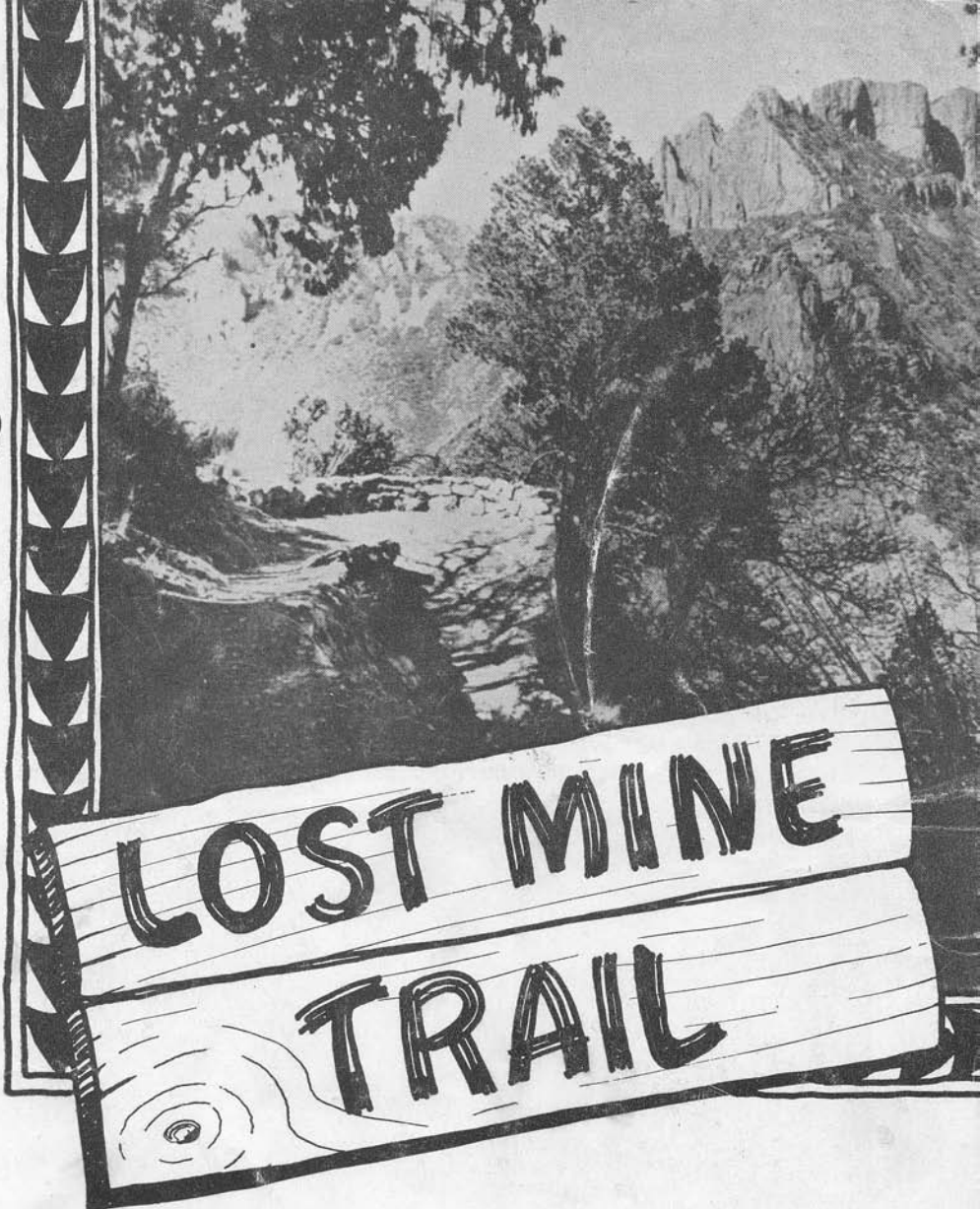


guide  
To



BIG BEND NATIONAL PARK  
TEXAS

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## LEGEND OF THE LOST MINE

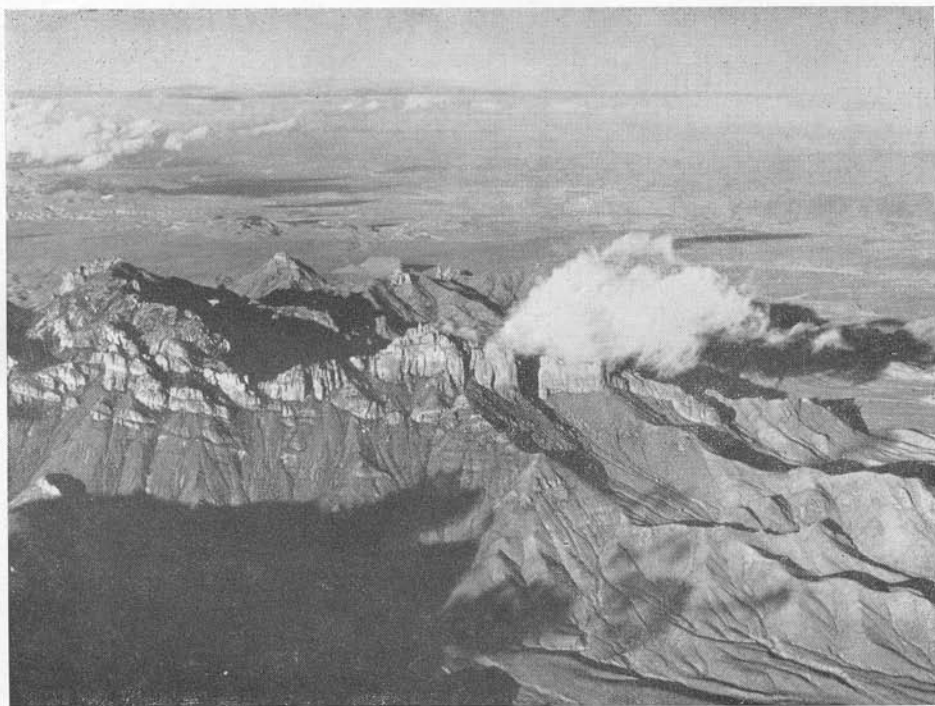
*Of the many romantic legends which abound throughout the West, few match the Lost Mine story from which the peak takes its name. Is it true? Did the mine exist? Or was it a campfire fabrication handed down from generation to generation?*

Early Spanish explorers of the Southwest, in their fervent search for gold and other riches, discovered and developed many mines, some yielding silver and gold. According to legend, a rich ore body was discovered on the highest point of Lost Mine Peak. Life-term prisoners were forced to work the mine. These men were blindfolded on several occasions in their march from the Presidio in San Vicente, Mexico, to prevent them from learning its location. The ruins of this presidio may still be observed some 20 miles southwest of this peak across the Rio Grande in Mexico.

A story relates how the fierce Comanche Indians, who resented the Spaniards' invasion of their homeland and hunting grounds, attacked and killed them to the last man. The last act, so goes the story, was to seal the mine entrance to prevent further exploitation.

Legend states, that if a person stands in the chapel door of San Vicente's mission on Easter morn, he can watch the sun's first rays strike Lost Mine Peak at the exact mine entrance.

*(The cover photograph of this booklet is furnished through the courtesy of Peter Koch.)*



*Lost Mine Peak in the Chisos Mountains*  
(Photo by 111th Photo Sec., Texas Nat'l Guard)

UNITED STATES  
NATIONAL PARK SERVICE  
DEPARTMENT OF THE INTERIOR  
BIG BEND NATIONAL PARK

## LOST MINE TRAIL

This is your guidebook for using the trail which starts at this registration desk. For about one mile of this walk the interesting plants, unusual geological features and other items of interest are explained. Each object of special interest is *marked by a numbered stake*. Refer to the corresponding number in this booklet, and you will find the name of the plant or feature and a description. The information recorded here is necessarily brief, but the rangers will be glad to provide additional information or answer your questions.



