

The National Parks of America

Stephen Tyng Mather

Director, National Park Service

SINCE the automobile has moved from the class of luxuries to that of necessities and brought into being good roads throughout the country, visiting the national parks has become one of our great outdoor sports. There are now nineteen of these reservations to visit, most of them in the public land states of the West. Two, however, are in our territories, Mount McKinley in Alaska, and the Hawaii National Park in the Territory of Hawaii. Another, the only one east of the Mississippi River, is Lafayette, on Mount Desert Island, Maine. Authority for the creation of several other Eastern national parks has been granted by Congress, on the condition that the land indicated be given to the United States. Work on the acquisition of funds for buying the lands, or of the lands themselves, is fast progressing in the areas of the Great Smoky Mountains and Shenandoah proposed parks, and the outlook is bright for the inclusion of these two areas in the national park system in the not far distant future.

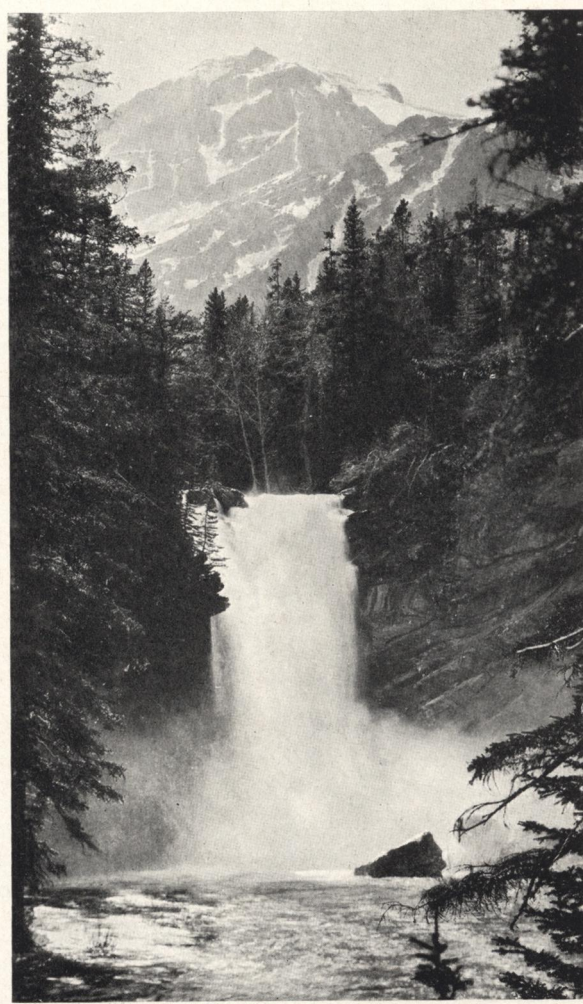
For the man with a craving for a vacation in the open, plenty of time at his disposal, and his own car, I can think of no more delightful trip than one over the National Park-to-Park Highway, taking in all the major parks. If this trip started at Denver, a logical way would be first to visit Rocky Mountain National Park, only a few mile away. From here the trip would continue up to Yellowstone, then to Glacier on the Canadian Border. From Glacier one would go west, to visit the coast parks of Mount Rainier, Washington; Crater Lake in Oregon; and Lassen Volcanic, Yosemite, and Sequoia and General Grant in California. Then the trail turns back east, leading on to Grand Canyon of the Colorado, Zion, and Mesa Verde, and thence back to Denver.

Geographical Grouping

The Western parks naturally fall into certain definite geographical groups, convenient for studying or visiting. The first of these groups, from an Eastern standpoint, contains the three national parks in the

Rocky Mountain region—Rocky Mountain, Yellowstone, and Glacier. The Rocky Mountain Park was reserved because of the characteristic section of the Rockies within its borders. Here are towering peaks, many from 11,000 to 14,250 feet in altitude, which are yet easy of access to the visitor, and which contain interesting records of the work done by glaciers during the ice age. Here timber line is 11,000 feet above sea level, and the mountain slopes to this point are covered with thick forests of spruce and fir. Grass-covered, park-like valleys on both sides of the range form an interesting contrast and present excellent opportunities for camping and fishing. The Fall River Road across the park goes over the Fall River Pass at an elevation of 11,797 feet. There is perpetual snow here, and one of the difficulties of caring for park travel is opening the pass in time for the first influx of summer tourists.

