

# Carlsbad Caverns

NATIONAL PARK  
NEW MEXICO

On the northeastern slope of the Guadalupe Mountains in southern New Mexico is Carlsbad Caverns, a place of contrasts. Unlike many other natural parks, it reaches deep within the earth to preserve and interpret a subterranean wonderland acclaimed as "king of its kind." On the surface, the land is harsh and rugged, with the steep rock-strewn ridges covered with cactus and other spiny plants. Temperatures are often extreme and rainfall is sparse. But below ground, huge galleries lavishly decorated with delicate stone formations are always cool and moist.

More than 50 caves are preserved in the 46,753-acre park. Carlsbad, the largest, has one room with a floor area equal to 14 football fields and enough height for the Nation's Capitol to fit in one corner.

Visitors can tour vast underground chambers, explore deep, winding canyons, study Permian Age fossil reef, view unusual desert plants, and when the migratory bat colony is in residence, witness spectacular evening bat flights.

### HOW THE CAVERNS FORMED

The limestone in which the caverns formed was deposited near the edge of an inland arm of the sea during Permian times, about 250 million years ago. Its core is a fossil barrier reef built by lime-secreting algae and other marine organisms. To the north are layered rocks which formed in a lagoon behind the reef, and to the south are exposures of talus, or rock fragments, broken from the reef's crest by storms on the ancient sea.

In time, growth of the massive reef was halted and it became buried under layers of sediment. A pattern of cracks then appeared in the rock which set the stage for the formation of the caverns.

Rainwater, converted to a weak carbonic acid by absorption of carbon dioxide in the soil and decaying matter above, seeped into the cracks and worked its way down to the permanently saturated zone—water table. It then slowly dissolved the rock to create immense underground galleries.

As mountain building forces raised the caverns above the water table, air filled its chambers and mineral-laden water filtering in from the surface began to decorate the rooms with stalactite and stalagmite formations. Today, only a few of the formations are still growing, and they add layers of mineral so slowly that no change is noticed in a human lifetime.

### THE BATS

For thousands of years, bats that winter in Mexico have used one cavern as a summer home. From late spring until autumn's first major frost, usually in October or early November, incredible numbers of these tiny flying mammals spiral out of the cavern entrance en masse at sunset each evening. They fly southeastward over the escarpment rim to feed during the night on flying insects along the Black and Pecos Rivers. Before sunup the colony returns to the cavern where the bats sleep during the day. Size of the massed flight varies with weather conditions and the insect food supply, but at its peak, as many as 5,000 bats per minute boil up through the cavern opening.

### THE CAVERNS AND MAN

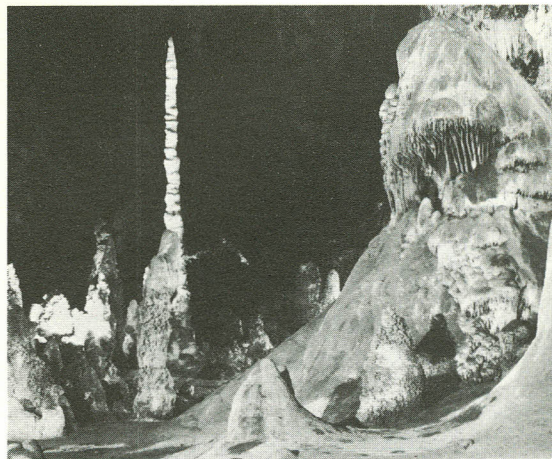
More than a thousand years ago, prehistoric Indians left paintings on the entrance wall of Carlsbad Caverns and cooked agave and other desert plants in a rock pit just outside. They were attracted to the cavern because of the shelter it could provide, as were the Apache Indians of more recent times.

More permanent settlers arriving after the Civil War were attracted to the cavern by what appeared to be smoke against the sky; they would ride to the cave and discover that the dark cloud consisted of literally millions of bats streaming out of the opening. Later, upon finding huge quantities of guano beneath the bat roost and learning of its value as a natural fertilizer, the settlers' interest in the cave became commercial. Mining claims were filed on the "Bat Cave" and more than 100,000 tons of guano were removed in 20 years.