*Please Smoke Only at Designated Areas*

1. **ALLIGATOR JUNIPER** (*Juniperus deppeana*). Observe alligator-skin-like bark of the tree which easily identifies this long-growing evergreen and gives it its name. Under favorable conditions the species attains an age in excess of 500 years.

2. **MEXICAN PINON PINE** (*Pinus cembroides*), is the only species of pine found along this trail. Piñon (pin-yone) is the name given by the early Spanish explorers and was described by Cabeza de Vaca in 1536. The seeds are used by Indians for food and in recent years the nuts of a closer relative, *Pinus edulis*, have become an article of commerce.

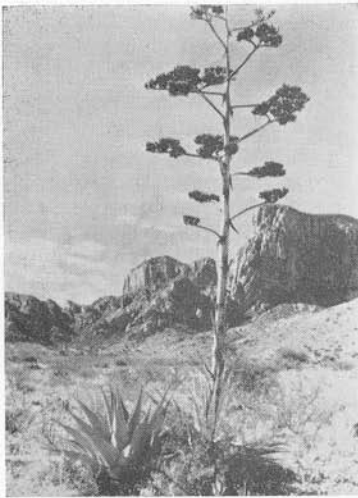
3. **EMORY OAK** (*Quercus emoryi*). Of the several Oaks in the park, this represents one of the larger evergreen groups. The acorns are edible, sweet, and are important as food for birds and small mammals. Notice the glossy Holly-like leaves.

4. **TEXAS MADRONE** (*Arbutus texana*). This beautiful tree has thin, peeling bark. Its red berries, which mature in November, are highly favored by deer which often rise up on their hind legs to reach them. The name "Naked Indian" is sometimes applied because the twigs and branches are the copper color of the Indian torso. A close relative of this Madrone is found along the west coast.

5. **CHISOS RED OAK** (*Quercus gravesii*). Here is another of the Oaks with typical notched or toothed leaf margins. The lovely fall colors of the Chisos Mountains (pronounced CHEE-sole) are principally due to the abundance of these trees whose leaves take on the rusts and reds of autumn.

6. **CATCLAW, CATS-CLAW** (*Acacia greggii*). The many thorns, short and curved like a cat's claw, serve readily to identify this shrub. Flowers, like pale yellow fuzzy caterpillars, are one of the important sources of an excellent honey. Catclaw is one of the most disliked plants in the Southwest, especially by riders, because of the strong thorns which tear the clothing and lacerate the flesh.

7. **PICTURE!** From this point on the trail an excellent view of Green Gulch is obtained. The high point on the left (north) of the gulch is Pulliam Peak, 6,921 feet in elevation. The faraway hills are the Rosillos Mountains, so named because of their roan coloring.



*Century Plant*

8. **CENTURY PLANT** (*Agave scabra*). There are many different species of Century Plants in the Southwest, several of them occurring in Big Bend. Plants of this group furnish many important products in Mexico, and were utilized by Indians in various ways. Among the products are fiber, food, drink (*mescal*), soap and medicine. Century Plants are grown commercially in more than 40 countries. These plants store up food in the root and leaf systems for many years, finally send up one fast-growing flower stalk, mature their seeds, and then die. The bloomstalk grows almost 10 inches a day and represents the largest bloom stem of any North American plant.

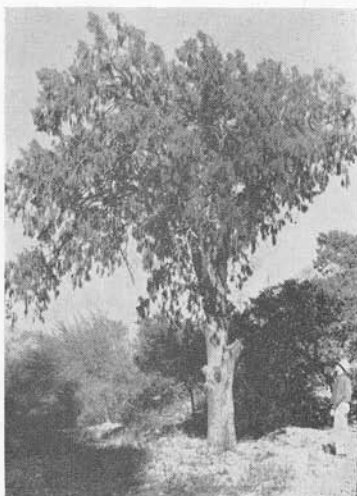
9. **GRAY OAK** (*Quercus grisea*). Yes, there are several species of Oak on this trail, but this particular one is easily recognized by the blue-gray colors of its leaves.

