



# ZION & BRYCE CANYON

N A T I O N A L P A R K S

*Utah*

# Zion and Bryce Canyon NATIONAL PARKS · UTAH

ZION · OPEN ALL YEAR

BRYCE CANYON · OPEN MAY 10 TO NOV. 1

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## Events OF HISTORICAL IMPORTANCE

### ZION

- 1776 Father Escalante in search of route to Pacific crossed Virgin River near Hurricane.
- 1826 Jedediah Smith, fur trader, with a party of about 16 men exploring the region, traversed Virgin River.
- 1847 Brigham Young and his band of Mormons founded Salt Lake City and began the colonization of Utah.
- 1858 The colonization of Utah's "Dixie" begun by the Mormons.
- 1858 Zion Canyon discovered by Nephi Johnson, a Mormon scout.
- 1861 Joseph Black explored the canyon, and 1 or 2 years later was followed by a few settlers who farmed in the canyon, which they called "Little Zion."
- 1872 Maj. John Wesley Powell visited the region and gave name "Mukuntuweap" to north fork and "Parunuweap" to east fork of Virgin River.
- 1909 Mukuntuweap National Monument established by Presidential proclamation.
- 1914 Frederick Vining Fisher visited Zion Canyon and gave names to many of the outstanding formations, such as Great White Throne and Angels Landing.
- 1917 Wylie Way Camp, first tourist accommodations, constructed.
- 1918 Monument enlarged and the name changed to Zion by Presidential proclamation.
- 1919 Monument changed to a national park by act of Congress.
- 1923 President Warren G. Harding visited the park on June 27.
- 1927 First successful ascent of Great White Throne.

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- 1930 East Rim road and tunnel completed and dedicated.
- 1933 First recorded ascent of West Temple.

### BRYCE CANYON

- 1866 James Andrus and party of Indian fighters from St. George, Utah, passed through the Bryce region.
- 1872 Bryce Canyon visited by A. H. Thompson, F. S. Dellenbaugh, and party on geological mission.
- 1875 The settlements of Escalante and Cannonville established. Ebenezer Bryce, for whom the park is named, settled at lower gateway to Bryce Canyon.
- 1876 First written description of Bryce Canyon made by T. C. Bailey, U. S. deputy surveyor, who viewed the canyon from Sunset Point.
- 1923 Bryce Canyon National Monument created by Presidential proclamation.
- 1924 Act of Congress authorized the creation of Utah National Park.
- 1928 Bryce Canyon National Park formally created by Presidential proclamation. Act of Congress changed name from Utah National Park to Bryce Canyon.



UNITED STATES DEPARTMENT OF THE  
INTERIOR - - - Harold L. Ickes, *Secretary*

NATIONAL PARK SERVICE

Arno B. Cammerer, *Director*



BRYCE CANYON  
FROM  
BRYCE POINT



FOR GORGEOUS COLORING and unusual erosional formations the canyon country of southwestern Utah and northern Arizona has no equal. The canyons themselves are stupendous in size and formation, and of brilliant hues, glowing, almost unbelievably. It is in this country that Zion and Bryce Canyon National Parks and Cedar Breaks and Zion National Monuments are located.

#### ZION NATIONAL PARK

Zion National Park, Utah, created by act of Congress approved November 19, 1919, was, prior to its reservation as a park, a national monument, called by the Indian name of the river, Mukuntuweap. The first monument proclamation was issued by President Taft on July 31, 1909. On

March 18, 1918, the monument was enlarged by President Wilson to include a total of 76,800 acres, and the name changed to Zion. This name is especially appropriate, for since early days its principal accessible feature has been called Zion Canyon by the Mormon settlers, who, being deeply religious, felt that the great mountains forming the canyon walls were in truth temples of God. The act of Congress giving the reservation national-park status did not increase its area. By an act of Congress approved June 13, 1930, an additional 18,088 acres on the east and south sides were included in the park. The total area is 134.91 square miles.

A "Yosemite Valley done in oils" comes close to a description of the principal feature of Zion National Park. This gorgeous valley has about the same dimensions as the famous Yosemite Valley. Extraordinary as are the sandstone forms, the color is what most amazes. The deep red

of the Vermilion Cliff is the prevailing tint. Two-thirds of the way up, these marvelous walls and temples are painted gorgeous reds; then, above the reds, they rise in startling white. Sometimes the white is surmounted by a cap of vivid red, remains of another red stratum which once overlay all. The Vermilion Cliff rests upon 350 feet of even a more insistent red relieved by mauve and purple shale. That in turn rests upon a hundred feet of other variegated strata. Through these successive layers of sands and shales and limestones, the Virgin River has cut its amazing valley. The entrance is between two gigantic stone masses of complicated architectural proportions which are named the West Temple and The Watchman.

Soon after passing the south gate, the traveler stands in a canyon of nearly perpendicular sides more than half a mile deep, half a mile wide at the bottom, a mile wide from crest to crest, whose walls blaze with color. On the right is Bridge Mountain, so named because there is an interesting natural bridge or "flying buttress" high up on its face, visible from the checking station. It is in the face of this mountain, on the Pine Creek side, that the famous Zion Tunnel is located. Beyond Bridge Mountain rises the massive East Temple, rich in hue, followed in succession by the Twin Brothers and the Mountain-of-the-Sun. On the opposite side of the canyon are to be seen the Streaked Wall and The Sentinel. Farther up is the Court of the Patriarchs above which stand the Three Patriarchs. On the same side of the canyon, opposite Zion Lodge, are Lady Mountain and the group of Mount Majestic, Castle Dome, and Spearhead Point.

Above the Lodge, against the east wall, stands the most remarkable rock formation of the region, a colossal truncated dome known as the Great White Throne. Seen through a saddle in the low red rock wall lying in front of it, this dome appears white above and red below. In reality, however, the huge rock is gray or white in color, with faint pink washings showing in places down its sides. Directly opposite it is a lesser monolith, although itself gigantic, called Angels Landing.

North of the Great White Throne the chiseling stream makes a great swing, past a projecting rock formation on the left known as the Great Organ. Farther on the mystic temple of Sinawava is entered where the road ends. This is a great natural amphitheater, encircled with walls that appear to close behind as one enters. The floor is lined with deciduous trees accompanied by a remarkable assortment of other vegetation. In the center of the circle stand two large stone pillars. The larger is the altar, the smaller one the pulpit.

From the temple for a distance of a mile up the river, a fine trail has

been built up to The Narrows. At the end of the trail the cliffs rise sheer from the edge of the river, and further explorations must be made on horseback with a qualified guide. No park visitor should leave the park until he has at least made this mile walk to The Narrows.

