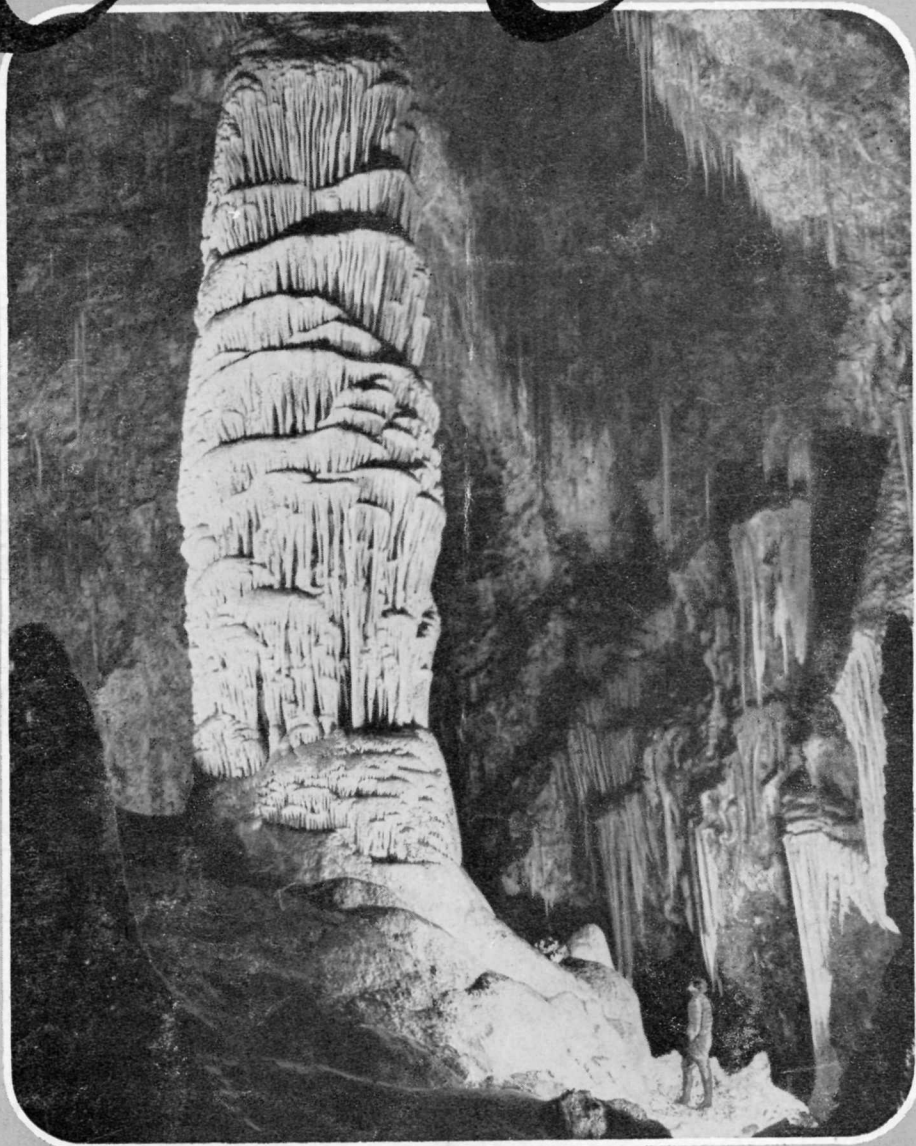


Carlsbad Caverns



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 some time during this period.
- 1900 Guano mining was carried on about this time, the miners of guano being the first explorers of the scenic portion of the caverns.
- 1923 October 25. Established a national monument by Presidential proclamation.
- 1923 and 1924 Dr. Willis T. Lee led National Geographic Society expeditions into the caverns, finding many new tunnels and rooms. At the close of his expedition, 23 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 in 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 acres.
- 1939 Park extended to 49,568.44 acres by Presidential proclamation.



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.

Formation of the Caverns

Carlsbad Caverns are openings made by underground water in two massive rock formations known as the Carlsbad and Capitan limestones. The limestone formations were deposited 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 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 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 encroachment and movement of this fresh water.

In cave formation fresh water moving through the joints 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 caverns 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. At the lower levels the limestone is completely saturated, the cavities remaining full of water, and solution work which proceeds on all exposed surfaces of the openings is most effective.

