Ball Room today is a lunch room for visitors, with their food being lowered in a 247-foot elevator.³⁹

The artist then painted upon canvas the "gorgeous scenery" of *Cleaveland's Cabinet*, a discovery of 1841, that some visitors felt to be "the most splendid feature" of the cave, because here were "richly stored cabinets all radiantly illuminated." It is probably a mile and a half long, with a 50-foot span and a height of 10 feet, which was filled with a profusion of cabinet exhibits. The picture portrayed "the fantastic variety, the extreme delicacy, and the unparalleled beauty of the formations," "with vines, flowers, fruits, gems, and various singular architectural ornaments arranged in the greatest profusion and gorgeousness." Its "curled leafed stone" resembled various objects—sun-flowers, celery, roses, vanilla candy, Corinthian columns, lilies, shells, etc. The formations were taking place before the visitor's eye, on the cave ceiling, walls and in the side grottos. "Some of the incrustations are massive and splendid"; others are delicate; and there are "hundreds of tons of these gems" of nature that reflected the torch-lights near the Cabinets in ways delightful to see. *Cleaveland's Cabinet* was profuse and rich in color. The various parts "were resplendent in yellows, blues, pale greens and a whole gamut of whites, all shot through with diamond frets."⁴⁰

The panorama of Mammoth Cave ends with three scenes that were overwhelming in the emotional glow afforded visitors. They are located in various places. One is called Paradise, that featured what the height of the imagination can conceive of "as rich, beautiful and gorgeous," and otherwise "remarkable for the imposing grandeur of its appearance." It is one of the halls of *Cleaveland's Cabinet*, "the Elysium of Mammoth Cave." The next scene is of *Serena's Arbor*, located on a lower branch of *Cleaveland's Avenue*, with its "singular beauty of appearance." The Arbor "is of a circular form," 12 feet in diameter and the same height, but is of itself—floor, sides, roof and ornaments—"one perfect seamless stalactite, of a beautiful hue and exquisite workmanship," as in marble, and when struck becomes the "doleful Harp" of the cave. The petrified forms "hang like drapery around the sides," and just opposite the door "a canopy of stone projects, elegantly ornamented," resembling "the Mermaid's submarine palace." Visitors felt that Queen "Victoria, with all her splendor, has not in Windsor Castle so beautiful an apartment as *Serena's Arbor*," and nature was

still at work ornamenting it. The scene of *Fairy Grotto*, that climaxed the upper main cave, was sometimes the final scene of the whole Mammoth Cave panorama. It portrayed "a scene of magic and unearthly splendor; wild as the creation of a poem's fancy, and beautiful as the love dreams of youth."⁴¹

To Be Continued

FOOTNOTES

¹ Providence (R.I.) *Journal*, March 26, 27, April 2, 1852; (George Brewer), *A Description of the Mammoth Cave of Kentucky, Niagara River and Falls... to Illustrate Brewer's Panorama* (Boston, 1850) p. 4. Referred to hereafter as Boston Guide.

² Toronto (Ontario), *Globe*, June 5, 6, 1850; St. Louis *Missouri Republican*, December 28, 1852; George C. Groce and David H. Wallace, *The New York Historical Society's Dictionary of Artists in America* (New Haven, 1957), p. 79; Gabriel Collins, *Louisville and New Albany Directory* (Louisville, 1848), p. 27; Bellefontaine Cemetery Association, letter of O. E. Maack to writer, dated St. Louis, Missouri, August 21, 1962; Toronto Public Library, letter of Edith G. Firth, dated Toronto, Ontario, October 30, 1962. The initials of George Brewer have been given also as G.F.B. and G.F.P.B., in the press, but the full name in the text comes from the U.S. Census of 1850 (XI, p. 347, lines 2-6), city directory and obituary.

³ Louisville *Courier*, July 28, 1848; Horace C. Hovey, *Mammoth Cave of Kentucky* (Louisville, 1912), pp. 15-19; Fall River (Mass.), *News*, November 13, 1851.

⁴ *The American Magazine* (Phila.), May 1837; Edmund F. Lee, *Notes on the Mammoth Cave* (Cincinnati, 1835), p. 8; copy in New York Public Library; R. Ellsworth Call, "The Evolution of the Map of Mammoth Cave," in *Proceedings of Indiana Academy of Science* (Indianapolis, 1896), p. 50.