A fine angle view of Casa Grande is obtainable here. This large single mass of volcanic rock (rhyolite) is 7,300 feet in elevation.

10. **LAUREL SUMAC** (*Rhus laurina*). Although this Sumac belongs to the same family as the obnoxious Poison Ivy, it has none of its irritating qualities. Leaves turn brilliant shades of red and orange in the fall. An evergreen relative is found abundantly within the Park.

11. **BASKET GRASS** (*Nolina erumpens*). Although referred to as a grass, this plant belongs to the Lily Family. The narrow, fibrous grass-like leaves often attain a length of 5 feet, making them excellent material for native basketry. The compact clusters of small pinkish-white flowers rarely rise above the rank mass of foliage.

12. **GEOLOGICAL EXPLANATION.** This rock is called conglomerate, because it is formed from a conglomeration of many kinds of rocks. Note the rounded shape of the individual stones caused by wearing away of the sharp corners and edges when the stones were being transported by streams millions of years ago. Later these materials were deposited in beds and under the terrific pressure of overlying masses of sediments were compacted with mineral cementing materials to form the solid mass which you see here.



*Drooping Juniper*

13. **DROOPING JUNIPER** (*Juniperus flaccida*). Appearing to be slightly wilted, the drooping aspects of this graceful evergreen suggests grief. Botanists claim that Big Bend National Park is the only area in the United States in which it is found.

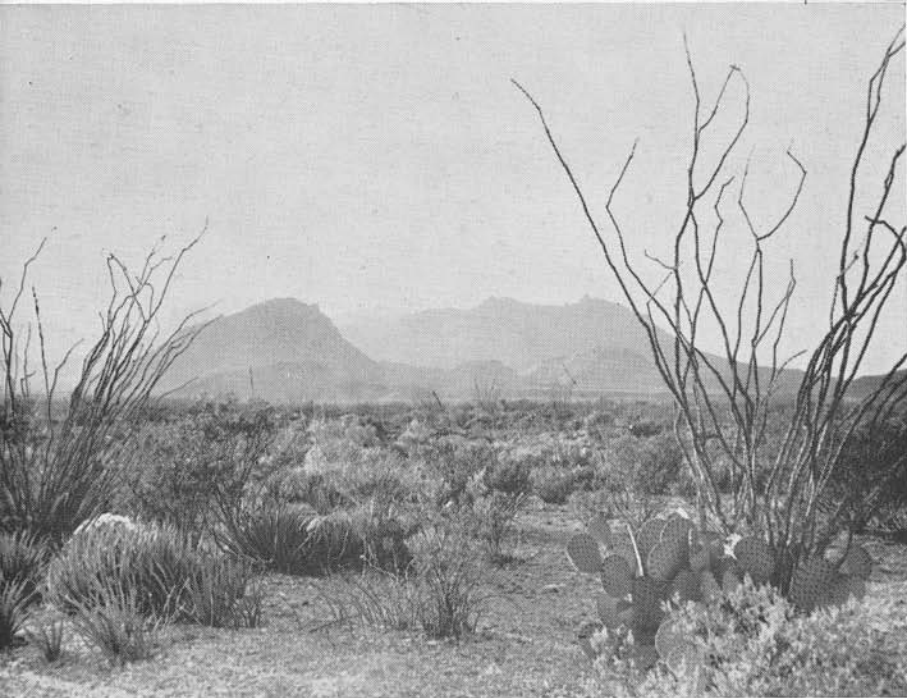
## CACTUS GARDEN

14. **LECHUGUILLA** (*Agave lechuguilla*) (pronounced Lay-choo-GHEE-yuh) is a small species of Century Plant whose leaf crown somewhat resembles a bunch of green bananas. The plant is so well protected by its spine-tipped leaves that even hungry goats refrain from eating it. The fibers within the fleshy leaves are used extensively in northern Mexico for making brushes, matting, coarse twine and rope. The short stem is used as a substitute for soap.