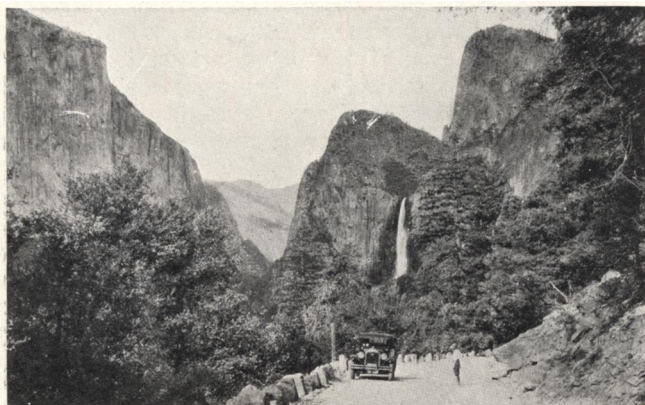
Yellowstone, the next park in this group, is particularly famed for its geysers and hot springs formations. Nearly the entire area of the park, over 3,300 square miles, exhibits hot-water phenomena of some variety, but the most important and best known of the geysers are confined to three basins lying close together in the middle west side of the park. Were there no geysers, however, Yellowstone's canyon, cut through volcanic rock of variegated coloring, would in itself be sufficient to warrant the establishment of the park. It is a thousand feet deep, with its sides carved and fretted by frost and erosion into most interesting forms. The predominating color is yellow, but the whole is streaked and stratified in every shade from deepest orange to faintest lemon, from deep crimson through all the brick shades to the softest pink, from black through all the grays and pearls to glistening white. The color scheme is completed by the varying greens of the river plunging over Yellowstone Falls and foaming far beneath in the canyon, and of the trees and shrubs, and by the blues of



Trick Falls, Glacier National Park Hileman Photo

the sky above. This park is also interesting as one of our largest and most important wild-life preserves, with large herds of buffalo, antelope, elk, deer, and bear, a considerable number of moose and mountain sheep, and smaller animals in abundance.

Here the means of entertainment are many, and the visitor may motor, ride horseback, or hike, as the spirit moves him, may live in excellent hotels, put up his tent in the public camp grounds, or carry



In the Yosemite National Park
El Capitan is on the left and Bridal Veil Falls on the right

his camping paraphernalia off into the wilderness where he can be entirely alone with Nature. Fishing in this park is good, especially off the beaten track, where the fish are less wary. The road system of the park, which totals 356 miles, reaches the main points of interest. The greater part of the Yellowstone, however, is wilderness area, reached only by trail.

The third park of this region is Glacier, in Montana, hanging down from the Canadian Boundary like a boy's pocket and as interestingly filled. This section of the Rockies is particularly rugged, and in the hollows of its mountain tops, or in cirques near their summit, lie more than sixty small glaciers, the remainders of ancient ice monsters that once covered all but the highest mountain peaks. Here the natural scenery of Switzerland is surpassed. From the mountain tops rush sparkling streams, and there are two hundred and fifty known lakes of unusual beauty. This is the most colorful part of the Rockies. To the north lie Canada's Rocky Mountain parks, with still more rugged mountains, but they are not comparable in coloring to Glacier's peaks. This is primarily a trail park, although motor roads do lead to many points of interest and work is now in progress on the Transmountain Road, which when completed will make possible travel by motor from one side to the other across the Continental Divide. It is predicted that this road will be the most spectacular mountain highway that exists at this elevation. The difficulties of location were enormous, and its construction is a Herculean task. It is hoped the road may be ready for use in about four years. Until then the mountain passes will have to be negotiated on horseback, if one wishes to cross the park. Motorists can, however, ship their machines around the park by rail from the east to the west side, should they want to cross the park by trail.