In contrast to the desert surroundings many springs trickle from various levels in the walls of the canyon, developing new tributary gorges, alcoves, and grottoes, which are decorated with trailing ferns and flowering plants. In the early spring the melting snows bring an added volume of water, which causes numerous waterfalls, while a really magnificent spectacle is produced by summer rains, when cascades tumble everywhere from the polished domes and cliffs.

#### PARK SEASON

The four seasons of the year are unusually distinctive in the park, each one being different from the others and affording wonderful, changing spectacles. During the winter, when the levels and slopes are under a blanket of snow, the colored cliffs stand out in startling contrast against the white. In the spring, when the snows on the higher elevations are melting, many foaming white waterfalls are to be seen cascading over the cliff faces or falling sheer from high overhanging niches. The fall months of the year bring the most delightful weather; clear, sparkling days are the rule, the sky is deepest blue, and the deciduous trees of the valley floor and slopes take on variegated coloring.

The roads to and within Zion National Park are open, and accommodations are available the entire year. Zion Lodge is open from May 30 to September 30, but the South Entrance Camp, with cafeteria, store, and housekeeping cabins, is operated throughout the year, as is the new south entrance public campground. The Grotto Campground is open from May 1 to November 1.

#### HOW TO REACH ZION

Zion National Park is reached from Cedar City, Utah, on the Union Pacific System. From this point motorbus service is provided by the Utah Parks Co.

Busses of the Burlington Transportation Co. and Interstate Transit Lines operate from Salt Lake City and Los Angeles to Cedar City, where passengers may transfer to the busses of the Utah Parks Co. for the park. On prior notice, connections can be made with the Santa Fe Trails System at Mount Carmel Junction.

Motorists on the Arrowhead Trail, United States Highway No. 91, from the north may turn off at Anderson Junction, 33 miles south of Cedar





THE GREAT WHITE THRONE

City, and those from the south may turn off at Harrisburg Bench Junction, 10 miles north of St. George, and reach Zion over State Route No. 15. Motorists on United States Highway No. 89 should turn off on State Route No. 15 at Mount Carmel Junction, entering Zion by the east entrance. All main and connecting highways serving Zion National Park are constructed to high standard and are hard surfaced.

High-speed, de luxe airplane service from all points in the United States to Salt Lake City is available through United Air Lines. Service is also available from Los Angeles by Western Air Express, using the fast and comfortable Douglas planes, with stops at Las Vegas, Nev., and Salt Lake City, Utah. For persons of limited time this service offers a splendid opportunity to visit the park.

#### ADMINISTRATION

The representative of the National Park Service in immediate charge of Zion National Park is the superintendent, Paul R. Franke, whose post-office address is Zion National Park, Utah. All complaints and suggestions regarding service in the park should be addressed to him.

#### EDUCATIONAL SERVICE

During the summer season ranger naturalists conduct parties into the field for nature study several times daily, leaving the Temple of Sinawava according to schedules posted by the naturalist service. Evening lectures on the natural features of the park are also given daily at the public auto camp and Zion Lodge by members of the educational division.

All park visitors are urged to avail themselves of this educational service. Schedules of nature walks, lectures, and other activities are posted in public places throughout the park. The educational service is furnished free of charge by the Government.

#### MUSEUM

The National Park Service has established an official information office and museum at park headquarters which is open daily throughout the year. Here park visitors may secure information and publications regarding this and other national parks free of charge. The museum exhibits are arranged to give a general idea of the outstanding features of Zion National park. These exhibits cover such subjects as geology, biology, archeology, and history.

#### ROADS IN THE PARK

There are 20 miles of improved roads in Zion Park. One road leads from the park's entrance to the Temple of Sinawava, a distance of 8



ZION NATIONAL PARK—ZION CANYON AREA

miles. No one has really seen Zion Canyon until he has made a trip over this road, and visitors driving in closed cars should make frequent stops so that they may get out and enjoy the magnificent view. The canyon is so narrow and its walls so high that a top of any kind to a car cuts off the view almost completely.

Also within the park is a stretch of the remarkable Zion-Mount Carmel Highway, 11½ miles in length. Running east from the Virgin River Bridge, this road forms a connecting link between United States Highways Nos. 91 and 89. Its total length from park headquarters to Mount Carmel Junction is 25 miles. Some of the most remarkable views of southern Utah are to be found along this road. While the tunnel is the most spectacular portion, other sections are of even greater scenic interest.

DISTANCE IN MILES ON MAIN ROAD FROM PARK SOUTH ENTRANCE  
TO POINTS OF INTEREST

<i>Read down</i>	<i>Read up</i>
0.0 Zion National Park south boundary line.....	8.0
0.1 Checking station.....	7.9
0.6 Cafeteria and cabin area.....	7.4
0.6 South Entrance Public Campground.....	7.5
0.6 Oak Creek.....	7.4
0.8 West Temple, Altar of Sacrifice, on west side.....	7.2
1.0 Bridge Mountain on east.....	7.0
1.3 Park headquarters, museum, and information office.....	6.7
1.5 Virgin River Bridge and Y.....	6.5
3.2 Court of the Patriarchs; garage.....	4.8
4.2 Zion Lodge.....	3.8
4.5 Emerald Pool Canyon on west.....	3.5
4.8 Spear Head Point.....	3.2
5.0 Grotto Campground.....	3.0
5.5 Angels Landing.....	2.5
5.9 The Great White Throne.....	2.1
6.2 East Rim Horse Trail and Weeping Rock Trail (parking space for cars)...	1.8
6.5 The Great Organ, below road.....	1.5
6.8 The Great White Throne, looking south through saddle.....	1.2
7.9 Sphinx on Altar in the Temple.....	0.1
8.0 Temple of Sinawava and end of road.....	0.0

ROAD DISTANCES FROM PARK HEADQUARTERS TO POINTS OUTSIDE PARK

	<i>Miles</i>
Bryce Canyon National Park, elevation 8,000 feet.....	89
Kanab, Utah, elevation 4,925 feet.....	44
Grand Canyon National Park, North Rim, elevation 8,153 feet.....	125
Pipe Spring National Monument, elevation 5,000 feet (via Fredonia).....	66
Cedar Breaks National Monument, elevation 10,400 feet.....	86
Cedar City, elevation 5,840 feet.....	61

ROAD DISTANCES FROM PARK HEADQUARTERS TO POINTS  
OUTSIDE PARK—continued

	<i>Miles</i>
Salt Lake City, Utah.....	325
St. George, Utah (via Hurricane).....	42
Las Vegas, Nev.....	171
Los Angeles, Calif.....	480

THE TRAIL SYSTEM

Approximately 26 miles of trails lead to the more important sections of the park which are not reached by roads. These trails are well maintained and can be used at all seasons of the year, with the exception of those to the rims of the canyon which are closed by snow during the winter months.

