



CARLSBAD CAVERNS

NATIONAL PARK *New Mexico*

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HISTORIC EVENTS

- 1858 The route of the Butterfield Overland Mail passed not far from the cave.
- 1862 Cattlemen and goat herders are reported to have discovered the caverns about this time.
- 1901 Jim White, a cowboy, is said to have made the first exploration of the caverns. In the following years he and others continued their explorations.
- 1923 October 25. Established a national monument by Presidential proclamation.
- 1924 Dr. Willis T. Lee led a National Geographic Society expedition into the caverns, finding many new tunnels and rooms. At the close of his expedition 22 miles of the caverns had been explored.
- 1930 Act of Congress, approved May 14, made the area a national park.
- 1932 Two high-speed passenger elevators installed into the caverns for convenience of visitors.
- 1933 By Presidential proclamation the area of the park was increased from a little more than 700 acres to 10,080.
- 1939 Park extended to 49,568.44 acres by Presidential proclamation.
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United States Department of the Interior

J. A. KRUG, *Secretary*

NATIONAL PARK SERVICE, NEWTON B. DRURY, *Director*

Carlsbad Caverns

NATIONAL PARK • NEW MEXICO

OPEN ALL YEAR

CARLSBAD CAVERNS, one of the superb areas included in the National Park System owned by the people of the United States and administered by the National Park Service of the Department of the Interior, is a series of connected caverns of unusual magnificence and extent. These caverns are located in southeastern New Mexico, in the rugged foothills of the Guadalupe Mountains. The region is picturesque semidesert country, and its vegetation is of interest to many visitors.

On October 25, 1923, the Carlsbad Cave National Monument was established by Presidential proclamation. Later, by act of Congress approved May 14, 1930, the area became the Carlsbad Caverns National Park. It is one of a group of 27 areas in the National Park System known simply as national parks, usually of considerable extent and generally possessing outstanding scenery and wilderness character.

Formation of the Caverns

Carlsbad Caverns are openings made by underground water in two massive rock formations known as the Carlsbad and Capitan limestones. They were

formed in a shallow sea probably 200 million years ago—in the Permian period. After this period the area emerged from the sea. It may have been resubmerged and covered by sediments at a later period.

The uplifting and folding movements that formed the Rocky Mountains also raised the Carlsbad area above sea level. The Guadalupe Mountains near Carlsbad are extensions of that great mountain system. The uplift of the region took place near the end of the “Age of Dinosaurs” (Cretaceous period)—some 60 million years ago. Since that time the streams have carved their deep gorges, the vast caverns have been hollowed in the limestone, and within them the amazing decorative deposits were formed.

The repeated movements of the region made numerous joint cracks or fissures in the massive limestones. Surface waters entering the ground found their way along many of these crevices. The beginning of the caverns as small crevices dates from the entrance of this first percolating water.

Once water enters a limestone it begins the incessant process of removal by solution. Slowly it seeps through the crevices, dissolving soluble rock little by little, until eventually a series of tortuous openings are developed.

Very small at first, they gradually enlarge and extend in all directions, and are connected. More water enters with each rain and the cavities continue to enlarge by solution, rapidly when water is plentiful, slowly when it is scarce, thus opening great caves and passageways. Long, continuous corridors result when ground water is diverted along the contact of an impervious layer or follows a straight fissure or joint crack. Ultimately, the water that moves through these subterranean channels flows out into the valley in the form of seepages or springs.

The large rooms owe their size in part to the caving of rock from the sides and the roof.

Ground water moves through deeper passages and finds lower outlets when the adjacent valleys are deepened.

The small seepages that find their way into the dry caverns from above are here evaporated and deposition takes place instead of solution and removal. During this second period of development nature converts these gray cavities into a wonderland. In the Carlsbad Caverns there are myriads of beautifully sculptured effects hanging from the ceiling. Some of these are inverted spires variously ornamented and known as stalactites; some are small delicate growths resembling plant structures. Where water enters any opening faster than it can be evaporated, part of it falls to the floor and evaporates there, gradually building up stalagmites and other masses of limestone, many of which assume grotesque shapes. Some stalactites and stalagmites have joined to form columns.