A second uplift was experienced here—the earth movements responsible for the Guadalupe Mountains. This later uplift, just prior to the Ice Age, allowed surface streams to cut deep canyons into the limestone and permitted the water filling the caverns to be drained away. As the water left, the great pressure it had exerted against the ceilings and walls of the underground chambers was relieved, and considerable rock material fell into the cavities. The collapse cycle ended as soon as stability was once again established, but the large size of rooms and the high ceilings owe their existence to this period of caving and collapse.

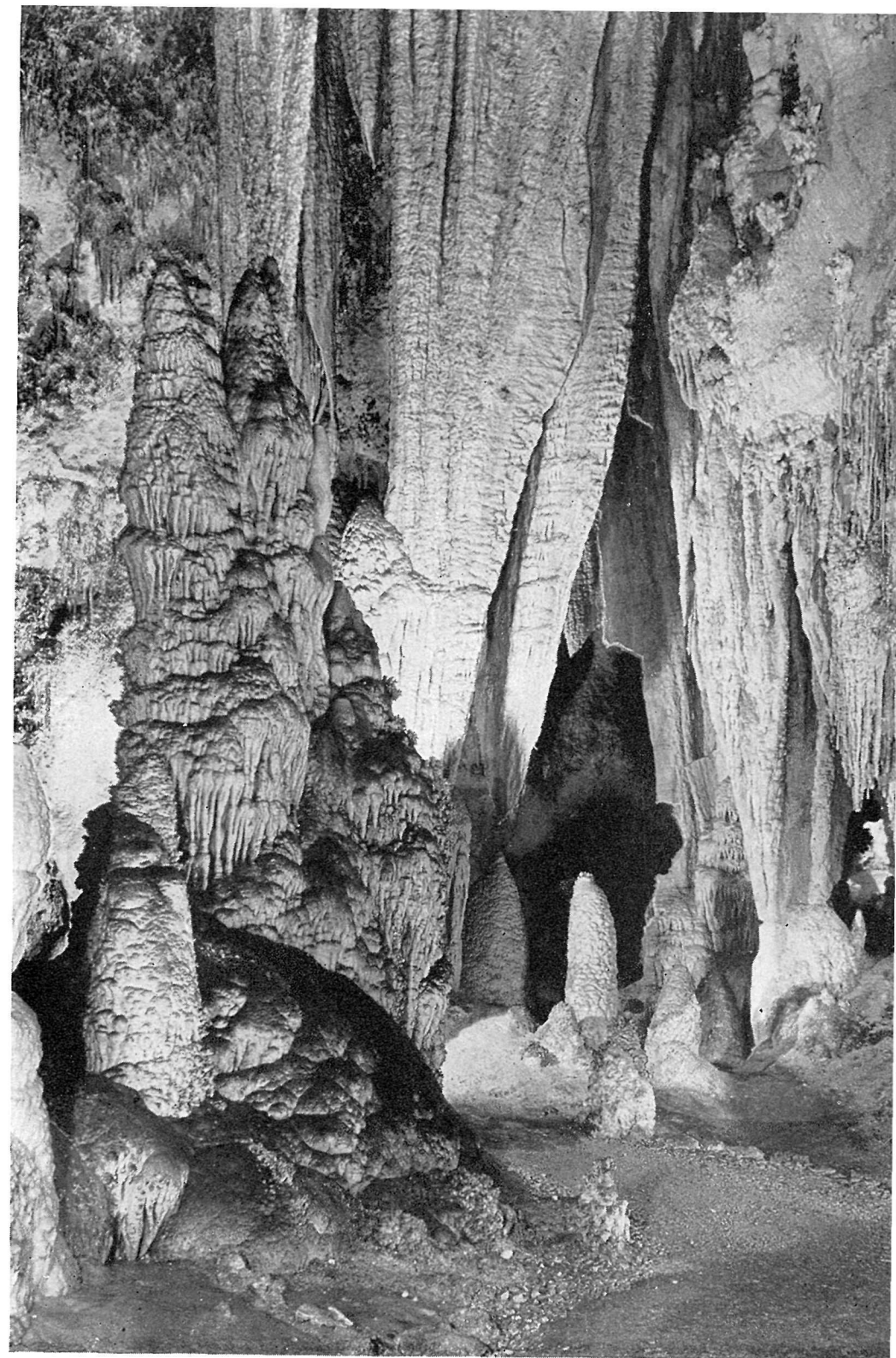
The small seepages that find their way into the dry caverns from above are here evaporated and deposition takes place instead of solution and removal. During this second period of development, nature converts these gray cavities into a wonderland. In the Carlsbad Caverns there are myriads of beautifully 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 oxide 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 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.

QUEEN'S CHAMBER



Extent of the Area

While 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, 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 lunchroom, is another subterranean passage that has been explored to a depth of 1,100 feet. Lower levels may exist, but none of these levels has been found.