James Larkin White, a young cowboy who was fascinated by the cavern and its bats, became a foreman for the guano mining companies and spent more than 20 years exploring, building trails, and escorting people through portions of the cavern he had discovered. His efforts, along with those of others, led to a visit by Robert Holley of the General Land Office, to a 6-month National Geographic Society expedition under Dr. Willis T. Lee, and finally to designation of the cave as a national monument in 1923. Additional land and caves were added in 1930 when it became a national park.

### FROM DESERT TO MOUNTAINS

The landscape of the park holds as much interest as the awesome caverns beneath. Elevations range from 3,600 feet above sea level at the base of the escarpment on the east boundary to 6,350 feet atop Guadalupe Ridge on the west boundary. Slicing through the rugged back country are numerous canyons with intriguing names like Slaughter, Bear, Walnut, Rattlesnake, Lefthook, Midnight, Yucca, and Double.

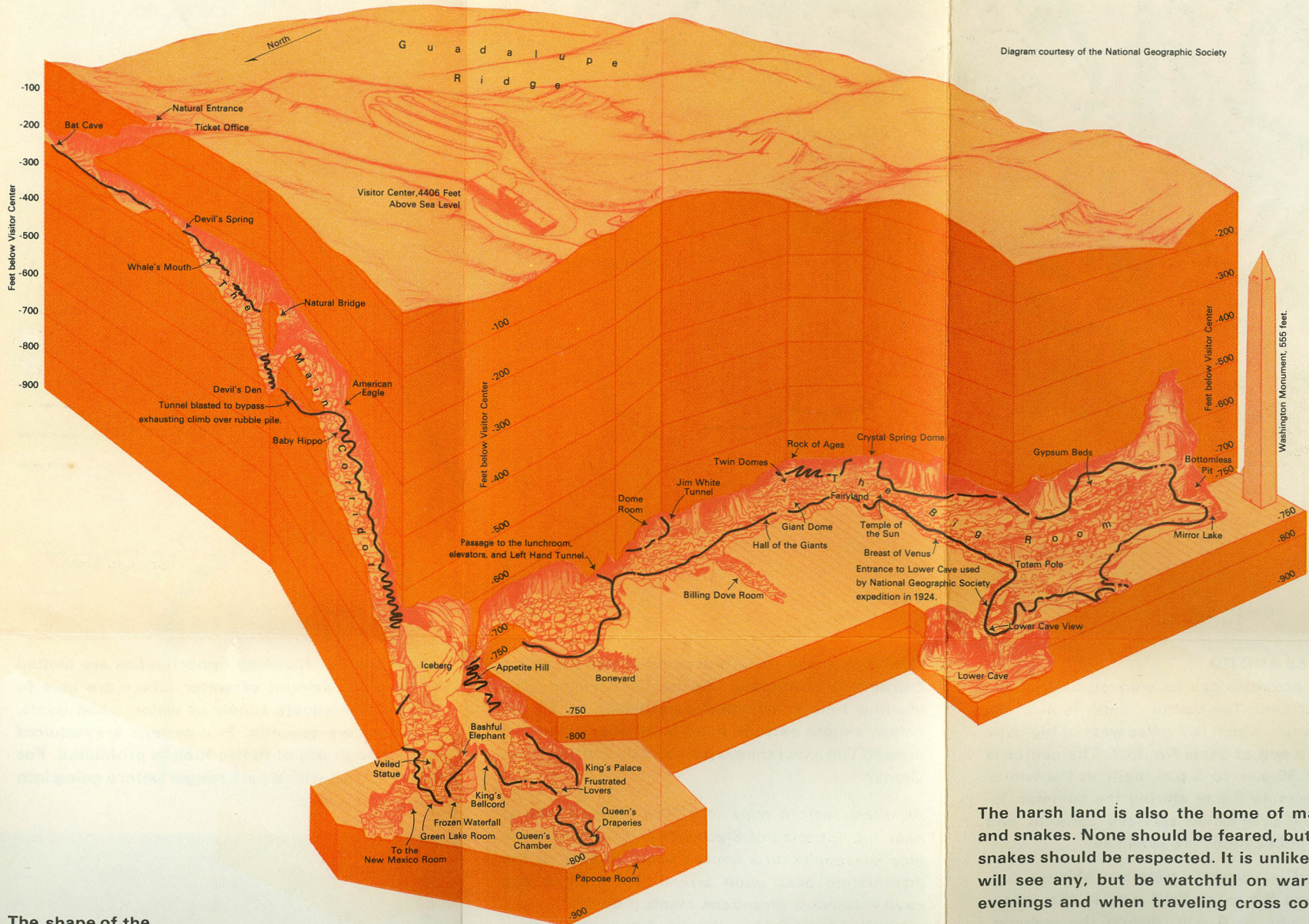


The Totem Pole was formed on the cavern floor by droplets of water, each holding a minute quantity of dissolved limestone. As the water fell and splashed against the stalagmite, the lime it carried precipitated and was deposited on the tip of the pole, building it higher and higher over the centuries.



This block diagram shows the scale of the principal chambers of Carlsbad Caverns, their position in the Guadalupe Ridge, and the 3 miles of trail descending 829 feet into the mountain. As you tour the caverns, note the names of the places and then find your position on the diagram.

Diagram courtesy of the National Geographic Society



The harsh land is also the home of many lizards and snakes. None should be feared, but the rattlesnakes should be respected. It is unlikely that you will see any, but be watchful on warm summer evenings and when traveling cross country.

The shape of the land in the north has



The shape of the land in the park has created wide variations in temperature, soil, sunlight, and moisture, and these in turn have resulted in a wide variety of life forms. On the flatlands near the base of the mountains are creosote bush and other drought resistant shrubs. In the canyons, black walnut, hackberry, oak, desert willow, and other trees are common. The canyon walls and ridge tops are covered mostly with agave, yucca, sotol, ocotillo, and desert grasses; and at the higher elevations are juniper, pine, Texas madrone, and, occasionally, a Douglas-fir. In all, more than 600 plant species have been identified. In wet years, a succession of colorful annuals cover the canyons and ridges with a carpet of blooms from spring into fall.