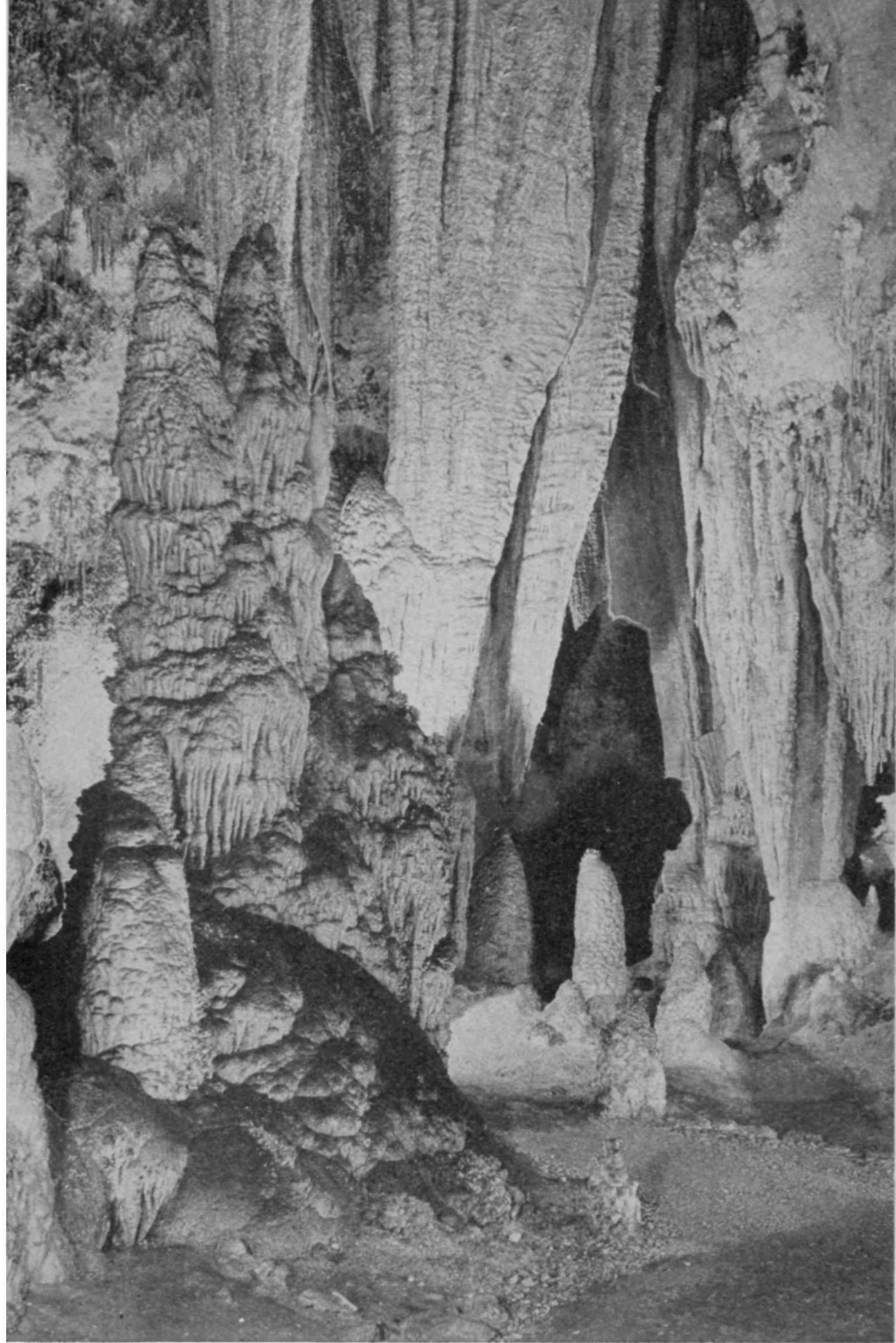
Less commonly irregular spiral and curiously branched and twisted forms develop; these are known as helictites.

Many of the formations, in all forms and positions are delicately colored, generally in shades of tan, but other tints are also sometimes seen. This coloring results from a small amount of iron or other mineral matter in the limestone. These ornate and fascinating forms are due to the deposition of carbonate of lime which has been carried in solution by descending ground water and which crystallizes upon the walls of the cave as the water evaporates. Even when some of the water finds direct entrance through sink holes into deep open passageways, a small amount still seeps through small crevices into the dry upper chambers where it evaporates and deposits its tiny load of limestone. This constant addition of small increments to the surface by the evaporation of the water in which it is dissolved is the method by which the cave formations grow.

The brilliance and translucent appearance of the formations in a cave are due to the fact that they are saturated with water. If, for any reason, the seepage of water into the cave is stopped, its appearance gradually becomes dull and the surface slowly assumes a powdered appearance. Such a dry cave is spoken of, in cave parlance, as being dead.

Extent and Early History of Area

Although many miles of passages and chambers have been explored, the size of the Carlsbad Caverns is not yet known. Development has been limited to the 750-foot level, reached by trail from the natural entrance, via the Green Lake Room, King's Palace, Queen's Chamber and Papoose Room,



Queen's Chamber

829 feet below the surface, and by passenger elevator. The developed portion of the caverns only is open to the public. An extension of this lower level may be seen at the Jumping Off Place in the Big Room. To the east, extending from the lunch-room, is another subterranean passage that has been explored to a depth of 1,150 feet. Lower levels exist, but none of these levels has been completely explored.