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.

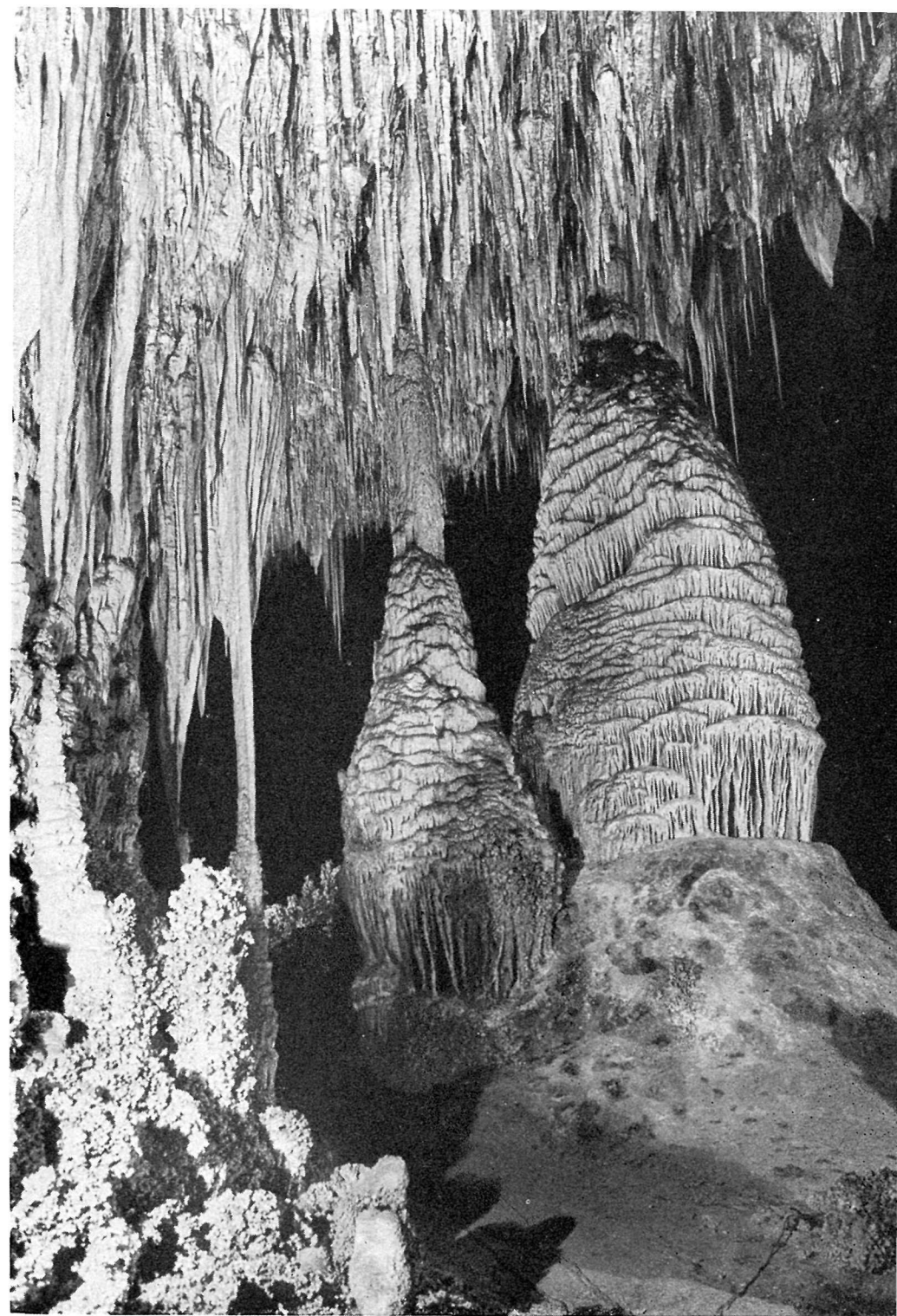
History of the Caverns

All that is known of the first man to see the entrance of Carlsbad Caverns is that he was an Indian. Evidences of prehistoric inhabitation are the circular rock mescal or cooking pits and the grinding bowls found on the surface near the entrance and the paintings, or pictographs, found on the walls of the entrance. It is doubtful, however, that the Indians ventured far into 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.