⁵ W. Stump Forwood, *An Historical and Descriptive Narrative of the Mammoth Cave of Kentucky* (Phila., 1870), pp. 23, 24; Margaret M. Bridwell, *The Story of Mammoth Cave National Park* (Louisville, 1963), pp. 17, 24, 25.

⁶ Horace C. Hovey, *Celebrated American Caverns* (Cincinnati, 1882), pp. 58, 59; Robert Davidson, *An Excursion to Mammoth Cave* (Phila., 1840), p. 64.

⁷ John Hayward, *Gazeteer of the United States of America* (Phila., c1851), p. 650; Carlton H. Rogers, *Incidents of Travel to the Southern States and Cuba* (New York, 1862), p. 83.

⁸ *American Magazine*, June 1837.

⁹ R. M. Bird, *Peter Pilgrim, or a Rambler's Recollections* (Phila., 1838), II, p. 84; Hayward, *Gazeteer of U. S.*, p. 650; Boston Guide, p. 4.

¹⁰ (George Brewer), *A Description of Mammoth Cave...* (Phila., 1849), p. 16, referred to hereafter as Philadelphia Guide; Bird, *Peter Pilgrim*, II, p. 86; Horace Martin, *Pictorial Guide to Mammoth Cave* (New York, 1851), p. 34; (John Croghan), *Rambles in the Mammoth Cave* (Louisville, 1845), p. 39; Rogers, *Incidents of Travel*, p. 283.

¹¹ *American Magazine*, May, 1837; Bird, *Peter Pilgrim*, II, p. 89.

¹² Hayward, *Gazeteer of U.S.*, p. 650; Brewer's Panorama of the Wonders... of the American Continent, Amory Hall (Boston, 1850), referred to hereafter as Boston Playbill; *The Queen, the Lady's Newspaper* (London) May 24, 1851; Philadelphia Guide, p. 15; Boston Guide, p. 21.

¹³ Boston Guide, pp. 4, 5; Boston Playbill; Hayward, *Gazeteer of U.S.*, p. 650; Philadelphia Guide, p. 16; New Orleans *Picayune*, February 15, 1850; Providence *Journal*, March 29, 1852; Boston *Transcript*, October 23, December 20, 1850, February 3, 1851; Howorth's Great National Panorama of the Wonders of the World, in Mechanic's Hall, Providence, R. I., May 11, 1852, clipping in Houghton Library, Harvard University, referred to hereafter as Providence Playbill.

^{14a} Joseph Earl Arrington, "John Banvard's Moving Panorama of the Mississippi, Missouri and Ohio Rivers," *The Filson Club History Quarterly*, Vol. 32, No. 3, p. 207.

¹⁴ Boston Guide, p. 4; Providence Playbill; Providence Journal, March 26, 1852.

^{14a} Boston Transcript, April 1, 1851; St. Louis, Missouri Republican, April 3, 1850; Rochester American, May 18, 1850; Louisville Courier, July 13, 19, 28, 1848; Louisville Democrat, July 19, 1848.

¹⁵ Boston Transcript, August 20, September 17, 1850, February 7, 1851; Cincinnati Gazette, September 4, 1848, April 22, 1850; Washington, D.C., National Intelligencer, November 6, 1849; Philadelphia Public Ledger, June 18, 22, July 26, 1849; Louisville Democrat November 9, 1848; Columbus Ohio State Journal, October 3, 1848; New Orleans Picayune, February 2, 14, 1850; Louisville Courier, November 9, 1848; Charleston, South Carolina, Mercury, December 13, 1849.

¹⁶ Boston Playbill; Providence Journal, March 29, 31, May 8, 1852; Providence Playbill.

¹⁷ New Orleans Picayune, February 5, 13, 15, 1850; Detroit Free Press, October 18, 1848; Boston Transcript, March 17, 1851; Toronto Examiner, June 5, 1850; Washington, D.C., National Intelligencer, November 16, 1849; Columbus, Ohio State Journal, October 4, 1848; Cincinnati Gazette, September 1, 1848; Philadelphia Guide p. 15; Fall River (Mass.) News, November 13, 1851.