Although the underground caverns are so extensive, the surface area of Carlsbad Caverns National Park was only some 700 acres until February 21, 1933, when by Presidential proclamation it was increased to 10,080 acres. On February 3, 1939, it was further enlarged by Presidential proclamation to 49,568 acres. Within these enlargements are many other caves, some rich in decorative deposits and others full of archeological interest in that several of them are the burial places of prehistoric inhabitants of the region. Other evidences of prehistoric occupancy are the circular rock mescal or cooking pits and the grinding bowls found on the surface near the entrance to the caverns.

Early pioneer trails passed near the caverns' entrance. The Spanish conquistadors are believed to have come into the Guadalupe Mountains near the caverns, and the historic old Butterfield express trail (the first express trail across the West) crossed the route of the Spaniards at this point. Over the route of the Butterfield Trail the Forty-niners freighted their gold from California to St. Louis, and today wagon irons, relics of old wagon trains that met with disaster at

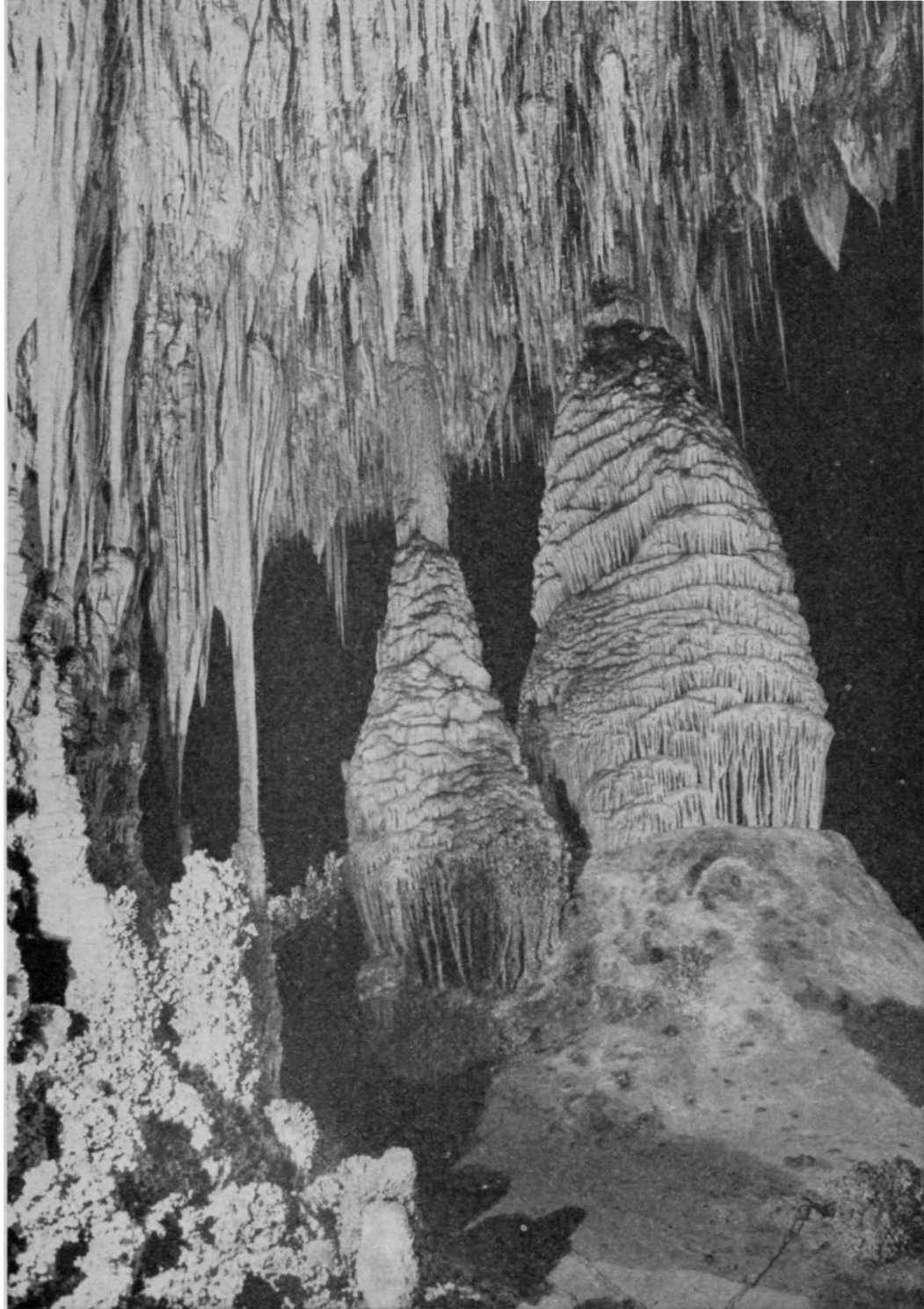
the hands of marauding bands, are sometimes unearthed.