Following closely the wayfarers of the Butterfield Trail came the cattlemen and the first permanent settlers. They knew of the caverns, referred to them as the Bat Cave, and may have explored portions of them. The first real interest in the cave, however, lay not in its natural beauty but in the discovery of its valuable deposits of bat guano. Mining operations to remove this nitrate-rich fertilizer began at the turn of the century and the guano miners made exploration of the underground chambers and passageways. Among these early explorers was a local cowboy, Jim White. He was impressed by the wonders he saw beneath the surface and took every opportunity of visiting the caverns and in encouraging others to visit them. Later, Jim White became an unofficial guide for the caverns and when the area was included within the National Park System he was made a park ranger and, subsequently, chief ranger.

As more settlers came to the region the fame of the caverns grew, and in 1923 Robert Holley, of the General Land Office, United States Department of the Interior, surveyed the cave to determine whether it should be included in the superlative areas making up the



TEMPLE OF THE SUN, BIG ROOM

National Park System. His report stressed the magnificence of the caverns and on October 25, 1923, President Coolidge proclaimed the area the Carlsbad Cave National Monument. Also in 1923, and again in 1924, Dr. Willis T. Lee, of the Geological Survey, made comprehensive explorations, and the publishing of his findings in the National Geographic Magazine gave the caverns national publicity. An act of Congress, approved May 14, 1930, changed the status of the area to the Carlsbad Caverns National Park.

The Bat Spectacle

The bat spectacle is one of the great attractions of Carlsbad Caverns National Park. Each evening about sundown a great number of bats come forth from the Bat Cave. Flying out through the entrance arch in a spiral, they stream off over the rim in a southerly direction, later to separate into flocks which disap-