Wildlife abounds, although the nocturnal habits and natural camouflaging of many species keep

them from being seen readily. Most commonly encountered among the mammals are jackrabbits, ringtails, raccoons, skunks, foxes, gophers, wood rats, mice, squirrels, porcupines, and mule deer. Seen less often are coyotes, badgers, bobcats, and mountain lions.

More than 200 species of birds, ranging in size from tiny hummingbirds to the majestic golden eagle, have been identified. During the summer, turkey vultures glide on thermal currents above the canyons, and cave swallows rear young in mud nests plastered high up on the walls of several caves.

## CLIMATE AND SEASONS

Summers are usually warm and winters mild. However, extreme changes can come suddenly at any season of the year. If moisture comes early, *spring* brings an abundance of color as wildflowers and cactus come into bloom. It also brings strong winds. In the *summer*, the bats are flying, agaves blooming, and the fruit of the prickly pear cactus is ripening. Thunderstorms accompanied by brief but often heavy downpours may bring flash floods to the canyon bottoms. In *autumn* squirrels fatten themselves on fruits and seeds in preparation for a long *winter* sleep, reptiles go into hibernation beneath the rocks, and the bats migrate southward. In winter the normally mild weather may be broken by a shortlived snowstorm or a bone-chilling "cold front" sweeping through on gale force winds.

In the caverns, however, the temperature remains virtually constant at 56° year round.



# CARLSBAD CAVERNS

LINCOLN

NATIONAL

FOREST

Walnut

Canyon

VISITOR CENTER

WHITES CITY

SLAUGHTER

CANYON TRAIL

New Cave

RATTLESNAKE SPRINGS

BLACK RIVER

Rattlesnake Springs

DOUBLE TRAIL

OSSEBY TRAIL

Canyon Draw

Bottomless Lakes



Ranger Station



Picnic Area



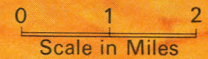
Paved Road



Primitive Road



Trail



TO CARLSBAD 20 MILES



## WHAT TO SEE AND DO

A variety of activities can be enjoyed both above and below ground. The Visitor Center is near the cavern entrance, which is 7 miles west of highway 62-180 at the end of State Route 7. The center is open from 7:30 a.m. to 5 p.m. daily in the winter and from 6 a.m. to 9 p.m. during the summer. Information and orientation services, exhibits, and interpretive publications are available.