Exploration of Caverns

The first white man known to have explored the caverns was Jim White, a cowboy. This was in 1901. Seeing a dark, moving column issuing from the region, he investigated and found a natural opening in the earth which led down to the caverns. The dark, smokelike column proved to be alive, a moving stream of bats from down in the darkness of the caves.

With a young Mexican boy as his only companion, Jim White made extensive explorations of the caverns, insuring success in his return by leaving behind a trail of smudge marks and strings. Smudge marks still remain as testimony of the courageous young cowboy whose love of adventure made him the pioneer explorer of the world's greatest caverns.

After exploring Carlsbad Caverns, Jim White never missed an opportunity to take visitors into his find and share its beauties with them. Their reports of the size and magnificence of the underground chambers finally resulted in examination of the caverns in 1923-24 by Robert Holley, of the General Land Office, and Dr. Willis T. Lee, of the Geological Survey, both of the United States Department of the Interior. They were greatly impressed with the magnificence of the caverns. Shortly afterward, Dr. Lee led the National Geographic Society expedition into them. His reports, published in the National Geographic Magazine of January 1924 and September 1925, gave the caverns national publicity.



Temple of the Sun, Big Room

The Bat Spectacle

The bat spectacle is one of the great attractions of Carlsbad Caverns National Park. Each evening at dusk, except during the period of migration (October to April), millions of bats come forth from the Bat Cave, 180 feet below the surface, flying in a spiral through the entrance arch and streaming off over the rim in a southerly direction, later to separate into flocks which disappear in the distance for a night's foraging. Beginning about sunset, the flight continues quite some time after dark, depending on the size of the bat colony and feed conditions. The bats return before the following dawn. It has been estimated that 3,000,000 bats during 1 night's foray may consume over 11½ tons of night-flying insects, such as various kinds of moths, beetles, flies, and mosquitoes.

During the day the bats hang by their hind legs, head downward, in great clusters high on the walls and ceilings of their particular portion of the caverns. The major portion of the

summer colony migrate south when fall weather and conditions cause the insect life to move. From October until April a small colony, estimated not to exceed 25,000, remain hanging in the cave, seeming almost lifeless. The portion of the caverns occupied by the bats is a long corridor extending a quarter of a mile eastward from the main entrance, and is not open to visitors.

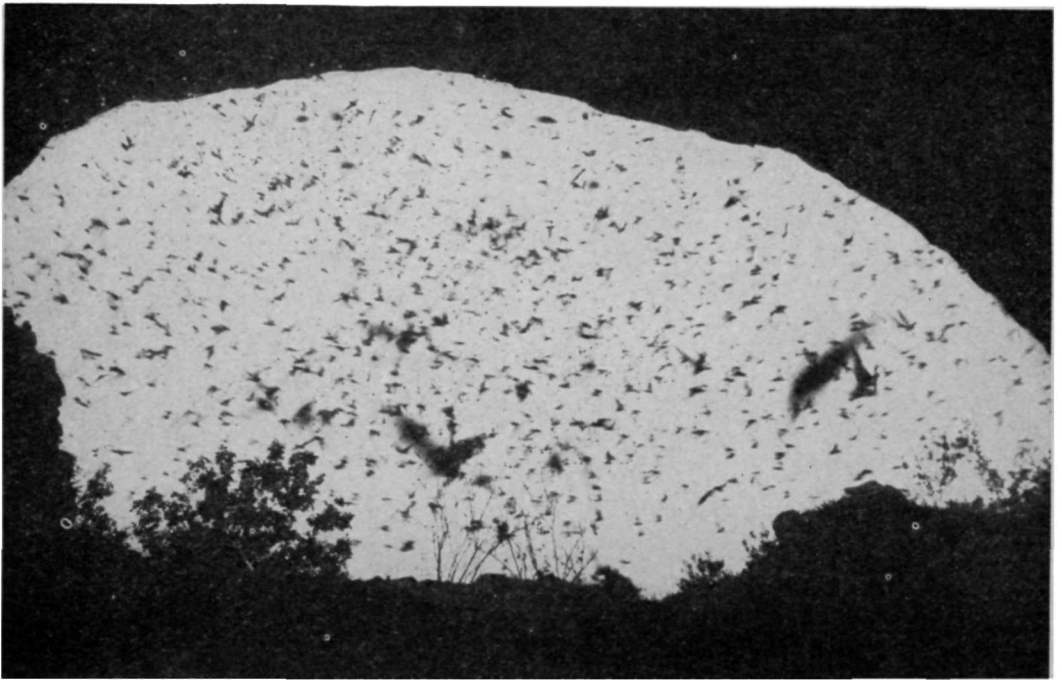
There are five kinds of bats in the park, but by far the greater number are Mexican Free-Tailed Bats. Their common name of free-tailed bat is descriptive of the tail, which projects about 1 inch beyond the skin that stretches between the hind legs.