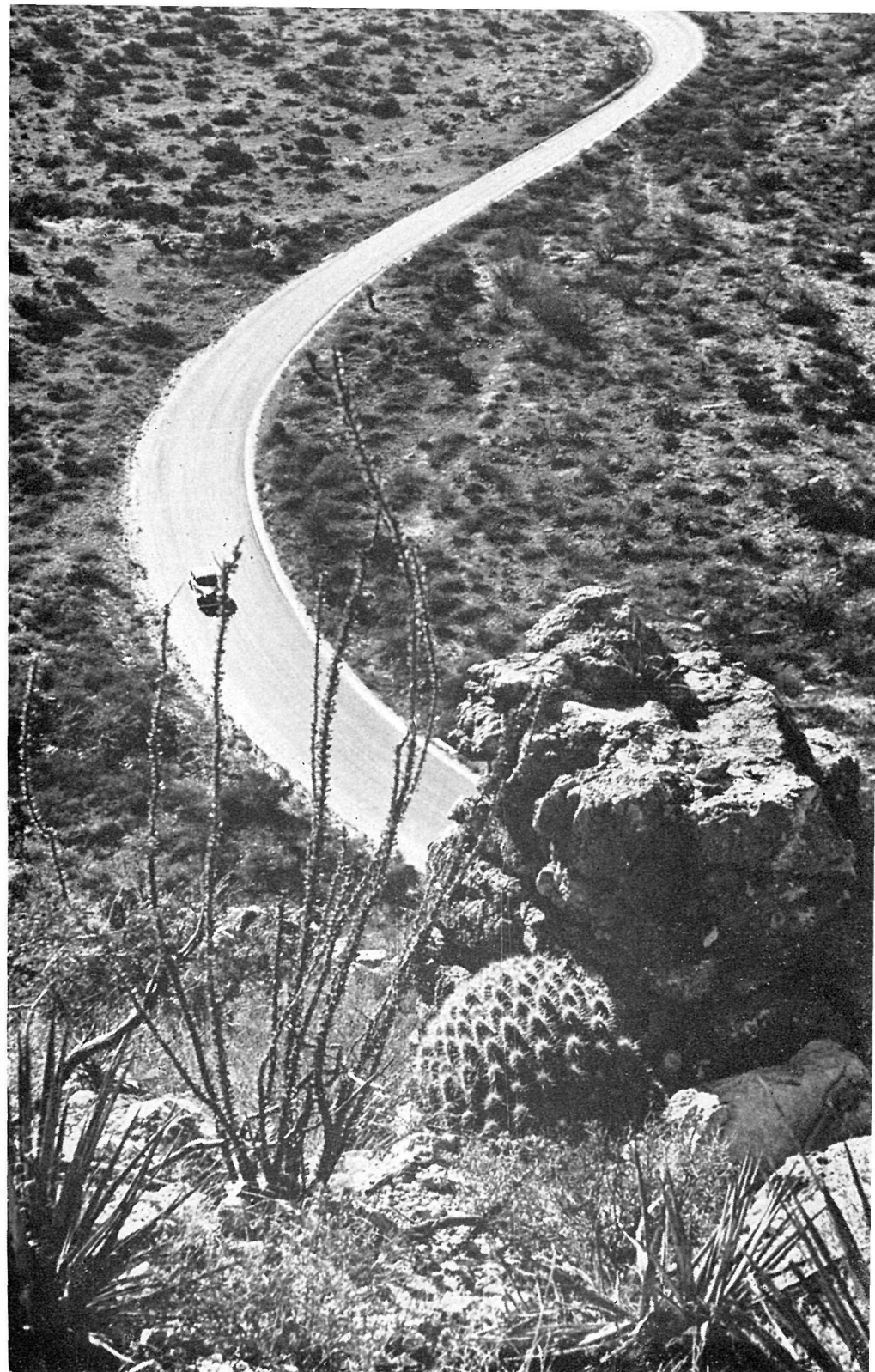
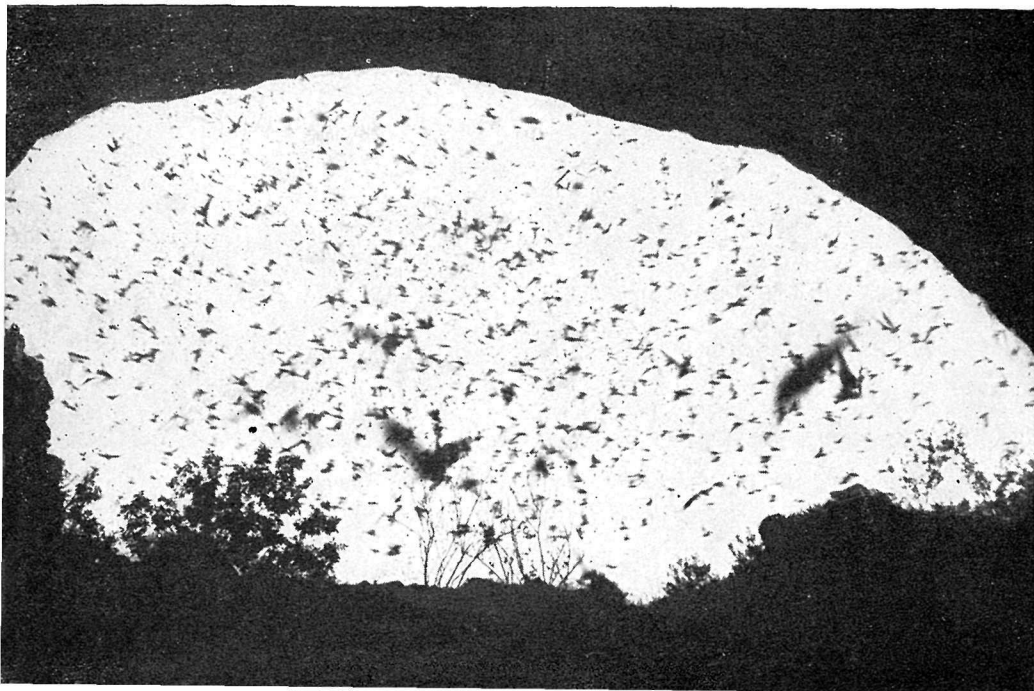
pear in the distance for a night's foraging. The exodus continues for quite some time, depending on the intensity of the flight and the number of bats present. The population of bats is contingent upon the availability of their insect food supply. When night-flying insects, such as moths and beetles, are numerous, literally millions of bats are in flight, but as the insect food supply wanes so does the number of bats, and during the winter months most of the bats of Carlsbad Caverns have migrated to warmer regions.

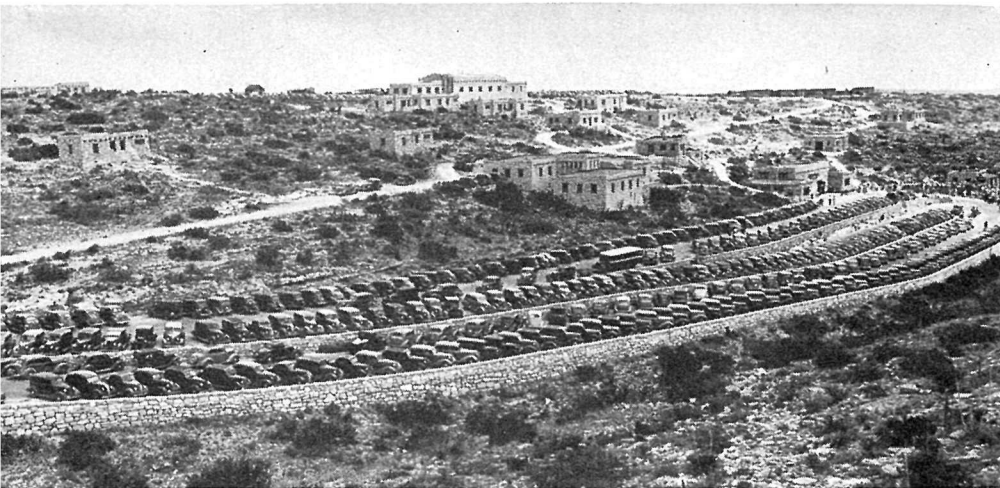
Bats return from their nocturnal insect feeding just before dawn. They dive into the entrance at amazingly high speed and fly directly to the Bat Cave, where they spend the daylight hours at rest. Bats at roost hang by their hind legs, head downward, in dense clusters from the ceiling of their particular part of the caverns.