Crater Lake and Mount Rainier naturally group

together sometimes with Yellowstone and Glacier included. Crater Lake is unique. It is the result of a gigantic disturbance that occurred ages ago, which caused the entire upper part of Mount Mazama to collapse upon itself, as though pulled inward into some subterranean cavern. This left a huge crater in the mountain sides, flanked by high lava walls. Some time later, after the internal fires had died down, the abyss filled with water, and today contains a lake of deepest blue, 2,000 feet deep in places, with lava walls rising yet another 1,000 feet above its surface to the encircling rim. The lake has no visible inlet of any sort, nor is there any stream running out of it. It is believed its waters escape by underground channels and reappear in the Klamath River, a few miles away. Crater Lake is one of the most beautiful spots in America. The gray lava rim is remarkably sculptured, and makes a fitting frame for the brilliant waters, which shade from faintest turquoise along the edges, to the deepest Prussian blue. Two lava islands, probably the remains of old volcanic cones, add a picturesque touch. One of them, curiously carved, from a distance suggests a ship under full sail, and is known as Phantom Ship. Fishing in the lake is especially good.

Mount Rainier also is volcanic in origin, but is now famous for its single-peak glacier system, which far exceeds in size and impressive beauty any other in the United States. Twenty-eight named rivers of ice flow down the mountain sides, and there are others unnamed. Seen upon a map, or from an airplane, it resembles a gigantic frozen octopus stretching icy tentacles down upon all sides into the flower fields and forests below. In all there are 48 square miles of these glaciers, ranging in width from 500 feet to a mile, and in thickness from 50 feet to many hundreds. Nisqually, the best known of the glaciers, is 5 miles long and at Paradise Valley is a half-mile wide. Measurements have shown that



Ice Caves of Paradise Glacier, Rainier National Park

this glacier has receded more than 1,000 feet in the past forty years. At this time of the year the flow of the glaciers downward is greatly accelerated, the rate of motion of the larger being from 12 to 18 inches a day during the summer. The wild flower fields of Mount Rainier are especially noted for the profusion and brilliancy of their blooms. Rainier is one of the parks open all year, and the opportunity

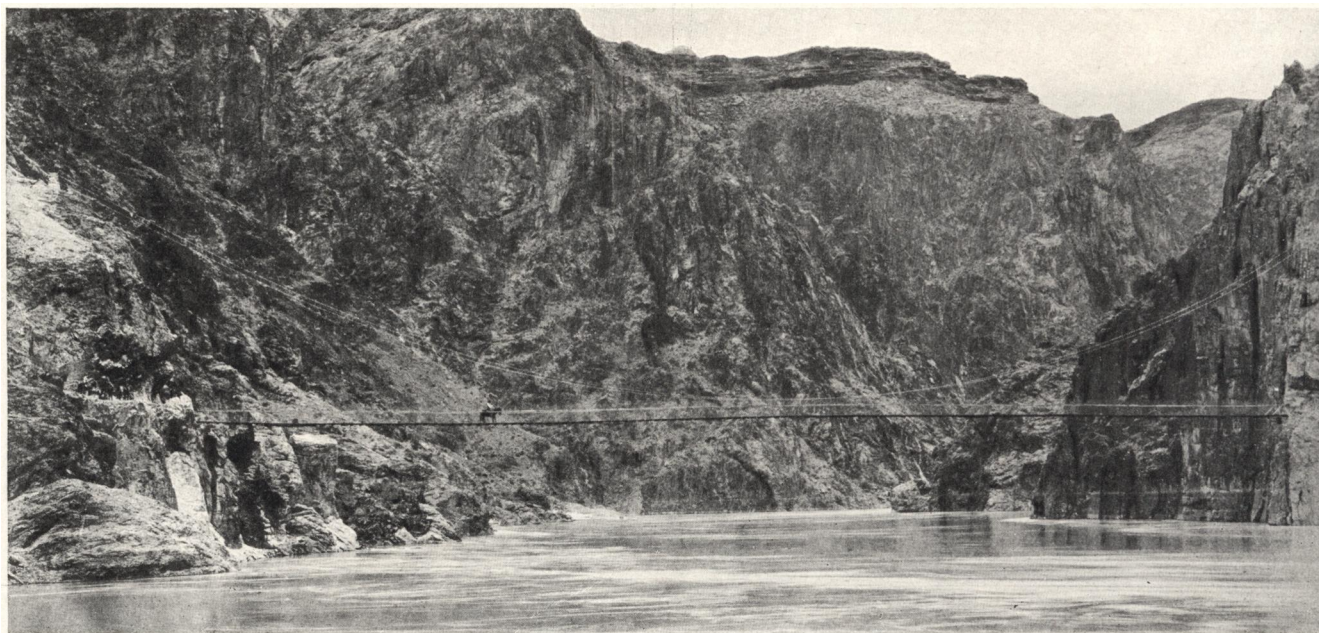
afforded here to enjoy ice and snow sports draws large crowds during the winter months.