A talk on the bats by a naturalist is given each evening at the caverns entrance just before the flight begins, during the summer months.

The Desert Plants

The region about the Carlsbad Caverns National Park contains many interesting desert plants.

Bat flight as seen from inside caverns entrance





Walnut Canyon Highway leading to caverns entrance



Parking terraces and operation development

The caverns visitor who comes in April or May might be fortunate enough to see many plants in full bloom, plants which flower for only a short time, go to seed, and then until the following spring give little evidence of their existence. The cactus garden near the ticket office contains specimens of the cactus, as well as a few of the other plants of the region.

Weather Conditions

Carlsbad Caverns National Park is open every day throughout the year. Although the caverns temperature remains stationary at 56°, the surface temperature runs the gamut from nearly zero weather in winter to over 100° in summer. Therefore, clothes of ordinary weight, plus a light sweater or other wrap, are needed for the trip through the caverns at all times of the year; while on the surface, clothes should follow the season. No special clothes are needed for the caverns trip, since trails and stairways are followed the entire distance. Low-heeled shoes, however, are advisable,

The Underground Trip

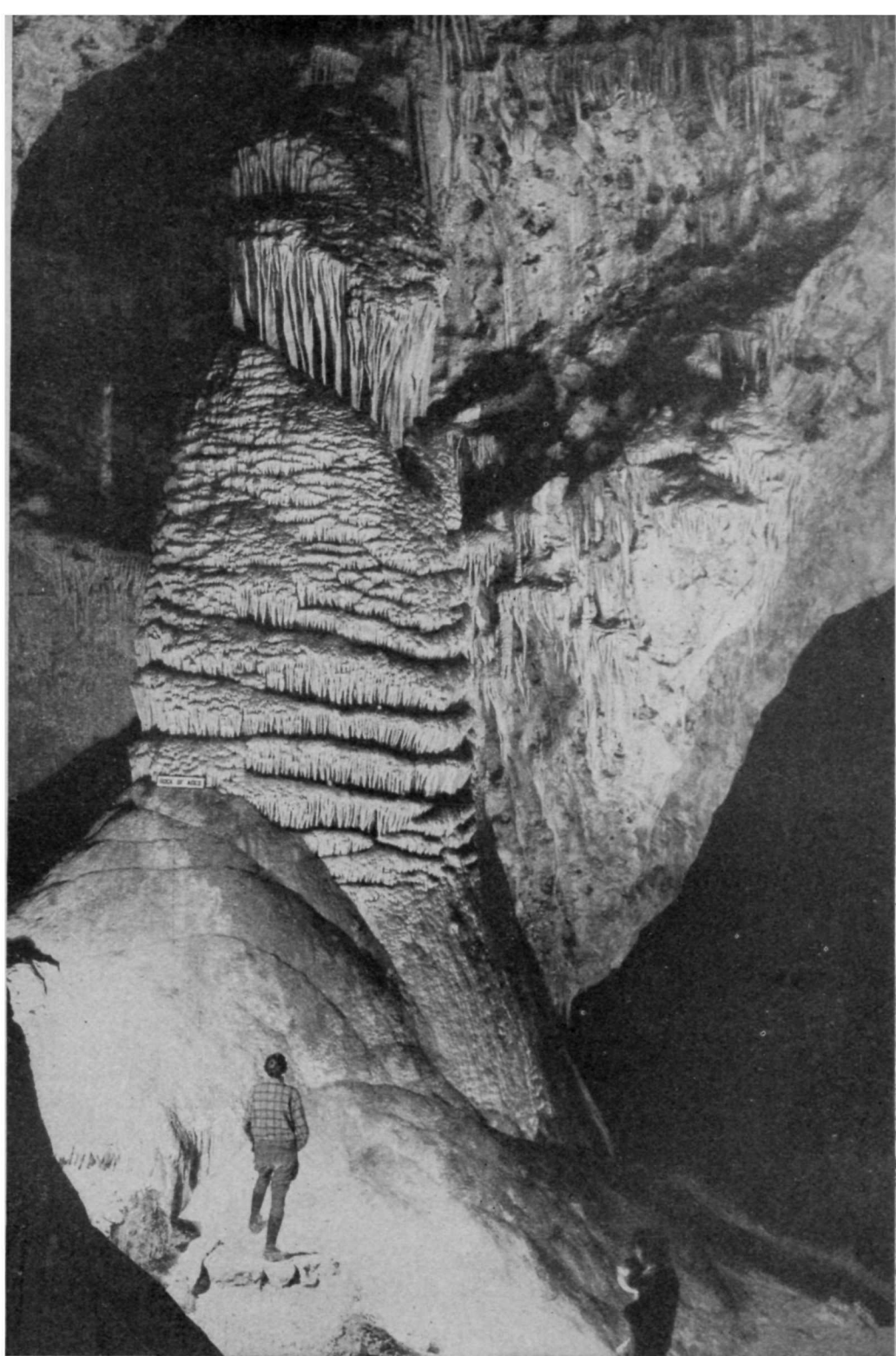
At the present time only a portion of the underground corridors and great chambers in the Carlsbad Caverns National Park are open to visitors.