15. **FENDLER'S HEDGEHOG CACTUS, STRAWBERRY CACTUS** (*Echinocereus triglochidiatus*).

This is one of the commonest and most spectacular of our Strawberry or Hedgehog Cacti. Occasionally, plants will have as many as 50 salmon-colored blossoms open at the same time.

16. **PRICKLY PEAR** (*Opuntia engelmannii*) is one of the desert's most useful plants. Its fruits may be eaten raw and delicious jams



*Desert vegetation and Chisos Mountains as seen from the east.*

and jellies may be made from them. When young and tender, the young joints are called "*nopalitas*" (no-pahl-EE-tahs), and are cooked and eaten. Ranchmen burn off the spines to supply hungry cattle with food when the range is poor. In the lower elevations of the park a lovely purple-colored species is found, known as Purple-tinge Cactus.

17. **STRAWBERRY CACTUS, PITAYA** (*Echinocereus stramineus*), (pronounced pih-TY-yah), has one of the desert's tastiest fruits. When ripe, the fruit resembles a strawberry in texture and is most delicious served with cream. The blossom is a deep red and is one of the Park's gems of floral beauty. Large numbers of these dome-shaped plant mounds may be observed along the highways throughout the Park.

18. **BROWN-FLOWERED CACTUS** (*Echinocereus chloranthus*) is one of the so-called Rainbow Cactus group. Notice the banded color separation of the short needles. The small brown flowers grow around the plant in large numbers during the bloom period. Another variety, which grows at lower elevations in the Park, has yellow to orange blossom reaching a diameter up to 4 inches.

19. **MOUNTAIN MAHOGANY** (*Cercocarpus eximius*). The wood is extremely hard, so brittle that it may be broken very easily. Deer browse on the leaves, and, outside the Park, cattle and sheep feed upon it.

20. **LICHEN.** Raise your eyes to the exposed barren escarpments of Casa Grande and other rock outcroppings. Here you observe greens, blacks, and other colors. Much of this color may be attributed to the lichens (LYK-ehnz) encrusting the bare rock surfaces.

The small colorful organisms are the first visible signs of life to gain a foothold on rocks. Without true roots, this little "mutual" obtains moisture from the atmosphere. A lichen is actually a fungus and an alga living together in mutual dependence (one provides board and the other room for both). As a product of their life processes, carbonic acid is formed. This slowly disintegrates the rock, helping to form soil, thus aiding in the production of suitable living conditions for higher types of plants.

21. **ASH** (*Fraxinus sp.*). Ash has long been identified as a very useful wood; even the early Indians utilized it for paddles, bows, arrows, etc. The winged seed resembles a small canoe paddle.

22. **ONE-SEED JUNIPER** (*Juniperus monosperma*). There are four Junipers found in the Park. (You have already seen two of the others along this trail.) This one is so named because it has but one seed in each berry. Junipers (often mis-called Cedars) are distinguished from other cone-bearers by the seeds being enclosed in a berry instead of a cone. The wood is resistant to decay and used much for posts. Of course, in a National Park, trees are preserved for their scenic and watershed protection value and are not harvested for commercial purposes.

23. **ANOTHER PICTURE JUST AHEAD** — Striking view of Juniper Canyon.



*Help Protect the Park from FIRE  
Please Smoke Only in Designated Areas*

## ORIENTATION POINT

As an inducement for hikers desiring to continue farther along this trail, an orientation table has been constructed about 1½ miles beyond this point. The table points out the major landscape features together with their elevations. From the same general area, a spectacular view of the rugged Big Bend country may be enjoyed.

## GEOLOGICAL SIGNIFICANCE

Millions of years ago, the ocean which extended from the Gulf of Mexico to the Arctic Circle covered this portion of west Texas. Muds, sands, and gravels were deposited in the bottom of that ocean. In these sands and gravels were preserved the remains of fish, shellfish, and various other forms of sea life.