Since bats spend nearly their entire life in darkness, little is known about

Below: BAT FLIGHT AS SEEN FROM INSIDE CAVERNS' ENTRANCE

Right: WALNUT CANYON HIGHWAY LEADING TO CAVERNS' ENTRANCE





PARKING TERRACES AND OPERATION DEVELOPMENT

their life habits. Folklore and superstitions have long vilified the bat, yet they are actually quite harmless and very beneficial to man. They destroy great quantities of noxious insects, and the guano they produce is prized as a source of nitrates.

Ten different species of bats are found within Carlsbad Caverns National Park, but those observed in the evening flight are nearly all the Mexican Free-tailed Bat. These are cave-dwelling, colonial, semitropical, migratory bats and derive their name from their distribution and the peculiar elongated tail that extends beyond the tail membrane about 1 inch.

A talk on the bats by a National Park Service naturalist is given each summer evening at the caverns entrance just before the flight begins.

The Desert Plants

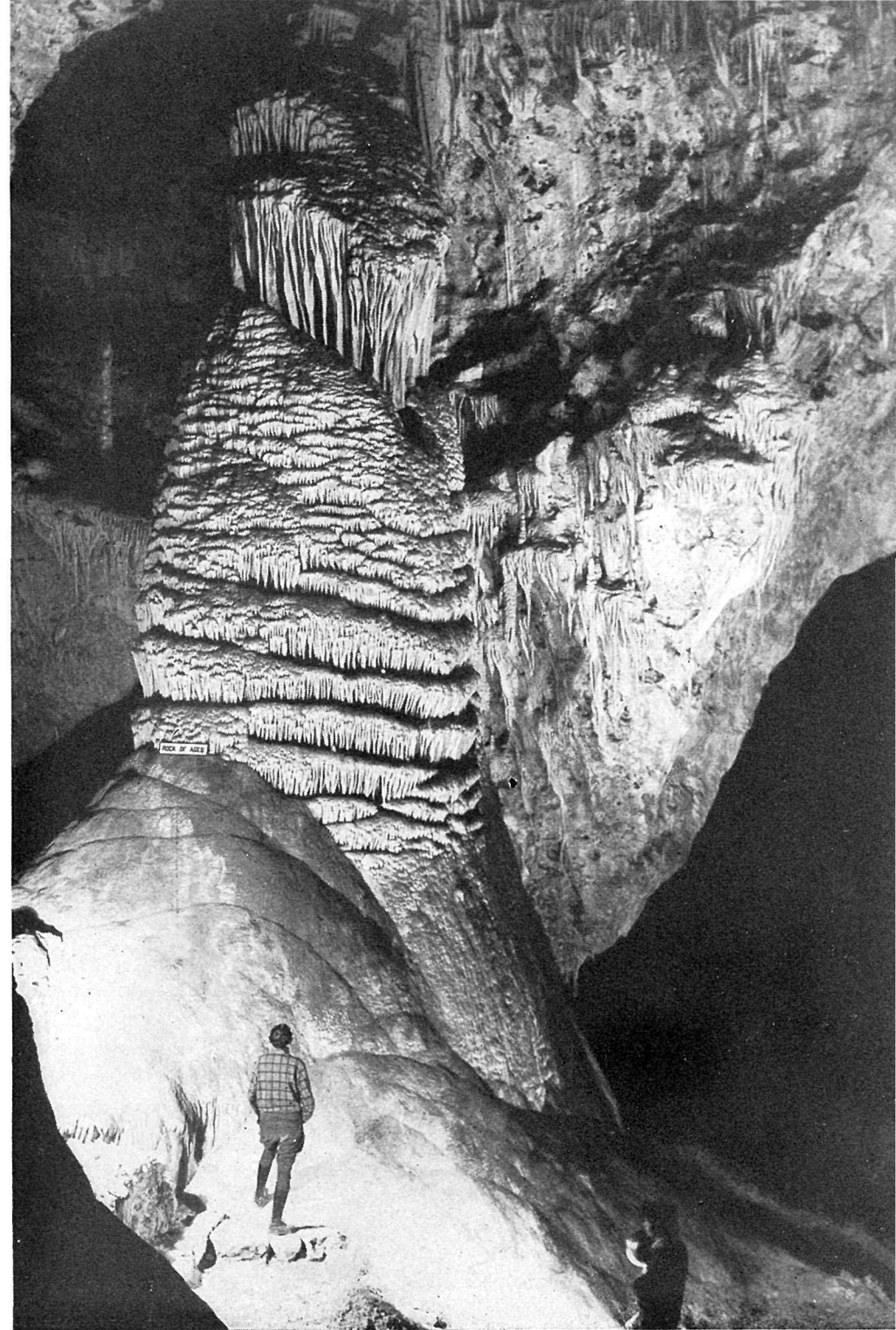
The region about Carlsbad Caverns National Park contains many interesting desert plants.