The main corridor of the cave, just beneath the entrance, is immense, but, apart from its great size and geologic position, has nothing of particular importance to offer when compared with the beauties of the chambers beyond.

The trail through the main corridor extends for almost a mile and leads to the Green Lake Room, which derives its name from a small green pool alongside the trail.

The trail then passes through a short artificial tunnel to the King's Palace, thought by many to be the most beautiful chamber in this or any other series of caverns. It is almost circular in form and is separated from the adjoining chambers by curtains and partitions.

A natural "keyhole" leads from the King's Palace to the Queen's Chamber, and in natural sequence comes the Papoose's Chamber, a beautiful



Rock of Ages

little room which leads back to the King's Palace, whence the trail leads over a series of winding terraces to the lunchroom, at the beginning of the Big Room. Here a stop of about three-quarters of an hour is made for lunch. Water has been piped from the surface and is available in sanitary drinking fountains; tables and benches have been built, and modern comfort stations installed nearby.

Leaving the lunchroom, the visitor enters the Big Room itself, the most impressive of the many chambers of the caverns. The trail around the perimeter of this room is about $1\frac{1}{4}$ miles in length, and at one place the ceiling arches 300 feet above. In this room the formations are massive as well as magnificent. The stalactites vary from almost needlelike proportions to huge chandeliers; the stalagmites are equally varied, although of different contours. Here is found the Giant Dome, which bears a striking resemblance to the Leaning Tower of Pisa.

Returning to the lunchroom one may leave the caverns by elevator or return to the surface over a short-cut trail, climbing 754 feet in about 1 hour.

From the ticket office to the lunchroom by trail is $1\frac{1}{2}$ miles. Around the Big Room, returning to the lunchroom $1\frac{1}{4}$ miles, a total walking distance of $2\frac{3}{4}$ miles, if one leaves the caverns by elevator. For those wishing to walk out, the added distance is 1 mile, or a total of $3\frac{3}{4}$ miles round trip.

Properly to cover the caverns now open to the public requires about 5 hours, with a $\frac{3}{4}$ -hour luncheon stop. Before the regular cave trip starts, at 10:30 a. m. (mountain time), a brief talk is made by a Government official at the caverns entrance. During the

periods of heavy travel in the summer additional trips, as warranted by the number of visitors, are provided; however, the visitor is assured of always entering the caverns at 10:30, as this will continue to be the time for the regular daily trip.