Tremendous pressures within the globe's interior caused the earth's surface to rise in this region and the waters to recede. Much of the area became swampy, forming suitable habitat for the giant Dinosaurs. Peat beds were compressed to form coal deposits. The remains of these coal beds as well as of petrified trees and Dinosaur bones may be seen in the



*Sierra del Carmen in Mexico*

rock exposed in various parts of the park area. At a still later date there were more extensive earth movements which caused great breaks to occur in the earth's surface.

Generally speaking, the geologic structure in the Big Bend area is a "sunken block" that might be compared to the result of slicing a watermelon twice. One cut is along the Sierra del Carmen mountains on the east, and the other at Santa Elena Canyon on the west. The area between the two cuts has sunk an average of several thousand feet. The central portion of this block has been arched, forming the Marsical, Chisos and Christmas Mountains.

Part of this uplift was caused by volcanic activity. Large masses of molten rock pushed toward the earth's surface and arched and deformed the overlying sedimentary layers that had long before been deposited on the floor of the ocean. The Chisos Mountains were formed by this volcanic pressure.

As you look south or north, you see an extensive plain that is underlain very largely by sedimentary rock layers. The isolated peaks for the most part were caused by hot lava that pushed up from below, then cooled to make the present highlands. This is also true of the Chisos Mountains which are a much larger mass. Cooling of these melted rocks caused fracture joints, or shrinkage cracks, and weathering along these breaks caused the columns, spires, buttresses, and pinnacles that you see in all directions near you. Forces of erosion have done most of the carving, forming the various rugged features near at hand.

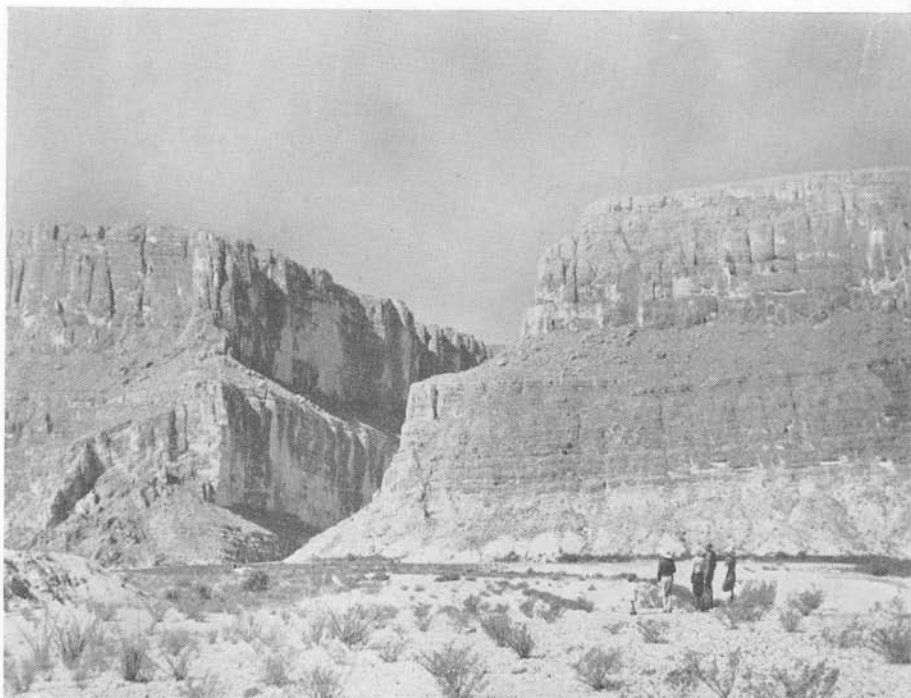
The geological history is very complex and cannot be even summarized in a few paragraphs. Park Rangers can give you additional information regarding the geological history, or explain the origin of features you may wish to know more about.