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.



ROCK OF AGES

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 Room, a beautiful little room which leads back to the King's Palace, whence the trail leads over a series of winding ramps to the lunchroom, at the beginning of the Big Room. Here a stop of about 40 minutes 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 have been 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 285 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 usually leaves the caverns by elevator. Occasionally a walk-out trip to the surface is scheduled over a short-cut trail, climbing 754 feet in about 50 minutes.

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

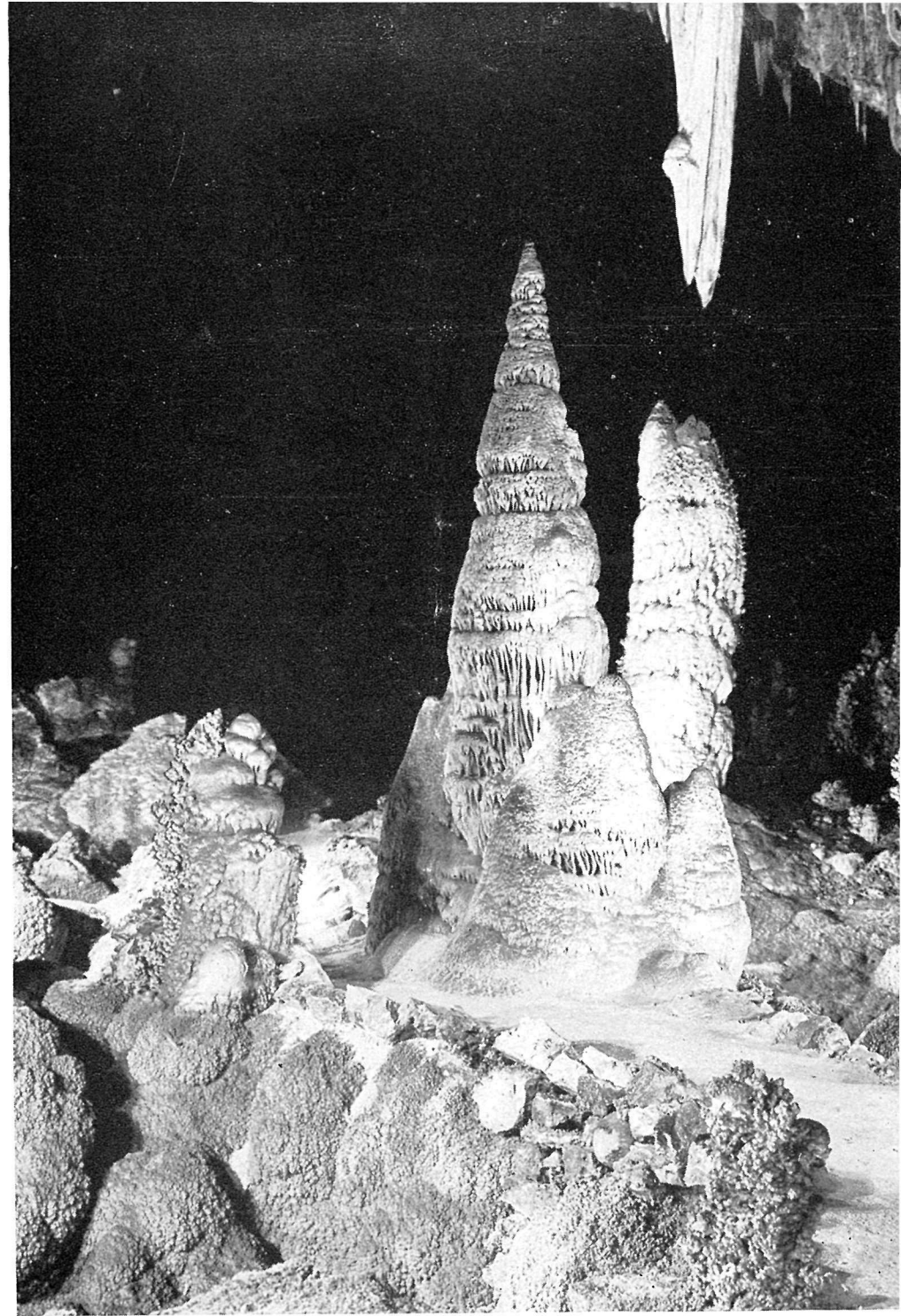
Properly to cover the caverns now open to the public requires about 4 hours, with a 40-minute luncheon stop. Trips are scheduled several times each day, the tours starting from the entrance at 9, 10, and 11 a. m. and 12:15 p. m.