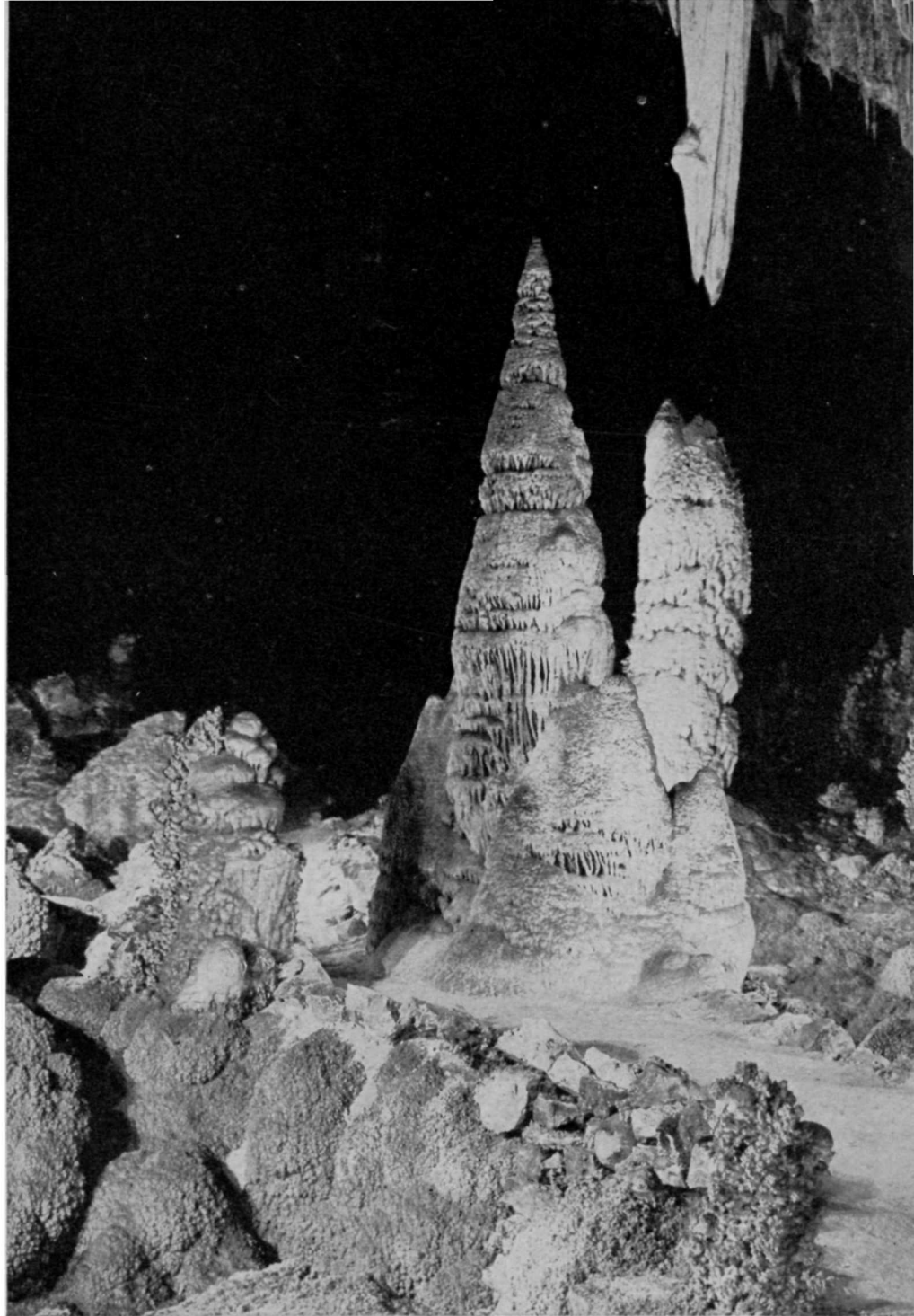
Entering the caverns by elevator, visitors may join scheduled groups in the lunchroom and see a portion of the cavern. When conditions permit, naturalist-conducted trips in the caverns will be provided for groups up to 100 in number. These trips, covering the entire regular route, will be enhanced by a number of stops and short talks along the route on the history and geology of the caverns. Even though portions of the caverns are not seen on the trip, nevertheless the impressive portion of it is viewed in the tour of the Big Room. Park guides conduct the party throughout the entire trip. Visitors are invited to ask questions of the guides who are glad to impart authentic information.

Fees

A fee of \$1.25 for guide service is charged each adult entering the caverns. For children 12 to 16 years of age, inclusive, the guide fee is 25 cents. This age limit is raised to 18 years in the cases of classes from public schools (accompanied by teacher) visiting the caverns for educational purposes. No charge is made for children 11 years of age or under when accompanied by adults taking responsibility for their safety and good conduct.

Administration

The representative of the National Park Service in immediate charge of



The floodlighting of the Carlsbad Caverns is a masterpiece of electrical illumination

the Carlsbad Caverns National Park is the superintendent. He maintains headquarters in the park, and to that office should be made all requests for official information regarding the caverns. General information also may be obtained at the chamber of commerce, hotels, camps, garages, or transportation offices in Carlsbad or nearby cities.

Accommodations

There are no overnight accommodations available in Carlsbad Caverns National Park, but modern hotels and tourist camps in nearby cities and towns along the approach highway offer various types of service at prices ranging from \$1 to \$2 for camps and from \$1.50 to \$3 for hotels. The National Park Service exercises no jurisdiction over these accommodations.

In the park itself a store is maintained near the caverns entrance where refreshments, soft drinks, pictures, photographic supplies, cigarettes, candy, postcards, and souvenirs may be purchased. This is operated by the Cavern Supply Co. under Government franchise and supervision. Rates and service are approved by the Director of the National Park Service.

The Cavern Supply Co. also serves luncheon at the 750-foot level in the caverns for the convenience of visitors making the caverns trip. Luncheon may be obtained at the moderate cost of 50 cents.

Another service furnished by the company is a day nursery near the caverns entrance, where babies and small children are cared for. A charge of \$1.50 a day for each child is made for this service, which includes lunch.