A number of footpaths at different levels in the canyon have also been constructed. The most popular of these paths is the one extending a distance of 1 mile up the canyon from the end of the road at the Temple of Sinawava to the beginning of The Narrows. The trail is paved with asphalt macadam. Practically all other foot trails in the canyon are for the more strenuous hiker, but its pavement and easy grades adapt The Narrows Trail to use by everyone.

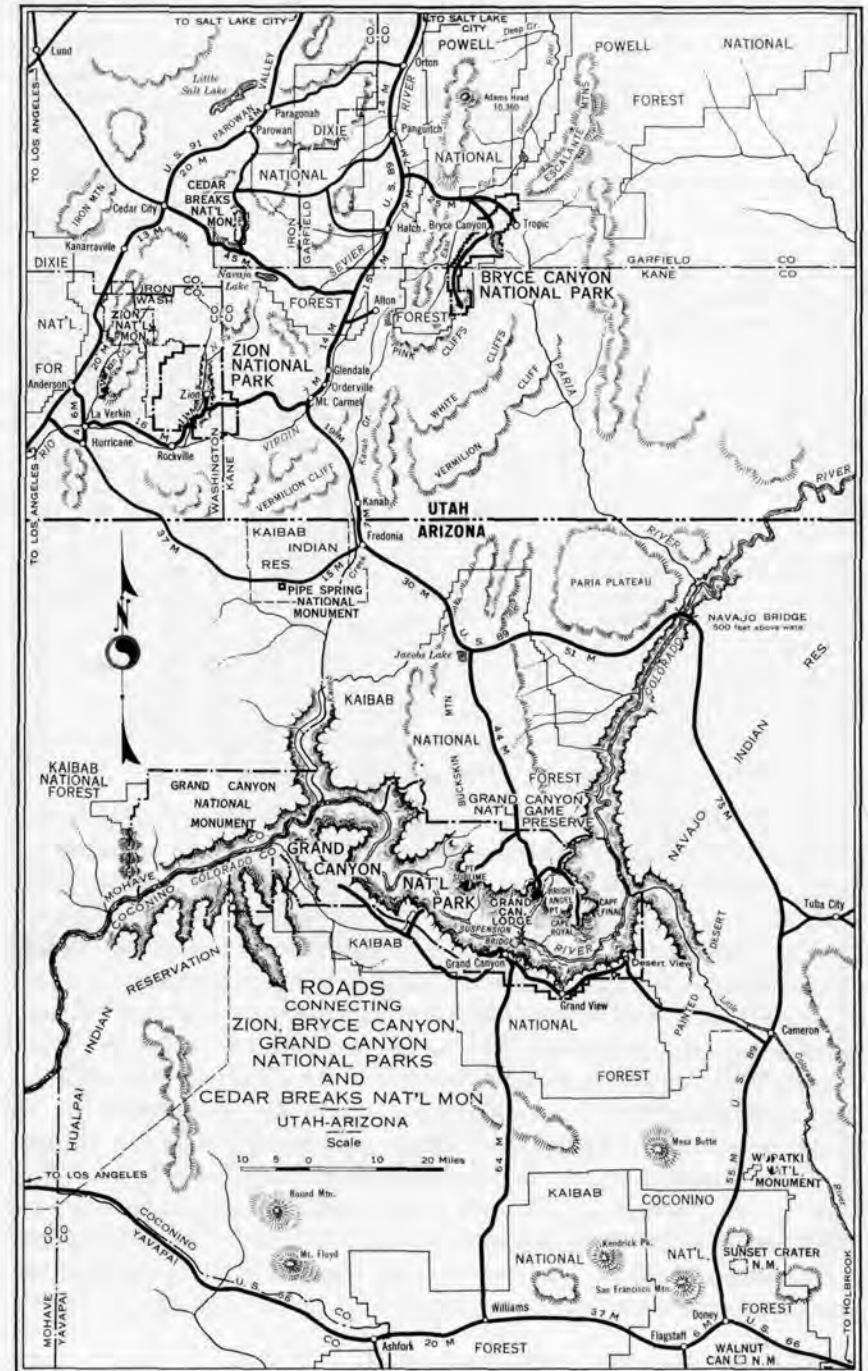
Visitors may secure detailed trail information from park rangers or from the attendants on duty at the park museum.

TRAIL DISTANCES FROM ZION LODGE TO POINTS IN PARK

	Miles	Time required
<i>West Rim</i>		
Scout Lookout . . . . .	4	½ day.
Angels Landing . . . . .	4¾	Do.
Spring on Rim . . . . .	7	1 day.
Great West Canyon . . . . .	9	Do.
<i>East Rim</i>		
Observation Point (elevation, 6,508 feet) . . . . .	6¼	Do.
Ranger station . . . . .	7½	Do.
Hidden Canyon . . . . .	3	½ day.
Deer Trap . . . . .	12	1 day. <sup>1</sup>
Junction of road at Esplins Ranch . . . . .	14	Do.
<i>Foot Trails on Floor</i>		
Weeping Rock . . . . .	2½	2 hours.
Narrows (from road) . . . . .	1	Do. <sup>2</sup>
Court of the Patriarchs . . . . .	2¼	½ day.
Lady Mountain . . . . .	2¼	5 hours.
Emerald Pool . . . . .	2	3 hours.

<sup>1</sup> Poor trail.

<sup>2</sup> With naturalist.









until all of the private land holdings within the proposed park boundaries had been decided to the Government. The transfer was finally accomplished on September 15, 1928, and the park formally dedicated to public use the following day.

Bryce Canyon National Park includes some of the most interesting exposures of the Pink Cliff formation. The rocks which are present in this formation are among the most colorful of any forming the earth's crust. The major beauty spots of the area are found where forces of erosion have cut back into the plateau, forming amphitheatres or wide canyons filled with pinnacles and grotesque forms.

The entire park area, with some 30 miles of Pink Cliffs, can be seen from Rainbow Mountain, at the southern end of the park. Included in this panorama are such beautiful amphitheatres as Black Birch Canyon, Agua Canyon, and Willis Creek. In addition, there are magnificent views across "the land of the purpose sage" to Navajo Mountain, 80 miles to the east, and to the Kaibab Plateau and the Trumbull Mountains to the south, the latter 99 miles distant.