In California there are four national parks. Yosemite, only a day's ride from San Francisco by train or automobile, is the largest of these, and is the most visited park of the system. Famous the world over for Yosemite Valley, with its sheer, precipitous walls of gray granite and its high waterfalls, it also takes in a magnificent mountain section, with tremendous granite peaks, buttressed by pinnacled spurs, spattered with snow and small glaciers, and containing other valleys and waterfalls only slightly less impressive than those of Yosemite Valley. While the Valley itself covers an area of only 7 or 8 square miles, the park is a scenic wilderness of 1,125 square miles. The crest of the Sierra Nevada Range forms the eastern boundary of the park, and in this area is crossed by road only at one point—lofty Tioga Pass. From the snows covering this mountainous rampart on the east, innumerable streams converge into the two river systems that had most to do with forming the symmetrical valleys of the region. Had Nature been an engineer, she could not have improved upon Yosemite Valley while it was in the making. The Valley is also a winter resort, often warm enough in winter on one side for light clothing, with snow for winter sports across in the shadow of the cliffs. The completion last year of the new all-year road to El Portal, near the entrance to the park, resulted in a tremendous increase in park visitors. During the winter, devotees of cold-weather sports even pitched their camps on the snowy floor of the Valley. Yet another attraction of the park is its groves of Big Trees, the *Sequoia gigantea*.

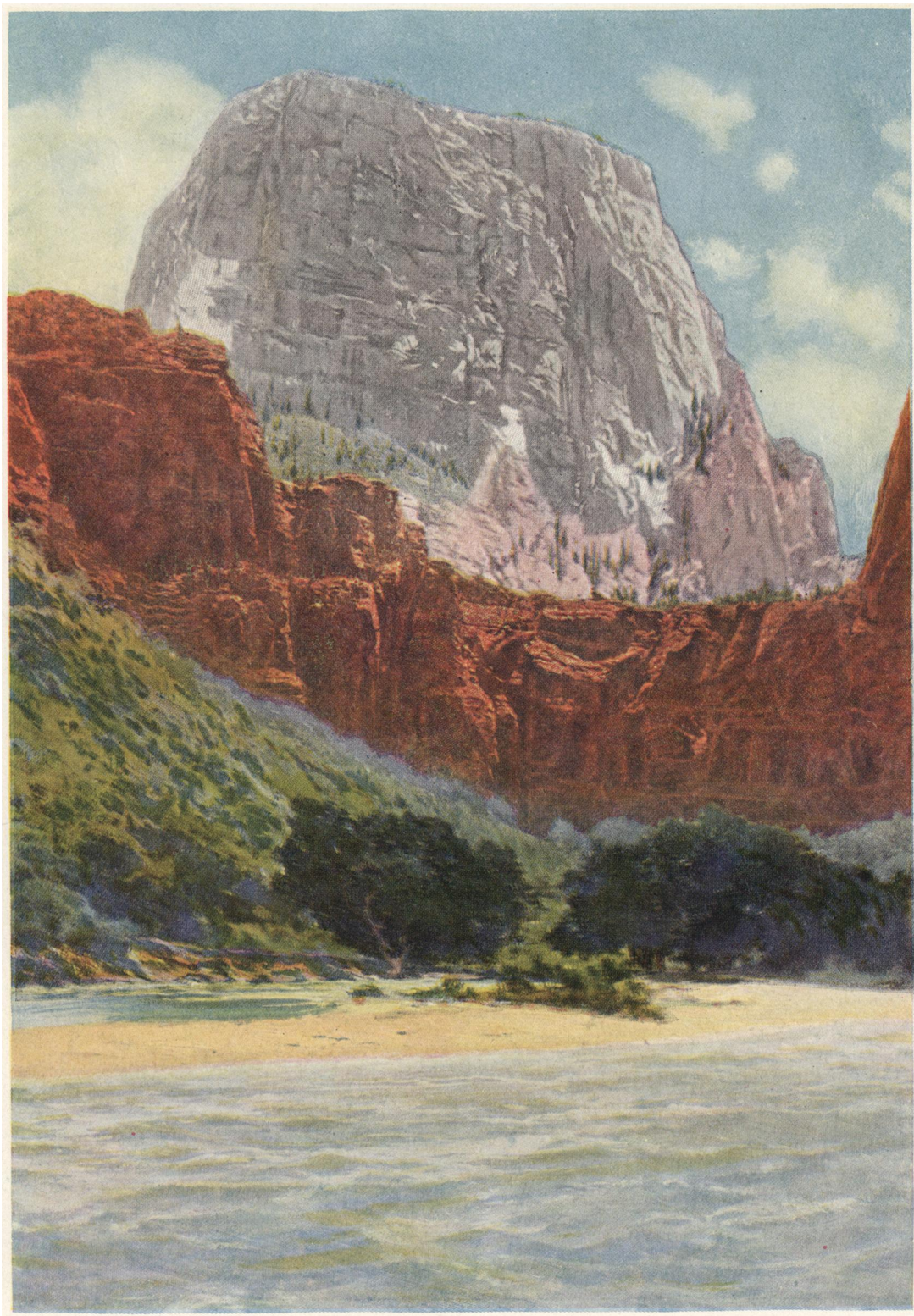
The real big-tree parks, however, are Sequoia and General Grant. The latter is only 4 miles in extent, and contains the General Grant tree, second largest of the sequoias, and a small group of these trees. In Sequoia National Park is the General Sherman tree, the largest of all, and thousands of other sequoias, some hundreds, other thousands of years old. Giant Forest is the only place where