¹⁸ New Orleans Picayune, February 1, 2, 13, 1850; Boston Transcript, October 23, 1850, February 3, 1851; Philadelphia Public Ledger, September 10, 1849; Washington, D.C. National Intelligencer, November 5, 9, 1849; Columbus, Ohio State Journal, October 3, 1848; Louisville Democrat, July 19, 1848; St. Louis, Missouri Republican, April 3, 1850; Charleston Mercury, December 3, 10, 1849; Montreal Gazette, June 25, 1850; Portsmouth, N. H. Journal, January 10, 1852.

¹⁹ Baltimore Sun, March 24, 1849; New Orleans Picayune, January 14, February 1, 5, 1850; Cincinnati Gazette, September 19, 1848; New Bedford, Mass., Mercury, October 25, 1851; The Queen, May 24, 1851; Philadelphia Public Ledger, September 10, 1849; Boston Transcript, December 18, 1850; Boston Playbill; Portland, Me. Advertiser, November 21, 1854; Boston Guide, p. 4; Providence Playbill.

²⁰ Peterson's Magazine (Phila.), October 1852; Helen F. Randolph, *The Mammoth Cave and the Cave Region of Kentucky* (Louisville, 1924) p. 68; St. Louis, Missouri Republican April 3, 1850.

^{20a} Martin, *Pictorial Guide*, p. 19; Toronto Examiner, June 5, 1850; Reuben G. Thwaites, Editor, *Early Western Travels* (Cleveland, 1904) IX, p. 281; Francis Lieber, *Americana* . . . (Phila., 1831), VIII, p. 237; Dana E., *Geographical Sketches of the Western Country* (Cincinnati, 1919), p. 90; *American Magazine*, May 1837; Croghan, *Rambles in Mammoth Cave*, p. 12; Lee, *Notes on Mammoth Cave*, p. 3; Charleston Courier, December 1, 13, 1848.

²¹ Toronto Patriot, June 6, 1850; N. B. Mercury, October 20, 23, 1851; New Orleans Picayune, February 2, 15, 1850; Providence Playbill, Cincinnati Gazette, April 16, 23, 1850; Wash. National Intelligencer, November 16, 1849; Boston Playbill; St. Louis, Missouri Republican, April 3, 1850; Lee, *Notes on Mammoth Cave*, pp. 3, 7; Charleston Courier, December 13, 1848.

²² Rogers, *Incidents of Travel*, pp. 283, 296; Boston Playbill; Philadelphia Guide, p. 1, Rochester American, May 27, 1850; Fall River News, November 13, 1851.

²³ Philadelphia Guide, p. 1; Boston Guide, p. 18; *Fraser's Magazine*, October 1850, pp. 388, 389; Croghan, *Rambles in Mammoth Cave*, p. 11; Martin, *Pictorial Guide*, p. 19; Lee, *Notes on Mammoth Cave*, pp. 9, 10.

²⁴ *American Magazine*, June 1837; *Fraser's Magazine*, October 1850, p. 389; Boston Guide, p. 19; Philadelphia Guide, p. 2; Lee, *Notes on Mammoth Cave*, p. 12; Ann Livesay-Preston McGrain, *Geology of Mammoth Cave National Park* (Lexington, 1962) p. 33.

²⁵ *Fraser's Magazine*, October 1850, p. 389; Boston Guide, p. 20; Lee, *Notes on Mammoth Cave*, p. 12.

²⁶ Boston Guide, p. 21; Cincinnati Gazette, April 29, 1850; Croghan, *Rambles in Mammoth Cave*, pp. 38, 39; Martin, *Pictorial Guide*, pp. 35, 36; Lee, *Notes on Mammoth Cave*, pp. 14, 18, 19.

²⁷ *Fraser's Magazine*, October 1850, p. 390; Boston Guide, p. 22; Croghan, *Rambles in Mammoth Cave*, p. 45; Davidson, *Excursions to Mammoth Cave*, p. 60; Lee, *Notes on Mammoth Cave*, p. 13.

²⁸ Philadelphia Guide, p. 3; Davidson, *Excursions to Mammoth Cave*, p. 61; *The Knickerbocker Magazine*, April 1849; Robert H. Schauffer, *Romantic America* (N.Y., 1913), p. 117; Lee, *Notes on Mammoth Cave*, p. 13; *Fraser's Magazine*, October 1850.