Bryce Canyon, however, is the most spectacular and best known of all the wonders and, due to the fact that the original park area included only this one canyon, the park takes its name from this feature. The canyon was named after Ebenezer Bryce, a Mormon pioneer, who was the first to settle near its mouth in the early seventies, and not after the famous English statesman.

In reality Bryce is not a canyon; rather it is a great horseshoe-shaped bowl or amphitheater cut by water erosion into the Paunsaugunt Plateau and extending down a thousand feet through its pink and white marly limestone. The character of the area is well indicated by the Paiute Indian name, "Unka-timpe-wa-wince-pock-ich," which is translated as, "red rocks standing like men in a bowl-shaped canyon." The amphitheater is 3 miles in length and about 2 miles wide, and is filled to the brim with myriads of fantastic figures cut by weathering influences, chiefly by running water, wind, and changes in temperature. Domes, spires, and temples predominate, decorated in all the colors of the spectrum but with reds, pinks, and creams predominating.

A series of fine horseback and foot trails have been built in the interesting area under the rim. No visitor should leave until he has had close-up views of the formations. Trails led into Queen's Garden, the Silent City, Fairyland, Wall Street, Peek-a-boo Canyon, and other more remote points, each with its well-named peculiar and distinctive forms. Trails are all easily traveled; horseback trips can be arranged in half- or full-day units to suit the individual.



*Grant photo*

#### VIEW OF SUNRISE AND SUNSET POINTS FROM CATHEDRAL RIDGE

The National Park Service has completed a fine road, which follows the high rim the full length of the park plateau, with short spurs to scenic viewpoints. Twenty miles of paved road now lead to Inspiration Point, Bryce Point, Paria View, the Natural Bridge, and Rainbow Point, at the plateau's end. A ranger naturalist conducts an auto caravan over this route every afternoon during the summer season, leaving Bryce museum according to schedules posted by the naturalist service.

Each evening at 8:30 illustrated lectures are given at the lodge and at the campfire lecture circle near the public campground by members of the staff, who also conduct short hiking trips into Bryce Canyon, leaving Sunset Point every day of the summer season according to schedules posted by the naturalist service.

Visitors are urged to use these facilities, which are provided free of charge by the Government.

#### GENERAL INFORMATION

Bryce Canyon National Park is administered as a unit with Zion National Park and Cedar Breaks and Zion National Monuments. The representative of the National Park Service in immediate charge is the superintendent of Zion National Park, Paul R. Franke, whose post-office address is Zion National Park, Utah. All complaints and suggestions regarding service in the park should be addressed to him.

Information concerning the park is available at the Bryce museum, located near the public auto camp and cafeteria.

Bryce Canyon Lodge is open from May 30 to October 1; the cafeteria and motor camp from early May to late October. The free public camp-

ground is open from about April 15 to about November 15, although these dates may vary considerably because of weather conditions.

The roads are open during spring, summer, and fall, and efforts are made to keep the roads in the vicinity of headquarters open throughout the winter, except for brief periods during and immediately following storms.

An attractive free public auto camp is maintained by the Government. Pure water is available, and sanitary conveniences have been provided. Groceries and campers' supplies may be purchased in the store at the Bryce Camp.

For those not carrying their own equipment and desiring to visit the park after the closing dates of the lodge and camp, there are camps near the park where fairly good accommodations can be found at any time of the year.

#### HOW TO REACH BRYCE

In order to reach Bryce private motorists should leave the main highway, United States Highway 89, 7 miles south of the town of Panguitch. Turning to the east the road follows up Red Canyon, a brilliantly colored little gorge which is often mistaken for Bryce Canyon itself. The approach to Bryce is unusual; no evidence of the canyon is visible until the visitor walks on to the rim and suddenly has revealed to him the great sight in all its breath-taking beauty. Improved highways make Bryce Canyon Park easily accessible, except during the winter.

Travelers by rail may reach the park over the Union Pacific System from Salt Lake City to Cedar City, Utah, thence by motorbus to Bryce.

Busses of the Burlington Transportation Co. and Interstate Transit Lines operate from Salt Lake City and Los Angeles to Cedar City, where passengers going to the park may transfer to busses of the Utah Parks Co. On prior notice, connections may be made with the Santa Fe Trails System at Marysvale.

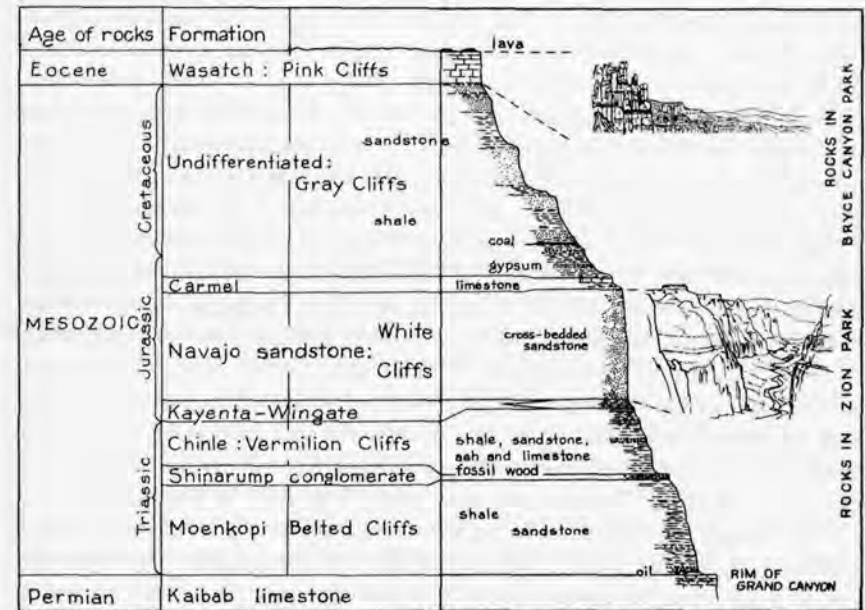
High-speed de luxe airplane service from all points in the United States to Salt Lake City is available through United Air Lines. Service is also available from Los Angeles by Western Air Express, using the fast and comfortable Douglas planes, with stops at Las Vegas, Nev., and Salt Lake City, Utah.

#### GENERAL INFORMATION RELATING TO GEOLOGY OF ZION AND BRYCE CANYON NATIONAL PARKS<sup>1</sup>

##### REGIONAL FEATURES

In Zion and Bryce Canyon National Parks the type of scenery peculiar to the plateaus of southern Utah and northern Arizona attains its most

<sup>1</sup> Condensed from an article by H. E. Gregory, U. S. Geological Survey.