there is an almost pure stand of big trees. The area of Sequoia Park was more than doubled last year by the inclusion of the Kern River Canyon and other Sierra country, including Mount Whitney, the highest mountain in the United States outside of Alaska. The adjoining canyon of the Kings River, with its valleys comparable in beauty only to the Yosemite, should also be added to the park, to make it complete. The newly-acquired mountainous section is an excellent country for pack-train trips. There is still another park in California, the Lassen Volcanic in the northern part of the state. Mount Lassen is still an active volcano, although quiescent, and perhaps dying, at the present time. Its lava forms, ancient and modern, are fantastic and striking. Its fumaroles, very hot springs, lofty ragged peak and twisted crater, the interesting Cinder Cones, the minor vents, all have a strange and uncanny beauty and interest. And these weird evidences of the internal fires that once raged along the Coast are set in an area of forests and ice-cold lakes, with rushing trout streams to tempt the angler.

For colorful natural beauty, the canyon country of Southern Utah and Arizona is superb. Taking them in the order of accessibility from Southern Utah, the first national park to be reached is Zion. This has sometimes been termed a "Yosemite done in oils," and to those who know Yosemite this suggests very well the beauty of Zion Canyon. It has about the same dimensions as Yosemite and some of its rock formations resemble those of the Yosemite in form but not in color or personality. The color of Zion is what most amazes. The canyon is cut into the Vermillion Cliff, and deep red is the prevailing color of the walls and temple-like formations for two-thirds their height. Above this rests a stratum of white, glistening in the sun, and sometimes a cap of vivid red surmounts this. The Mukuntuweap River, flowing through the canyon, is bordered by luxuriant vegetation semi-tropical in nature, but back on the rims of the canyons are found the flora of the desert. From the canyon floor good trails lead