*Underground interpretive trips* are offered continuously from 8 a.m. to 3:15 p.m. in the winter and from 7 a.m. to 6 p.m. during the summer. Visitors have a choice of either walking in through the natural entrance on a *complete* 3-mile trip, or entering by elevator for a 1¼-mile walk around the *Big Room*. On both trips, you return to the surface by elevator. Although you may walk at your own pace, the *complete* trip is somewhat strenuous and is not recommended for persons with walking or breathing problems. The most scenic portions of the Big Room are reached by a relatively level trail that will accommodate wheelchairs.

A light sweater or jacket and comfortable walking shoes with rubber soles or heels are recommended.

The fee for underground trips is \$1.50 per person, age 16 and over. Those under 16 and educational groups are admitted free.

Photography, including flash and time exposures, is permitted on all trips. However, photographers must remain on cavern trails and must not rest cameras and tripods on cavern formations.

*Bat flight programs* are scheduled nightly at the entrance amphitheater during the summer. The starting time is adjusted periodically to fit the colony's flight pattern, but it is usually just before sunset. The exact time is posted daily in the Visitor Center.

*Primitive lantern trips* into New Cave, which is near the entrance of Slaughter Canyon, are available seasonally on a limited basis. Inquire at the information desk upon arrival. The trail to this cave involves a strenuous climb (500 feet in elevation) and should be attempted only by those in good physical condition.

*Nature trails* near the cavern entrance and along the Walnut Canyon entrance road offer an opportunity to become acquainted with plants of this semi-arid land. Guided walks into the desert are also scheduled periodically during the main travel season.

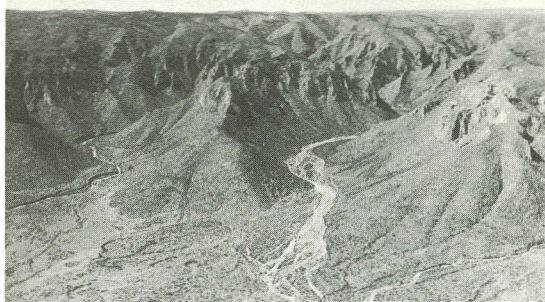
*Sightseeing by car* can be both enjoyable and educational when traveling the park entrance road as it winds through lower Walnut Canyon and then climbs to the top of the Capitan Reef Escarpment. Along the 7-mile route are opportunities to view exposures of the ancient reef and lagoon deposits, wildlife, and unusual desert plants. Roadside exhibits interpret natural features along the route. On clear days, a sweeping panorama of the entire reef escarpment and the Delaware Plain extending more than 100 miles southward into Texas awaits you on the reef crest.

*Hiking and backpacking* opportunities are limited only by the amount of water hikers are able to carry. An adequate supply of water, good boots, and maps are essential. Fire permits are required even though use of native fuels is prohibited. For safety, check with a park ranger before going into the back country.





This aerial view of Slaughter Canyon shows the typical rugged, rock-strewn ridges and desert washes of the park.



A ringtail peeks out of its favorite habitat.



## PRECAUTIONS

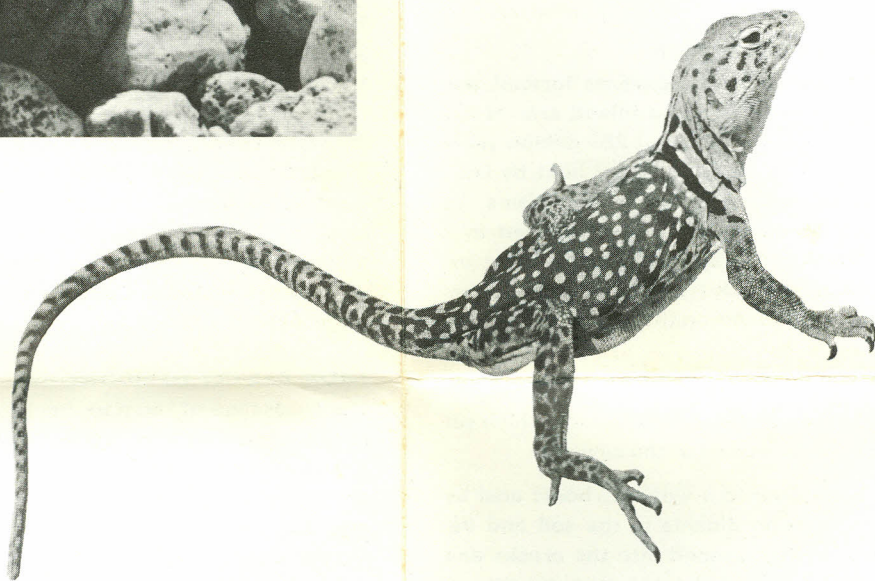
The following suggestions are offered to help make your visit safe and pleasant.