*Geological sketch of Zion National Park by H. E. Gregory*

GENERALIZED SECTION OF SEDIMENTS IN ZION AND BRYCE CANYONS

complete expression. Layer upon layer of shales and sandstones have been carved into architectural forms, astonishingly alike for size and color. The long stretches of even skyline seen on approaching the parks from Cedar City (west), Panguitch (north), and Grand Canyon (south) give an impression of extensive flat surfaces that terminate in lines of cliffs, but viewpoints within the parks reveal a ruggedness possessed by few other regions. The canyons are so narrow, so deep, and so thickly interlaced, and the edges of the strata so continuously exposed that the region seems made up of gorges, cliffs, and mesas intimately associated with a marvelous variety of minor erosion forms. The parks might be considered as mountainous regions in which departures of many thousand feet from a general surface are downward rather than upward.

The canyons and adjoining terraces are spectacular illustrations of erosion. They show with diagrammatic clearness the work of running water, rain, frost, and wind, of ground water and chemical agencies active throughout a long period of time. The horizontal tables and benches, broken by vertical lines that in distant view appear to dominate the landscape, are normal features of erosion of plateau lands in an arid climate. The tabular forms are the edges and surfaces of hard strata from which softer



layers have been stripped. The vertical lines mark the position of fractures (joints)—lines of weakness which erosion enlarges into grooves and miniature canyons. As they entrench themselves in horizontal layers of rock that vary in resistance to erosion, the master streams and their tributaries are developing stairlike profiles on their enclosing walls. Cliffs in resistant rocks and slopes in weak rock constitute risers and treads that vary in steepness and height with the thickness of the strata involved. Thus near the south entrance to Zion Park the edge of a layer of hard conglomerate is a vertical cliff, its top a platform. Above this platform a long slope of shales, broken by many benches developed in hard beds, extends upward to the great cliff faces of West Temple and the Watchman. In front of Zion Lodge a slope of weak shales leads upward to a cliff of resistant sandstone above which a slope of shale extends to the vertical wall of Lady Mountain. In Bryce Canyon the rim road is on the highest tread of a giant rock stairway that as viewed from Rainbow Point leads downward in steps 30 to 400 feet high to the flat lands 3,000 feet below.

The streams at work in the parks, though relatively small, have steep gradients, including rapids and waterfalls, and are supplied with disintegrated rock material swept from the ledges by torrential rains about as fast as formed. They are therefore powerful agents of erosion, especially in times of flood. The fresh, sharp, angular profile of mesas, ridges, and canyon walls and the extensive areas of bare rock are maintained by the rapid down-cutting and prompt removal of rock waste. The resulting land forms reflect the aridity and the topographic youth of southern Utah and contrast strongly with the rounded hills, the broad valleys, the plant-covered slopes, and the deep soils of more humid regions.

#### GEOLOGIC HISTORY

A large part of geologic history is revealed in the canyon walls of Zion and Bryce Canyon National Parks. Just as Grand Canyon is the best known record of ancient geologic history, Zion Canyon records most clearly the events of medieval geological time, and Bryce reveals much of modern geologic history. The story of Zion begins where that of Grand Canyon ends, and ends where Bryce begins. The rocks exposed in these three national parks incorporate the records of a billion years.

A study of the rocks of Zion and Bryce Canyon shows that during the last 200,000,000 years the region comprising the parks has witnessed many changes in landscape and climate. At times it was covered by the sea, at other times broad rivers traversed its surface, and at still other times it was swept by desert winds. Most of the rocks were laid down by water as gravel, sand, mud, and limy ooze. They have been converted into solid

rock by the weight of layers above them and by lime, silica, and the iron that cement their grains. Embedded in the rocks are fossil sea shells, fish, trees, snails, and the bones and tracks of land animals that sought their food on flood plains, in forests, or among sand dunes. The most conspicuous remains are those of dinosaurs—huge reptiles that so dominated the life of their time that the Mesozoic is known as the “age of dinosaurs.”

The accumulation of some 8,000 feet of strata (Mesozoic and Tertiary) on top of 4,000 feet of older (Paleozoic) beds, which are exposed in Grand Canyon, may be considered the first of three major events in the development of the marvelous landscapes of the Zion-Bryce region; it provided the material from which the huge scenic features were later carved. The second event was a regional uplift which elevated the previously low-lying top beds of the series (Wasatch, Pink Cliffs) to a height of nearly 2 miles above sea level. As a result of this movement, the earth's crust was broken into huge rectangular blocks by north-south fractures or faults. Three of these great faults can be seen while traveling in the vicinity of the parks: the Hurricane fault in the Hurricane Cliffs, west of Zion; the Paunsaugunt fault in the cliffs of Bryce; and the Sevier fault along the Mount Carmel Road between the two parks.

In consequence of the uplift the third major event, the present cycle of erosion, was initiated. The streams became strong and swift and so were able to cut deeply into the underlying rock and carry away the land waste. In this process the streams have removed many cubic miles of rocks which if replaced would fill the present canyons and build up their bordering land to the level of the lofty Markagunt and Paunsaugunt Plateaus. The gigantic features of Zion and Bryce Canyon National Parks mark a stage in the process of erosion that began long ago and which if continued without interruption will convert the present rugged landscape into plains near sea level.

#### DISTINCTIVE FEATURES OF ZION CANYON

The crowning glory of Zion Park is Zion Canyon, the best known example of a deep, narrow, vertically walled chasm readily accessible for observation. Zion Canyon through much of its course is about as deep as it is wide, though in the narrows it is 2,000 feet deep and less than 50 feet wide. On its floor is an automobile highway, continued upstream by trails.

Zion Canyon was made by the North Fork of Virgin River, the stream which now flows through it. It is not a crack in the earth's crust or a gorge scooped out by glacier ice and conveniently placed to serve as a runway for rain that falls on the surrounding highlands. Before the Virgin began to flow there was no canyon. During the long period since its course was established the river has slowly deepened its channel and

extended it headward until its original shallow valley has become a long narrow trench between towering walls. Though now deeply entrenched in the rocks of the Kolob Plateau, the river maintains substantially its original pattern. It flows in the same direction, and the curves and straight stretches of its present walls duplicate the meanders of the stream when it flowed some 5,000 feet above its present level.

For many thousand years the Virgin and its tributaries have been busy with two tasks; namely, deepening their channels and transporting material weathered from the canyon walls. At present the Virgin carries away from the park each year about 3,000,000 tons of ground-up rock at an average rate of 180 carloads a day. For such effective work the many-branched Virgin seems incompetent. But though relatively small in volume, this stream system falls nearly 70 feet to the mile (nine times the fall of the Colorado in Grand Canyon) and is at work on rock, chiefly sandstone, that disintegrates with exceptional ease. Many tributaries are on bare rock, little retarded by vegetation, and are fed by short but violent showers. Consequently, they are brought to flood stage not only seasonally but with each period of heavy rainfall. Because they flow only in response to showers, the smaller tributaries are unable to cut channels as deep as the perennial master stream. From their mouths high on the canyon walls, they descend as waterfalls.