# WHAT TO DO IN BIG BEND NATIONAL PARK

- |   | Approximate<br>Round Trip<br>Time |
|---|-----------------------------------|
| <b>1. HIKING TRIPS</b>  |                                   |
| A. Lost Mine Trail.....   | 3 hours                           |
| B. Juniper Flats.....   | 2 hours                           |
| C. Window Trail.....  | 3½ hours                          |
| D. South Rim Loop Trail.....                                      | 10 hours                          |
| E. Casa Grande.....   | 4½ hours                          |
| F. Mt. Emory.....   | 5 hours                           |
| G. Ward Mountain.....   | 6 hours                           |
| H. Toll Mountain.....   | 5 hours                           |
| <b>2. HORSEBACK TRAIL TRIPS</b>                                   |                                   |
| A. Juniper Flats.....   | 2 hours                           |
| B. Window Trail.....  | 3½ hours                          |
| C. South Rim Loop Trail.....                                      | 9 hours                           |
| D. Ward Mountain.....   | 6 hours                           |
| E. Mt. Emory.....   | 4½ hours                          |
| F. Toll Mountain.....   | 4½ hours                          |
| G. Pack Trips by special arrangement                              |                                   |
| <b>3. CAMERA TRIPS</b>  |                                   |
| Personally conducted Motor Tour                                   |                                   |
| Frequent stops and photo lectures in:                             |                                   |
| The Basin   |                                   |
| Green Gulch   |                                   |
| Grapevine Hills   |                                   |
| Tornillo Desert   |                                   |
| Also specially arranged camera trips anywhere in the park.        |                                   |
| <b>4. AUTO TRIPS</b>  |                                   |
| A. Santa Elena Canyon.....  | 4-6 hours                         |
| 1. Visit Mouth of Canyon  |                                   |
| 2. Castolon trading post  |                                   |
| 3. Terlingua and Study Butte ghost mining towns<br>(outside park) |                                   |

*Santa Elena Canyon*



- B. Boquillas Canyon .....4-6 hours
1. Mexican village of Boquillas across river in Mexico
  2. Frontier trading post—Hot Springs, hot baths, and limited non-modern cabin facilities
  3. Excellent view of Del Carmen Mountains
5. **SUNSETS**
- A. From the Basin through the "Window"
  - B. Del Carmen from vicinity of Hot Springs and Boquillas
  - C. Chisos Mountains from vicinity of Hot Springs and Boquillas
  - D. Chisos Mountains from vicinity of Santa Elena Canyon and Study Butte Area
6. **SUNRISE**
- A. Over Casa Grande from the Basin
  - B. Over the Del Carmen from vicinity of Hot Springs and Boquillas
  - C. Over the Chisos Mountains from Santa Elena area
7. **WILDLIFE**
- A. Fifty-five mammals have been identified to date
  - B. Approximately 200 birds have been identified to date, including the rare Colima Warbler and Aplomado Falcon
  - C. Fifty-four reptiles, which include four species of turtles, 22 species of lizards and 28 species of snakes
8. **WILDFLOWERS, TREES, AND SHRUBS**  
(1,100 plants identified to date)
- A. Cacti and other desert flowers are usually at their height of bloom from the latter part of March to the middle of April
  - B. Semi-desert shrubs—mostly July, August, and early September, depending upon rain
  - C. Autumn foliage coloring—late November and first half of December
9. **GEOLOGY**
- A. The oldest rocks (Persimmon Gap) are comparable in age and structure to those found in the Appalachian Mountains
  - B. The Lowland area is underlain by rock with fossil content, comparable to the Gulf Coast and Great Plains areas
  - C. Chisos Mountain volcanic area is comparable in age and structure to the great volcanic activity period of the Northwest

*Mariscal Canyon*

(Photo by 111th Photo Sec., Texas Nat'l Guard)



Big Bend is one of the newest of the great, scenic National Parks, having been established June 12, 1944. A unit of the National Park System, it is administered by the National Park Service, U. S. Department of the Interior.

For information about southwestern National Parks and Monuments, inquiries should be addressed to the Regional Director, Region Three, National Park Service, Box 1728, Santa Fe, New Mexico, or to the Superintendents of the individual areas, which are listed with addresses below.