The Suspension Bridge over the Colorado River in the Grand Canyon



Zion National Park



Glacier National Park



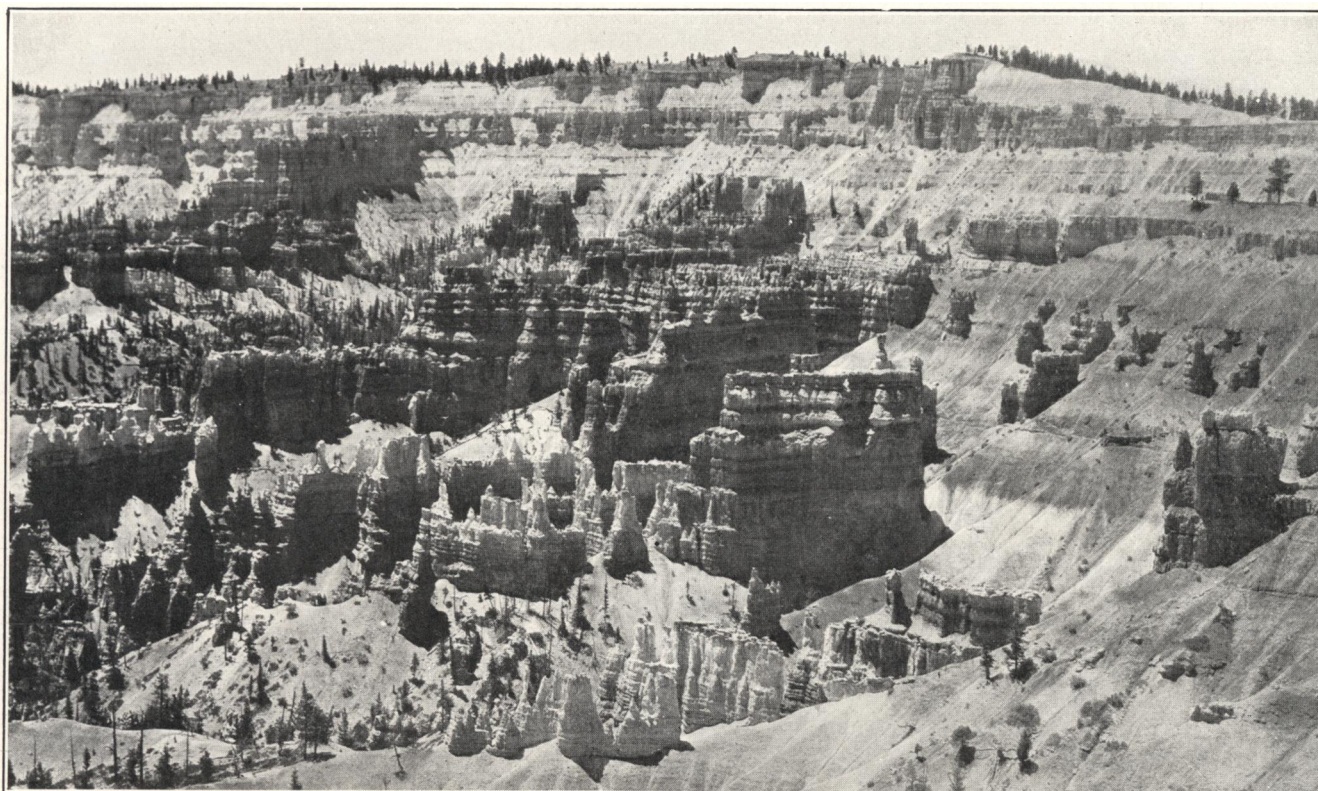
Glacier National Park



Kaibab National Forest



Zion National Park



Bryce Canyon, Sevier National Forest, Utah

Forest Service Photo

up to both the east and the west rims. These are excellent pieces of engineering. One stretch of the West Rim Trail goes up through an almost perpendicular section of the white cliff, making twenty-one switch-backs in a short distance, to maintain the grade. The grade of these two trails, which are 5 feet wide with outside guard walls, is 16 per cent average maximum. From Zion a road leads south to the north rim of the Grand Canyon of the Colorado, passing through typical desert lands and across the colorful Prismatic Sands. Occasionally, where water for irrigation is available, the desert blooms, and on these oases every kind of fruit native to the United States, with the exception of the citrus varieties, is grown.

Before reaching the Grand Canyon, the road passes through the Kaibab National Forest, a superb growth of virgin timber. Here is the only habitat of the kaibab or white-tailed squirrel, a beautiful little animal with a long, bushy white tail. At the rim, a stupendous spectacle meets the eye, as the Grand Canyon stretches before one, a mile deep and with many side canyons merging together at one's feet. Within the park the canyon varies from 4 to 14 miles in width, El Tovar on the south rim being 12 miles from Bright Angel Point in an air line. The north rim is about 1,000 feet higher than the opposite rim, and affords some exceedingly spectacular views of the brilliantly-colored canyon. Many impressive buttes and temples rise from the floor of the canyon or from the lower rock strata, some reaching nearly to the height of the rim. The two rims are connected by the Kaibab Trail, part of which is new and the remainder reconstructed, or under reconstruction at the present time. This is now the shortest trail between the two rims, and is the most