Though they are primarily responsible for the depth and position of the canyons, the Virgin itself and the other streams heading on the adjoining plateaus are only incidentally concerned with the detailed carving that makes Zion Canyon unique. The walls are retreating in consequence of ground water which emerges as springs and seeps, of rain which falls directly into the canyon, of water that spills over the rim, of frost and tree roots which pry off slabs, and of chemical agencies which weaken the rock by the removal of the cement about individual grains. Continuous sapping at or near the contact of the porous Navajo sandstone and the more impervious underlying beds has developed alcoves in the canyon walls at Wiley Retreat, the Stadium, Weeping Rock, Emerald Pool, Birch Creek, Oak Creek, and elsewhere.

In the development of the amazing variety of architectural features on the canyon walls, the composition and structure of the Navajo formation have served as controlling guides. In addition to the bedding planes—horizontal, oblique, and curved surfaces—the Navajo has developed parting planes (joints) that extend downward for short distances or pass through the formation from top to bottom. These bedding planes and joints determine the shape and size of the blocks that spall off from the towering cliff walls. Blocks embedded in the cliffs, blocks surrounded by open





joints, blocks partly detached, blocks that rest precariously on some temporary support, and blocks that have fallen to the talus below indicate steps in the retreat of the canyon walls. Unlike that of humid regions, this type of erosion progresses from below upward; it causes the canyon to widen and still retain its vertical walls.

#### DISTINCTIVE FEATURES OF BRYCE CANYON

In its regional setting Bryce Canyon National Park is the southeastern border of the extensive Paunsaugunt Plateau. It comprises two areas of strongly contrasted topography that meet in a line that marks the rim of the plateau and the top of its bordering cliffs. Back from the rim the plateau surface on which the park buildings and the automobile roads have been constructed is generally flat land traversed by broad, shallow valleys in which erosion is inconspicuous. Below the rim erosion has produced a region of remarkable ruggedness. It might naturally be supposed that the beautiful amphitheater at the head of Bryce Canyon had been carved by waters pouring down from the plateau above. But the plateau streams contribute nothing; they flow away from the rim. The chief sculpturing agents are the rain and snow that fall directly into the canyon. In producing the amazing variety of erosion features the streams have been aided by frost that pries fragments from the cliffs and by chemical agencies that decompose the rock and supply its vivid color.

The development of the park landscape was made possible by movements within the earth's crust which brought originally low-lying strata to an altitude exceeding 8,000 feet. Streamways on the flat top of this uplifted block were little affected, but with greatly steepened gradients streams around the borders of the newly made plateau became powerful. The Paria and its swiftly flowing tributaries have cut deeply into the face of the Paunsaugunt and carried billions of tons of ground-up rock to the Colorado. At the present time erosion by Bryce Creek, Yellow Creek, Willis Creek, Podunk Creek, and many smaller streams, is causing the plateau face to retreat northwestward, and these streams are taking into their drainage areas channels that formerly carried waters northward to Sevier River.

The drab colored landscape along the southeast border of the park has been developed in alternating beds of shale, coal, and sandstone (Cretaceous age); in the resulting erosion forms, slopes, mounds, rounded ridges, and valleys with inclined or steplike sides predominate. The brightly colored rocks that form the topmost cliffs and terminate abruptly in such headlands as Steamboat Mountain, Bryce Point, and Rainbow Point are resistant limestones of Tertiary age (Wasatch formation). They erode

as vertical walls (Pink Cliffs) which weathering has developed into the astonishing display of architectural forms that make Bryce Canyon distinctive.

#### WILDLIFE

Visitors to Zion and Bryce Canyon National Parks will be surprised at the interesting and varied forms of wildlife to be found there. The common large game animals are the Rocky Mountain mule deer. They are quite numerous and can often be seen by park guests, though in the summer they usually range the rims of the canyons. Bighorn are present in Zion, but spend most of their time in the most inaccessible portions of the higher country, hence are seldom seen. At rare intervals motorists report small bands along the Zion-Mount Carmel Highway near the tunnel. Signs of mountain lion are often found in the park and occasionally a glimpse of the animal is caught. Coyotes are not numerous in Zion, but are often heard in Bryce. Bobcat tracks are frequently observed in mud or snow; the cats, however, are rarely visible. Many small animals, such as porcupines, marmots, chipmunks, and gray squirrels, are abundant and can be seen almost everywhere.

Bird life is interesting and the visitor will find most of the arid or semi-arid types in Zion, together with a few forms typical of areas of heavier rainfall. The rare water ouzel can be numbered among the latter. At Bryce will be found many high mountain forms, such as crossbills, Clark nutcrackers, and even gray jays, commonly known as "camp robbers." Probably the most absorbing of all to those who are acquainted with them are the many types of lizards, such as the scaly lizard, the Bailey collared lizard, and the rare leopard lizard.

#### ACCOMMODATIONS AND EXPENSES

Attractive lodges are operated by Utah Parks Co. in both Zion and Bryce Canyon Parks. They consist of central buildings and cabins of "standard" and "de luxe" types. The latter have private bath, porch, and fireplace. De luxe cabin rates, European plan, are \$5 per day for 1 person, \$6.50 for 2, and \$8.25 for 3 persons, and the standard lodge cabin rates are \$2.25 per day for 1 person and \$3.50 per day for 2 persons. A 15 percent discount is allowed for a stay of 1 week or longer. Meals in lodge dining room are table d'hote, breakfast and luncheon \$1 each and dinner \$1.25. Children under 8 years of age are allowed half rates for meals. Zion and Bryce Canyon Lodges are open from May 30 to September 30.

Evening entertainments are provided at both lodges by student employees; ranger naturalists give illustrated lectures.

Housekeeping camps at both parks provide cafeteria, store, housekeeping cabins, and sleeping tents. For 1 or 2 persons the rates are \$3.25 in

the standard housekeeping cabins, \$3 in converted housekeeping cabins, and \$1.70 in sleeping tents; for 3 or 4 persons in standard housekeeping cabins, \$4.50 per day, including bedding, linen, and maid service. Rooms with private toilet and shower bath (at Zion only), \$4 for 1 or 2 persons. The housekeeping cabins are electrically lighted, have running water, and are equipped with double beds, cooking stove, table, sink, shelves, and chairs. The sleeping tents have 2 military cots. Bryce Camp is open from about May 1 to October 31. Zion Camp is operated throughout the year.