Trail leading to caverns entrance



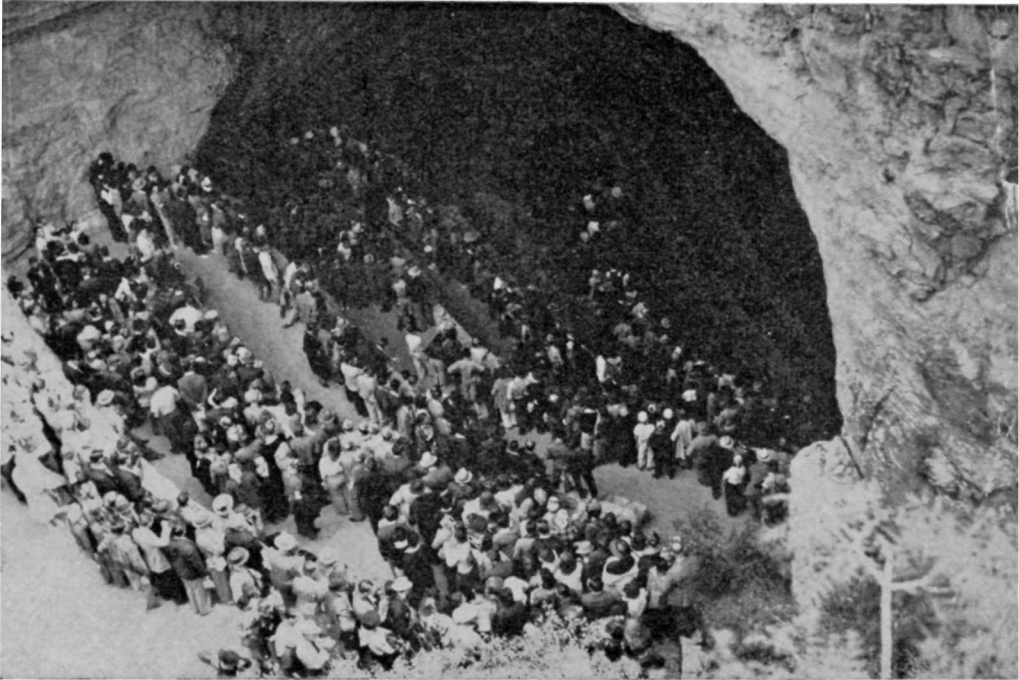
Wheelchairs for invalids for last half of tour may be rented for 75 cents; with attendant, \$2.75.

How to Reach the Park

The park is served by the Sante Fe System on the north, through the city of Carlsbad. Train passengers can reach the park by auto coach or taxicab. Persons arriving in Carlsbad in the morning may make the caverns trip and return to Clovis that night. The park is also served by the Texas and Pacific, Rock Island, and Southern Pacific Lines, by way of El Paso.

Carlsbad Caverns coaches, and Texas, New Mexico, and Oklahoma coaches operate to Carlsbad. Carlsbad Caverns coaches go from El Paso to the park, and passengers from railroads other than the Santa Fe may obtain bus service at El Paso or Pecos, Tex. Daily airplane service also is provided.

By automobile the park is reached by U. S. Highway No. 62 from El Paso, Tex., or from Hobbs, N. Mex.; U. S. Highway No. 285 through Denver, Colo., Santa Fe, or Roswell, N. Mex., to Pecos, Tex., and from U. S. Highway No. 80 through Pecos.



Tourists entering the caverns

RULES AND REGULATIONS

(BRIEFED)

The following is a synopsis of the rules and regulations in force in the Carlsbad Caverns National Park. Complete regulations may be seen at the office of the superintendent.

PRESERVATION OF THE PARKS.—Destruction, injury, or disturbance in any way of trees, flowers, vegetation, rocks, mineral formations, or any animal, bird, or other life, and defacement by writing, carving, or otherwise of walls or other formations in caverns are prohibited.

No canes, umbrellas, or sticks of any kind may be taken into the caverns unless permission is granted by the superintendent or one of his representatives, which permission may only be given when such cane or stick is necessary for the visitor to make the caverns trip. The tossing or throwing of rocks or other material inside the caverns is prohibited. No firearms or explosive material may be taken into the caverns.

FEES.—No person or persons may enter the caverns unless accompanied by National Park Service employees or guides; fee \$1.25.

CAMPING.—There are no public camps within the park area, and no overnight stop is permitted. Lunches may be eaten only in designated places, and all trash must be placed in cans provided for the purpose.

FIRES.—Especial care must be taken that no lighted match, cigar, or cigarette is dropped in any grass, twigs, leaves, or other combustible material.

HUNTING.—The park is a sanctuary for wildlife, and the hunting, killing, wounding, frightening, capturing, or attempting to capture, of any wild bird or animal is prohibited.

DOGS.—No dogs are allowed in the caverns.

CAMERAS.—Still and motion-picture cameras may be used on the surface by amateurs for scenic views. Amateurs desiring to operate standard-size motion-picture cameras and professional photographers must obtain a permit from the superintendent for taking interior views. No flashlight picture shall be taken without special authority in writing from the superintendent.

PARK RANGERS AND GUIDES.—The rangers and guides are here to help and advise you. When in doubt, ask an employee in uniform.

Revised 1946