*Wear proper shoes and clothing.* Shoes with synthetic soles often slip on wet downhill trails in the cavern; wear shoes with rubber soles or heels. Boots are advised for surface hikes and the New Cave trip.

*Stay on cavern trails and do not run.* Steep drop-offs and deep pits lie just off the cave trails in many places, and thin crustlike deposits often conceal cavities below. Parents should keep small children at their side. Use the handrails provided.

*If the electrical power fails while you are underground, stop and remain quiet until the lights come on again.* Provisions have been made for such emergencies and standby lighting will be in

The collared lizard sometimes runs upright on its powerful hind legs.



Bats leave the cave's natural entrance on their evening flight.





operation within a few moments. Such failures are relatively rare.

*Observe posted speed limits.* The park roads have been designed for sightseeing and not for high-speed travel. Be alert for deer bounding across the roadway, and for people who have stopped their vehicles to observe or to take photographs.

*Watch for rattlesnakes* when hiking on the surface. If you should see one, do not kill it, simply detour around it.

*Beware of the cactus and other desert plants,* their spines can inflict painful injury. The knifelike lechuguilla agave can even pierce leather shoes.

### **HELP PROTECT YOUR PARK**

*Touching or tapping on cavern formations* is prohibited. Many of the smaller formations are so fragile that they can be broken by a mere touch, and all can be stained by repeated handling. Once damaged, or destroyed, the loss is permanent, for most of the decorations are no longer growing.

*Collecting or disturbing* rocks, plants, or wildlife either above or below ground is prohibited by law.

*Pets* are not allowed within the caverns or public buildings. In other areas, they must be kept on leash. Kennel service is available.

*Entering back-country caves and undeveloped portions of Carlsbad Caverns,* without written permission of the park superintendent is prohibited. Permission is granted only to individuals qualified in "caving" skills and engaged in investigations which have demonstrable value to the National Park Service in its management and understanding of cave resources.

Hunting or molesting wildlife, the use of firearms and metal detectors, and prospecting for mining claims are also prohibited.

### **HOW TO REACH THE PARK**

Carlsbad Caverns National Park is on U.S. 62-180, 20 miles southwest of Carlsbad, N.M., and 150 miles east of El Paso, Tex. Both cities are served by bus and air transportation, and both have rental cars and bus service to the park.

### **ACCOMMODATIONS AND FACILITIES**

A restaurant, gift shop, nursery, and kennel are next to the Visitor Center. Lunches and refreshments are also available underground. These facilities are provided by The Cavern Supply Company, P.O. Drawer Y, Carlsbad, NM 88220. There are no overnight accommodations and camping is not permitted in the park, but numerous motels, hotels, campgrounds and trailer parks are located nearby. Picnic facilities have been provided at Rattlesnake Springs, a detached unit 8 miles southwest of the park entrance on the Slaughter Canyon road.

### **ADMINISTRATION**

Carlsbad Caverns National Park is administered by the National Park Service, U.S. Department of the Interior. A superintendent, whose address is 3225 El Paso Road, P.O. Box 1598, Carlsbad, NM 88220, is in immediate charge.



As the Nation's principal conservation agency, the Department of the Interior has basic responsibilities for water, fish, wildlife, mineral, land, park, and recreational resources. Indian and Territorial affairs are other major concerns of America's "Department of Natural Resources." The Department works to assure the wisest choice in managing all our resources so each will make its full contribution to a better United States—now and in the future.

**National Park Service**

**U.S. DEPARTMENT OF THE INTERIOR**