#### POST OFFICE AND COMMUNICATION SERVICE

Each lodge is provided with post office, telegraph, and long-distance telephone service. The post office address for Zion Lodge is Zion National Park, Utah, and for Bryce Canyon Lodge, Bryce Canyon National Park, Utah.

#### MISCELLANEOUS SERVICES

In each lodge fountain service is available. A full line of photographs and hand-colored views of Zion and Bryce Canyon Parks is on sale, and laboratories are maintained for developing and printing pictures.

Curio stores, making a specialty of Indian handicraft, including silver work, baskets, and Navajo rugs, are operated.

Garage service, including storage, repairs, tires, batteries, gasoline, and oil is provided by the Utah Parks Co. in each park during the regular lodge season.

A registered nurse is on duty at each lodge when it is in operation.

An attractive swimming pool is located at Zion Lodge.

In the cabin camps, food supplies may be obtained, as well as curios, post cards, etc.

#### PUBLIC CAMPGROUNDS

Free public campgrounds for visitors carrying their own equipment are maintained in each park. In Zion the Grotto Campground is open May 1 to October 1; the South Entrance Campground all year. The Bryce Public Campground remains open as long as weather conditions permit. Winter conditions prevailing at this elevation of 8,000 feet normally make camping impracticable from November until the middle of April.

#### SADDLE HORSES

Saddle horses may be hired for \$1.50 for 2 hours or less, \$3 for 4 hours or less, and \$5 for 8 hours. Escorted trips to the East or West Rim of Zion Canyon and to Bryce Canyon Natural Bridge are made daily and cost \$5 a person. Escorted half-day horseback trips to The Narrows or Angels Landing in Zion Park and into Bryce Canyon at Bryce Park cost



*Grant photo*

MOTORISTS PARK ON OVERLOOK FOR VIEW OF CEDAR BREAKS



\$3. Special guides, if available, may be obtained for \$5 a day or \$3 for a half day or less. Riding habits may be rented at the lodges.

#### SIDE TRIPS BY BUS

An automobile trip from Zion Lodge to the Temple of Sinawava may be made for \$1.

In Bryce Canyon Park the Rim Road trip by motor, including Bryce Point, Paria View, Inspiration Point, Natural Bridge, and Rainbow Point, costs \$3.

#### SPECIAL TRIPS

Motorbus transportation to Zion National Park, the Kaibab Forest, the North Rim of the Grand Canyon, Cedar Breaks, and Bryce Canyon is available from Cedar City, Utah, on the Union Pacific System.

This booklet is issued once a year *and rates mentioned herein may have changed slightly since issuance*, but the latest rates approved by the Secretary of the Interior are on file with the superintendent and park operator.

#### CEDAR BREAKS NATIONAL MONUMENT

Twenty miles east of Cedar City, within the Dixie National Forest, where the high plateau breaks away to the west, is a great amphitheater called Cedar Breaks, in the Pink Cliffs formation. The more spectacular part of the formation was created a national monument by the proclamation of President Franklin D. Roosevelt on August 22, 1933, and placed under the administration of the National Park Service. The monument embraces an area of 5,836.68 acres.

While Cedar Breaks is cut from the same geological formation as Bryce Canyon, there is a marked difference between these two scenic areas. There are not countless numbers of outstanding temples, spires, and minarets in the Cedar Breaks bowl, but Cedar Breaks is on a more gigantic scale and has a greater variety of tints. The Pink Cliffs here have a thickness of nearly 2,000 feet, and 47 different shades of color have been distinguished.

The heavily forested rim attains an altitude of 10,700 feet. The cliffs are white or orange at the top, breaking into tints of deep rose and coral. The high elevation also affords an excellent distant view of mountains and desert.

The Utah Parks Co. has provided a comfortable lodge with an attractive dining room, lobby, and rest rooms. Sleeping accommodations are available in cabins operated in connection with the lodge at the rate of \$2.25 for one, and \$3.50 for two persons in a standard cabin room. Housekeeping

cabin rooms are \$3 per day for one or two persons, including blankets, linen, and maid service. Dining service at Cedar Breaks Lodge is à la carte or table d'hôte; breakfast \$1, luncheon \$1, and dinner \$1.25. Groceries, campers' supplies, gasoline, and oil may be procured. Cedar Breaks Lodge is open from about June 1 to September 20.

A free public campground is maintained where water, cooking fireplaces, and fuel are furnished.

The season of accessibility varies with weather conditions, but is usually from early June to the first of November. On account of the high altitude, snows persist until late spring. During the summer season, the National Park Service maintains an information office and small museum near the parking area at Point Supreme.

Cedar Breaks is included in the loop tour operated out of Cedar City by Utah Parks Co.

#### ZION NATIONAL MONUMENT

Forming the western border of Zion National Park and extending northwestward is Zion National Monument, an area including 49,150 acres of geologically important and scenic land, with the marvelous Kolob Canyons as its principal feature. Although practically unknown to the general public, these canyons constitute one of the most unusual attractions of southern Utah.

#### OTHER NEARBY SCENIC FEATURES

##### UTAH'S "DIXIE"

About 20 miles south of Cedar City the Arrowhead Trail, U S 91, crosses the southern lip of the great intermountain basin which once contained the waters of prehistoric Lake Bonneville and enters the great Colorado River Basin.

From this point the road steadily descends into the valley of the Virgin River. The outstanding feature of this part of the ride is the great Hurricane Fault which forms the bold escarpment to the left. Here the land to the west has dropped several thousand feet, leaving the eastern area a great suspended mesa with an edge ragged as a rip saw and overlooking a stretch of country extending far into Nevada and Arizona. The Virgin River Valley, blessed with rich soil, and accompanied by an abundance of water for irrigation, produces all which characterizes a semitropic America, save citrus fruits. In the early days of Utah's history, before the railroads came, practically all of the cotton used in the State was produced in this valley. As a result, the country came to be known as Utah's "Dixie," and the name is still used. This part of Utah was settled by the Mormons in the sixties.

Formal entry into "Dixie" is made at Andersons Ranch which is 33 miles south of Cedar City, and the point from which the Zion Park Highway branches off from the Arrowhead Trail, or U S 91. From here the route is easterly through the little village of Toquerville, up the face of the great fault, and thence up the Virgin River past the villages of Virgin, Rockville, and Springdale to Zion Park.