spectacular and scenic. In the bottom of the canyon, the Colorado River is crossed on the suspension bridge, built shortly after the creation of the park. It is about 500 feet long, and is suspended 40 feet above the general water level. When the river is highest, usually in June, the bridge still is out of reach of the highest waters by a margin of about 13 feet. In the Granite Gorge of Bright Angel Creek, on the north side, the old trail crossed the creek sixty-eight times in 3.6 miles. The new trail has been located above high water and only crosses the creek four times. The maximum grade of the reconstructed trail is 18 per cent, as compared with a maximum of 36 per cent on the old trail. Now the trail is interesting from start to finish, but entirely without hazards even for the tenderest of tenderfeet. From the north rim of the Grand Canyon to Cedar City the return road leads to Bryce Canyon and Cedar Breaks. The former is a box canyon 2 miles wide by 3 long, cut a thousand feet deep into the Paunsagunt Plateau. It contains a myriad of fantastic, erosional forms, gayly tinted in shades of coral, rose, and orange, and tipped with white or cream. Cedar Breaks is a large amphitheater, also containing many unusual erosional formations. Its formations are not as striking as those of Bryce, but its coloring is more vivid.

Mesa Verde National Park, in Southwestern Colorado, is unique in being the only one of our national parks not created solely because of some outstanding natural feature. It also lies alone from a geographical standpoint, although it may be visited in connection with a trip to either the south rim of the Grand Canyon or Rocky Mountain Park. Here, hidden in caves, or located on top of the mesa, are the ruined homes of a prehistoric people who lived

before the coming of the white man and disappeared into the mists of antiquity. Archaeological investigations of the ruins have brought to light many interesting facts concerning the skill of the early builders, and also their mode of life. The basic principles of their prehistoric water system, a series of over two hundred dams of rough masonry construction, have been adopted to supply water at headquarters after other methods failed. Studies of their more elaborate cliff dwellings, made of worked stone and mortar, impress the beholder with the stupendous difficulties encountered in getting stone and water to the caverns over the face of almost vertical cliffs. Something of the endurance of the cliff dwellers must have been worked into their homes which have withstood, to a considerable degree, neglect and the devastating effect of the weather through hundreds of years.

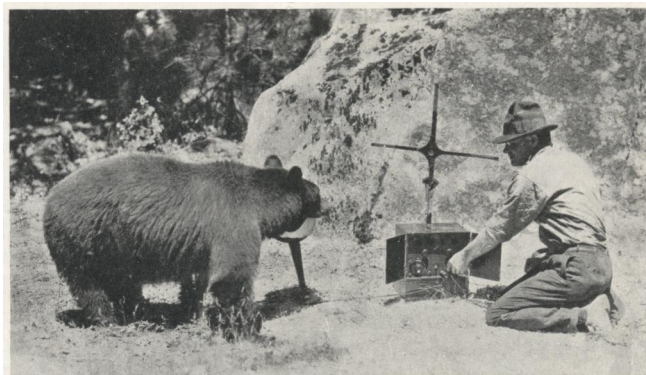
Mount McKinley and Hawaii, the territorial national parks, also stand alone, although both may be generally grouped with the parks of the Western Coast, since they may be visited by boat from Seattle or San Francisco. In the former, the principal scenic feature is imposing Mount McKinley, which is not only the highest mountain on the North American continent but rises higher above its immediate base than any other mountain in the world. The wild animal herds of this park, particularly the caribou and mountain sheep, are exceedingly interesting.

Hawaii Park's principal features are its volcanoes, Haleakala, now dead, and Mauna Loa and Kilauea, both active. Kilauea, whose lava pit is the reputed home of Pele, the Hawaiian goddess of volcanoes, sometimes contains a lake of molten lava, but this lake is as temperamental as the lady it is supposed to shelter, and sometimes disappears or hides in the depths of the earth for considerable periods. When in action, it is a majestic and awe-inspiring sight.

Off on the other side of the continent, the Lafayette National Park is easily accessible to Easterners, and in addition to its great natural beauty is inter-

Later it passed into the possession of the English Crown, and, finally, with the Revolution, became American.