Entering the caverns by elevator, visitors may join scheduled groups in the lunchroom and see a portion of the caverns. Even though portions of the caverns are not seen on the trip, the impressive portion of it is viewed in the tour of the Big Room.

National Park Service 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. Fees



THE FLOODLIGHTING OF THE CARLSBAD CAVERNS IS A MASTERPIECE OF ELECTRICAL ILLUMINATION



TRAIL LEADING TO CAVERNS' ENTRANCE

may be waived for school groups 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 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 ap-

proved 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.

How to Reach the Park

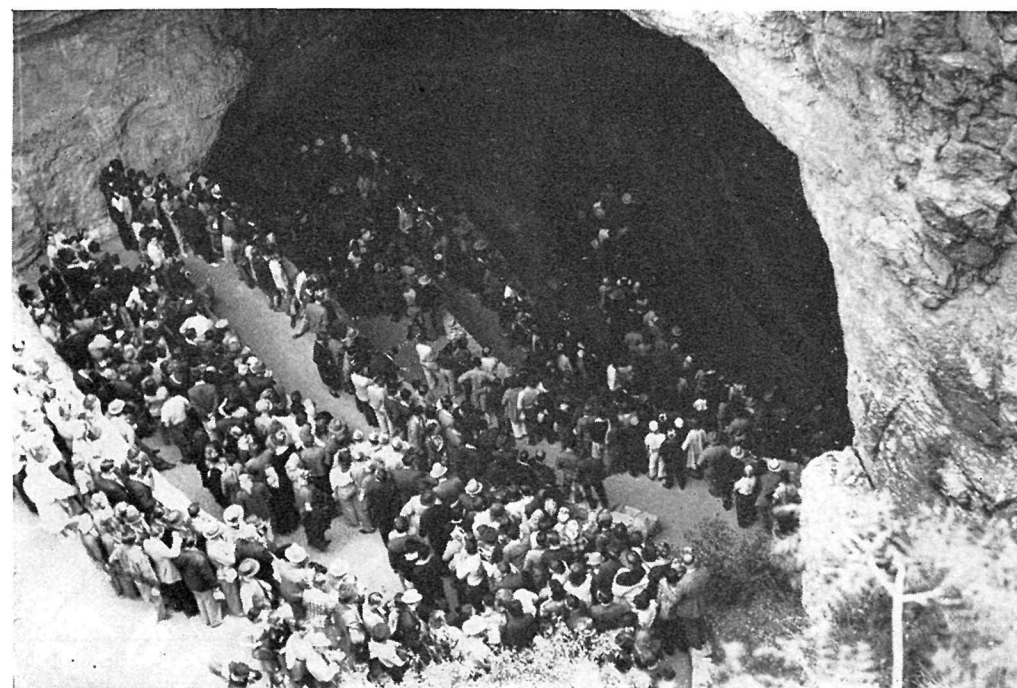
The park is served by the Santa Fe System on the north, through the city of Carlsbad. Train passengers can reach the park by auto coach or taxicab. Persons arriving in Carlsbad in the morning

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 to the Carlsbad airport.

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 Carlsbad Caverns National Park. Complete regulations may be seen at the office of the superintendent.

Preservation of the Park.—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 formation in the 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 accommodations. 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. Professional photographers must obtain a permit from the superintendent for taking interior views. No flashlight picture shall be taken without special authority 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 1948