#### NORTH RIM OF THE GRAND CANYON

An excellent highway leads from Zion and Bryce Canyon National Parks and Cedar Breaks National Monument to the Grand Canyon National Park in Arizona. U S 89, which goes to the canyon, is reached from Bryce via Red Canyon; from Cedar Breaks via the Cedar-Long Valley Highway; and from Zion via the spectacular Zion-Mount Carmel Highway. On arriving at U S 89 from any of these points, one follows the route south through Kanab, Fredonia, the Kaibab Forest, past the Jacob Lake Station, and on to the North Rim of the Grand Canyon.

The road ends on Bright Angel Point at Grand Canyon Lodge. From the Lodge many delightful side trips may be made to points of vantage in the park for wonderful vistas of the canyon. Saddle horses may be rented at the Lodge for various trips over a number of bridle paths recently completed. Automobile trips are available to Cape Royal, Point Imperial, and other points of interest. At Grand Canyon Lodge arrangements may also be made for trips by muleback into the Grand Canyon, including Roaring Springs, Ribbon Falls, and Phantom Ranch, and to El Tovar Hotel on the South Rim. The post-office address on the North Rim is Kaibab Forest, Ariz.

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#### NATIONAL PARKS IN BRIEF

- ABRAHAM LINCOLN, KY.—Birthplace of Abraham Lincoln. Established 1916; 0.17 square miles.
- ACADIA, MAINE.—Combination of mountain and seacoast scenery. Established 1919; 26.01 square miles.
- BRYCE CANYON, UTAH.—Canyons filled with exquisitely colored pinnacles. Established 1928; 56.23 square miles.
- CARLSBAD CAVERNS, N. MEX.—Beautifully decorated limestone caverns. Established 1930; 15.75 square miles.
- CRATER LAKE, OREG.—Beautiful lake in crater of extinct volcano. Established 1902; 250.52 square miles.
- FORT McHENRY, MD.—Its defense in 1814 inspired writing of Star Spangled Banner. Established 1925; 0.07 square miles.
- GENERAL GRANT, CALIF.—General Grant Tree and grove of Big Trees. Established 1890; 3.98 square miles.
- GLACIER, MONT.—Unsurpassed alpine scenery; 200 lakes; 60 glaciers. Established 1910; 1,537.98 square miles.
- GRAND CANYON, ARIZ.—World's greatest example of erosion. Established 1919; 1,008 square miles.
- GRAND TETON, WYO.—Most spectacular portion of Teton Mountains. Established 1929; 150 square miles.
- GREAT SMOKY MOUNTAINS, N. C.-TENN.—Massive mountain uplift; magnificent forests. Established for protection 1930; 683.75 square miles.
- HAWAII: ISLANDS OF HAWAII AND MAUI.—Interesting volcanic areas. Established 1916; 248.54 square miles.
- HOT SPRINGS, ARK.—Forty-seven hot springs reserved by the Federal Government in 1832 to prevent exploitation of waters. Made national park in 1921; 1.54 square miles.
- LASSEN VOLCANIC, CALIF.—Only recently active volcano in United States proper. Established 1916; 163.48 square miles.
- MAMMOTH CAVE, KY.—Interesting caverns, including spectacular onyx cave formation. Established for protection 1936; 60.2 square miles.
- MESA VERDE, COLO.—Most notable cliff dwellings in United States. Established 1906; 80.21 square miles.
- MOUNT MCKINLEY, ALASKA.—Highest mountain in North America. Established 1917; 3,030.46 square miles.
- MOUNT RAINIER, WASH.—Largest accessible single-peak glacier system. Established 1899; 377.78 square miles.
- OLYMPIC, WASH.—Forests of unusual density; rare Roosevelt elk. Established 1938; 1,012.5 square miles.
- PLATT, OKLA.—Mineral springs. Established 1906; 1.32 square miles.
- ROCKY MOUNTAIN, COLO.—Peaks from 11,000 to 14,255 feet in heart of Rockies. Established 1915; 405.33 square miles.
- SEQUOIA, CALIF.—Outstanding groves of Sequoia gigantea. Established 1890; 604 square miles.
- SHENANDOAH, VA.—Outstanding scenic area in Blue Ridge. Established 1935; 282.14 square miles.
- WIND CAVE, S. DAK.—Beautiful cavern of peculiar formations. Established 1903; 19.75 square miles.
- YELLOWSTONE: WYO.-MONT.-IDAHO.—World's greatest geyser area; an outstanding game preserve. Established 1872; 3,471.51 square miles.
- YOSEMITE, CALIF.—Valley of world-famous beauty; spectacular waterfalls; magnificent High Sierra country. Established 1890; 1,176.41 square miles.
- ZION, UTAH.—Zion Canyon 1,500 to 2,500 feet deep. Spectacular coloring. Established 1919; 138.04 square miles.



## RULES AND REGULATIONS

[Briefed]

THE PARK REGULATIONS are designed for the protection of the natural beauties and scenery, as well as for the comfort and convenience of visitors. The following synopsis is for convenient reference and general guidance of visitors:

*Preservation of natural features.*—The parks are established primarily for preservation of natural features. Do not destroy or disturb flowers, trees, animals, etc. Writing on or otherwise defacing rocks and other natural features is strictly prohibited. Hunting and the use of firearms are prohibited.

*Camping.*—Camp only in established campgrounds. Keep your camping area clean. BE CAREFUL WITH FIRE. Picnicking in the galleries of Zion Tunnel is not permitted. Lunching and picnicking are prohibited except in public auto camp. Camping limited to 30 days.

*Disorderly conduct.*—Proper conduct is required of all visitors for the benefit of other who are entitled to get the fullest possible enjoyment from the park.

*Pets.*—If you are carrying a dog, cat, or other pet, you may take it into and through the park provided it is at all times kept tied or confined within the car.

*Trails.*—Do not attempt to make short cuts; to do so may endanger yourself as well as others using the trails. Before attempting the more difficult trails seek advice from a park ranger.

*Automobile regulations.*—(a) PERMIT.—A charge of \$1 for each automobile is made at Bryce Canyon and Zion National Parks. One permit is good for both parks, and is good for the remainder of the year in which issued.

(b) CAREFUL DRIVING.—The roads in the park are built purely for scenic purposes, not as high-speed thoroughfares. Observe the usual rules of the road; keep to right; do not park on curves; pass cars going in the same direction only when the road ahead is clear and the vision unobstructed.

(c) LIGHTS.—Your car must have its lights in proper condition before you will be permitted to enter Zion National Park.

*Penalties.*—Maximum penalty for violation of park regulations is \$500 and/or imprisonment for 6 months.

*Miscellaneous.*—The park rangers are employed to help and advise visitors as well as to enforce regulations. When in doubt, ask a ranger. A complete copy of the park rules and regulations is available on request.