²⁹ Boston Guide, p. 22; *Fraser's Magazine*, October 1850, p. 391; A. D. Bickerd, *Pictorial Guide to Mammoth Cave, Kentucky* (Cincinnati, 1888), p. 99; Philadelphia Guide, pp. 3, 4; Croghan, *Rambles in Mammoth Cave*, pp. 55-57; Lee, *Notes on Mammoth Cave*, pp. 14, 15; Martin, *Pictorial Guide*, pp. 45, 46.

³⁰ *American Magazine*, May 1837; Philadelphia Guide, p. 4; Croghan, *Rambles in Mammoth Cave*, pp. 54, 55; N. B. *Mercury*, October 22, 1851; Boston *Transcript*, September 17, 1850; Lee, *Notes on Mammoth Cave*, p. 7.

³¹ *Fraser's Magazine*, October 1850, pp. 390, 392; Philadelphia Guide, p. 4; Croghan, *Rambles in Mammoth Cave*, pp. 61, 62; *Knickerbocker*, April 1849; Boston Guide, p. 23.

³² Croghan, *Rambles in Mammoth Cave*, pp. 60, 61, 64-65; Bird, *Peter Pilgrim*, II, p. 125; Lee, *Notes on Mammoth Cave*, pp. 5, 21.

³³ Forwood, *Mammoth Cave of Kentucky*, p. 64; Croghan, *Rambles in Mammoth Cave*, pp. 53, 71, 72, 79; Philadelphia Guide, p. 5; Binkerd, *Pictorial Guide*, p. 92; Martin, *Pictorial Guide*, p. 58; Boston Guide, p. 24; Lee, *Notes on Mammoth Cave*, p. 24.

³⁴ Boston Guide, pp. 27, 28; *Journal of the American Museum of Natural History* (New York) March-April 1928, XXVIII, pp. 135-136; Providence Playbill; Croghan, *Rambles in Mammoth Cave*, pp. 79, 80, 81-3; *Fraser's Magazine*, October 1850; pp. 394, 395; Philadelphia Guide, p. 5; Lewis Collins, *Historical Sketches of Kentucky* (Cincinnati, 1847) p. 261.

³⁵ Boston Guide, pp. 28, 29; *Fraser's Magazine*, October 1850, p. 396; *Knickerbocker*, April 1849; New Orleans *Picayune*, February 7, 1850; Collins, *Sketches of Kentucky*, p. 261; Philadelphia Guide, p. 6; *Journal of American Museum of Natural History*, March-April 1928; Croghan, *Rambles in Mammoth Cave*, pp. 83, 84.

³⁶ Boston Guide, pp. 28, 29; Croghan, *Rambles in Mammoth Cave*, p. 57; Philadelphia Guide, p. 6; William P. Hay, "Observations on the Crustaceous Fauna of the Region about Mammoth Cave, Kentucky," in *Smithsonian Institution, Proceedings of U. S. National Museum*, XXV, Bull. No. 109 (Wash., 1903), pp. 223, 224; *Journal of American Museum of Natural History*, March-April 1928, p. 136.

³⁷ *Fraser's Magazine*, October 1850, p. 396; Collins, *Sketches of Kentucky*, p. 261; Croghan, *Rambles in Mammoth Cave*, p. 89; Philadelphia Guide, p. 6; Boston Guide, p. 31.

³⁸ Randolph, *Mammoth Cave and Cave Region*, p. 77; Boston Guide, pp. 30, 31; Binkerd, *Pictorial Guide*, p. 104; Philadelphia Guide, pp. 6, 7.

³⁹ Collins, *Sketches of Kentucky*, p. 261; Philadelphia Guide, p. 7; Cincinnati *Gazette*, April 29, 1850; *Knickerbocker*, April 1849; Boston Guide, pp. 31, 32; Charleston *Courier* December 13, 1849.

⁴⁰ Boston Guide, pp. 31, 32; Philadelphia Guide, p. 7; Schaffer, *Romantic America*, p. 128; Charleston *Courier*, December 13, 1849; Croghan, *Rambles in Mammoth Cave*, pp. 91-93.

⁴¹ Boston Guide, pp. 32, 33; Croghan, *Rambles in Mammoth Cave*, p. 88; Philadelphia Guide, p. 8; Binkerd, *Pictorial Guide*, p. 103; *Knickerbocker*, April 1849; Providence *Journal* March 29, 1852.