The management and control of the national parks is carried on by the National Park Service of the Department of the Interior with headquarters in Washington, D. C. Only the necessary supervisory and administrative work is conducted through the



A Yosemite Valley Bear Drops in to Listen

main office. Each park is directly administered by a resident superintendent, whose job is no sinecure. Among his duties are the protection of the natural scenic features of the park from spoliation, and the safeguarding of the park's wild animals. Park visitors, too, must be protected from the elements, from reckless fellow visitors, from illness, sometimes from the results of their own folly. The operations of the public utilities supplying accommodations to visitors must be supervised. Roads must be kept in good condition, and trails constructed into the outlying areas. Adequately to attend to these manifold duties, a superintendent must first of all be something of a diplomat. With perhaps a hundred thousand visitors to his park, sometimes more, during a short season, with hundreds of employees, most of them seasonal, in the hotels, camps, and transportation system; with ranger forces augmented by temporary men during the summer months, it is not an easy matter to keep the wheels of park machinery running smoothly, but that is the superintendent's job. Roads and trails must be maintained; forest fires must be guarded against and sometimes fought for days; large amounts of government funds must be expended; and in all this work all the fiscal and personnel regulations of the government, which are many, must be complied with. This is one side of the ledger. On the other side is the opportunity for a life spent largely in the outdoors; the zest to be gotten from a sense of duty well done, of knotty problems satisfactorily solved; and the self-satisfaction that comes from helping others enjoy life. There is a fascination about the job that holds men of big caliber. The present roster of superintendents includes Army officers, civil engineers, lawyers, and, in one instance,



Lava Crater of Haleakala, Hawaii National Park

esting because of its connection with the early history of the settling of America. Sixteen years before the coming of the Pilgrim Fathers, this area was visited by Champlain and the Sieur de Monts, and to the latter the land was given by the French king.

a man born in Yellowstone who, all his life, except for the time away at College and in the Navy during the World War, has lived in a national park and has come up through the ranks to his present position.

Many amusing incidents occur in the course of a summer. There was the young ranger in Yellowstone, son of a prominent Congressman, who was so haughtily conscious of his dignity that the superintendent put him to work policing public camps as a matter of discipline, and finally made an excellent ranger out of him. John Brown III, grandson of a former president, was just the reverse. In accordance with park policies a visitor who thoughtlessly scratched his name on one of the geyser formations, in contravention of the regulations, was compelled by this young man to come back and erase the scratches. So tactfully did the ranger handle the situation that the visitor reported the incident to the superintendent, saying, "It was a pleasure, sir, to be rebuked in so gentlemanly a manner by the grandson of President John Brown."

In administering the parks, with a combined area of 11,804 square miles, many engineering problems are involved, particularly in connection with road building. The road mileage is small, compared to the area of each park. This is as it should be, for large areas of the major parks should and will be kept in their wilderness condition, reached only by trail or horseback or afoot. Roads now reach the main points of interest, and the efforts of the Service are being concentrated in bringing this work up to a high standard. As the Bureau of Public Roads has a trained corps of highway engineers, a cooperative arrangement has been made whereby that bureau is handling road construction for the National Park Service. Road maintenance work, however, is carried on by the civil engineering division of the Service, through local park engineers.

The landscape engineering division is charged with

the important duty of supervising the locating of roads and trails in such a manner as to disturb the landscape as little as possible. Designs for buildings, both those of the government and of the public operators, must be approved by the landscape engineers before construction, as must also the location sites, in order that these may harmonize with the natural setting.

The third important engineering activity in the national parks is the installation of sanitary facilities, in order to protect the health of the thousands of visitors to each of these reservations. Rather than build up a sanitary engineering force within the Service, the cooperation of the Public Health Service has been enlisted in furnishing expert advice and assistance. The problem of pure water and proper sanitation at the administrative headquarters, hotels and camps, and outlying public camps is a vast one, and requires constant attention.

An Important Factor in Our National Life

From several standpoints these parks are an important factor in our national life. Obviously their greatest material value lies in the tourist travel they engender. While many foreign countries are making strenuous, and expensive, efforts to draw tourist travel, our national parks, with practically no government publicity, are drawing increasingly large numbers of visitors each year. Another economic value lies in the protection afforded stream watersheds through the complete preservation of park forests, and the increase of wild life in adjacent communities through absolute conservation within park boundaries.

Yet greater than these is the part they play in promoting pride of country. People from all sections of the United States, meeting in a national park in which they have ownership equally with all other American citizens, lose much of their sectionalism, and become better, broader Americans.



Lake McDonald in Glacier National Park

Hileman Photo