*Administered as a group by the General Superintendent,  
Southwestern National Monuments, Box 1562, Gila Pueblo, Globe, Arizona*

- IN UTAH:** Arches National Monument, Moab  
Natural Bridges National Monument (c/o Arches)  
Rainbow Bridge National Monument (c/o Navajo)
- IN NEW MEXICO:** Aztec Ruins National Monument, Aztec  
Chaco Canyon National Monument, Bloomfield  
El Morro National Monument, El Morro  
Gila Cliff Dwellings National Monument (c/o Gen'l Supt.)  
Gran Quivira National Monument, Gran Quivira
- IN ARIZONA:** Canyon de Chelly National Monument, Chinle  
Casa Grande National Monument, Coolidge  
Chiricahua National Monument, Dos Cabezas  
Coronado National Memorial, Star Route, Hereford  
Montezuma Castle National Monument, Camp Verde  
Navajo National Monument, Tonalea  
Sunset Crater National Monument (c/o Wupatki)  
Tonto National Monument, Roosevelt  
Tumacacori National Monument, Tumacacori  
Tuzigoot National Monument, Clarkdale  
Walnut Canyon National Monument, Rt. 1, Box 790, Flagstaff  
Wupatki National Monument, Tuba Star Route, Flagstaff

*Other areas administered by the National Park Service in the Southwest follow:*

- IN ARIZONA:** Grand Canyon National Monument, Grand Canyon  
Grand Canyon National Park, Grand Canyon  
Organ Pipe Cactus National Monument, Ajo  
Petrified Forest National Monument, Holbrook  
Pipe Spring National Monument, Moccasin  
Saguaro National Monument, Rt. 8, Box 520, Tucson
- IN COLORADO:** Black Canyon of the Gunnison National Monument (c/o Regional  
Director, Santa Fe)  
Colorado National Monument, Fruita  
Great Sand Dunes National Monument, Box 60, Alamosa  
Mesa Verde National Park
- IN NEVADA:** Lake Mead National Recreational Area, Boulder City  
Lehman Caves National Monument, Baker
- IN NEW MEXICO:** Bandelier National Monument, Santa Fe  
Capulin Mountain National Monument, Capulin  
Carlsbad Caverns National Park, Carlsbad  
White Sands National Monument, Box 231, Alamogordo
- IN OKLAHOMA:** Platt National Park, Sulphur
- IN TEXAS:** Big Bend National Park, Texas
- IN UTAH:** Bryce Canyon National Park, Springdale  
Capitol Reef National Monument, Torrey  
Cedar Breaks National Monument (care of Zion)  
Timpanogos Cave National Monument, Pleasant Grove  
Zion National Monument (care of Zion)  
Zion National Park, Springdale

This booklet is published by the  
**SOUTHWESTERN MONUMENTS ASSOCIATION**

Box 1562-P, Gila Pueblo, Globe, Arizona

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are the following booklets of information on Big Bend National Park:

- "A GUIDE FOR THE BIG BEND,"** by Maxwell and Koch may be purchased from National Park Concessions or at Koch's Camera Shop, Big Bend National Park, Texas .....\$1.00
- "BIG BEND NATIONAL PARK,"** by Ray Scott, may be purchased from National Park Concessions, Inc., Big Bend National Park, Texas.....\$ .50
- "WE COME AND GO, Historical Guide to Big Bend National Park,"** By Berta Lassiter, may be purchased from Mrs. Berta Lassiter, Alpine, Texas.....\$1.00
- PHOTOGRAPHS** of scenes in Big Bend National Park, by Peter Koch, may be purchased at Koch's Camera Shop, Big Bend National Park, Texas.....Standard Prices
- "ANIMALS OF THE SOUTHWEST DESERTS,"** Olin and Cannon. Handsome illustrations, full description and life habits of the 42 most interesting and common mammals, members of the strange animal population of the lower desert country of the Southwest below the 4,500 foot elevation. 112 pp., 60 illus., color cover, paper. \$1.00
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