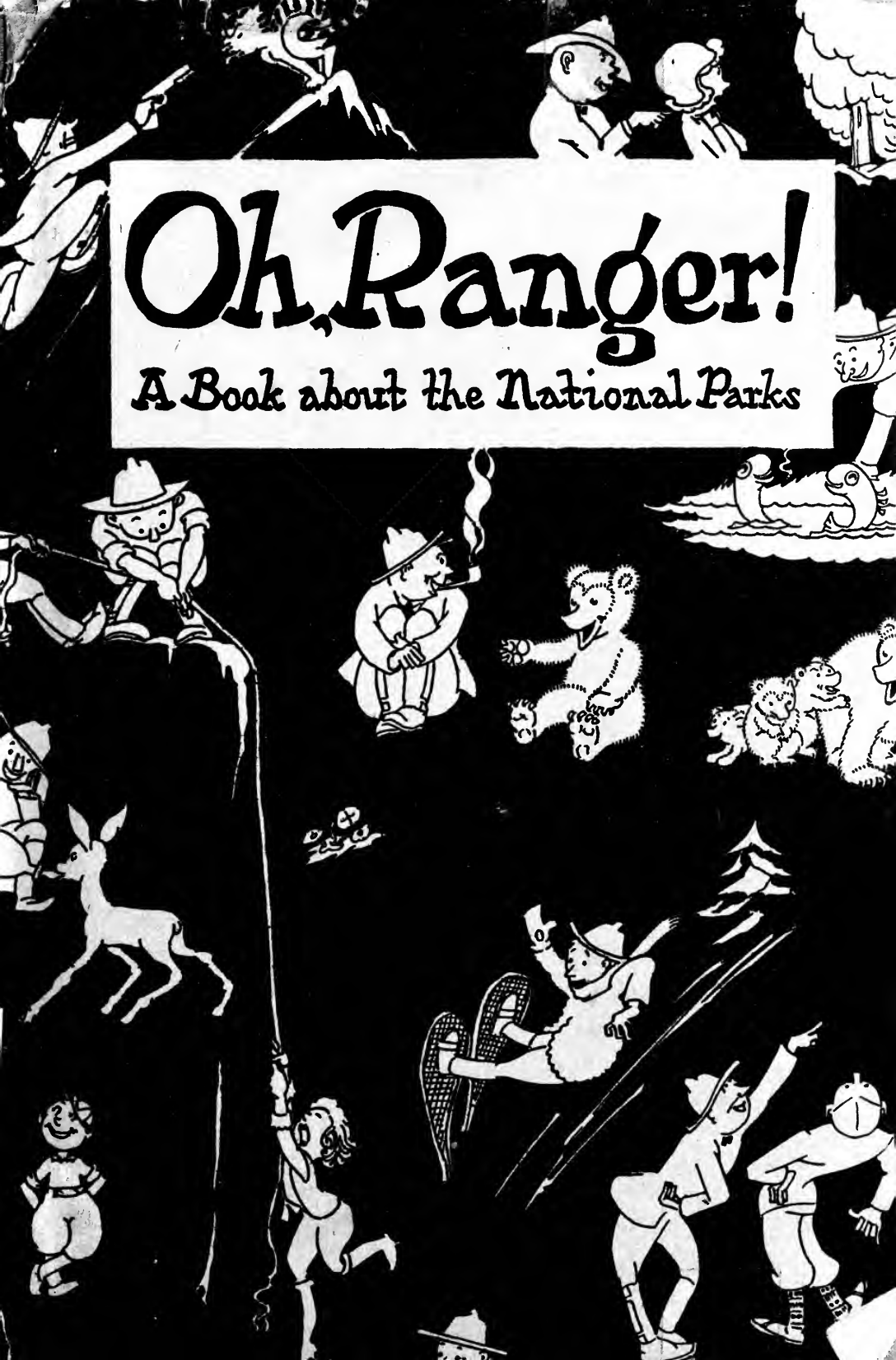

Oh, Ranger!
A Book about the National Parks

*Price $2.50*

# "OH, RANGER!"

## *A Book about the National Parks*

*By*

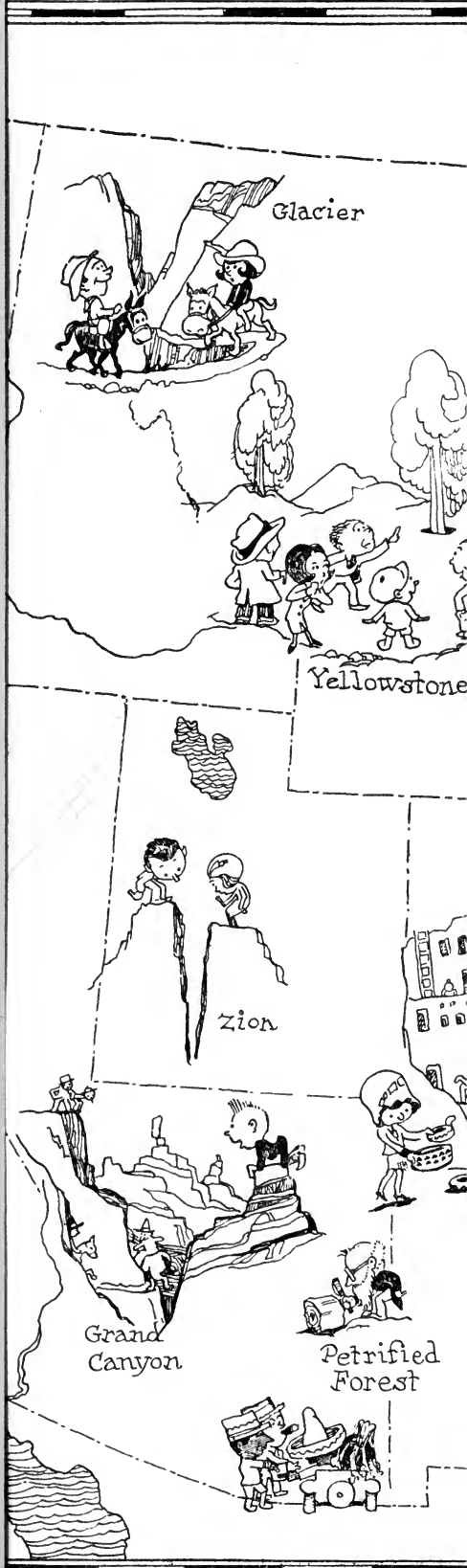
HORACE M. ALBRIGHT
*and* FRANK J. TAYLOR

"OH, RANGER!" is the first complete story of the national parks. It is a colorful tale of their history, their lore and traditions, their unequaled beauty, the lives and adventures of the rangers who run them.

Its pages are filled with interest for anyone who enjoys a good story. Dudes and Sagebrushers—bears and Indians—forests and streams and mountains—all are described and characterized in a wealth of narrative and incident.

"OH, RANGER!" will increase many fold the enjoyment of those fortunate enough to visit the parks this season and in future seasons. Packed with information concerning these national vacation areas, it will help the summer tourist to make the most of his limited excursions.

"OH, RANGER!" is authentic in its facts and keen in the humor of its stories. It is profusely illustrated with whimsically apt sketches and a variety of well-chosen photographs. The delightful combination of amusement, information, and narrative which the book holds commends it to the entire reading public.

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# A Cartograph

of the once wild and woolly West, better known in modern times as the domain of the National Parks, which indicates why Dudes and Sagebrushers ever leave home.

Cartograph by Ruth E. White.

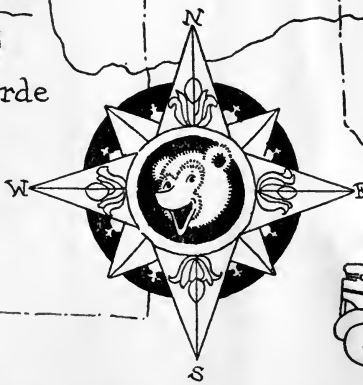
Wind Cave

Rocky Mountain

Verde

Platt


Hot Springs

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*Harry Yount, of Yellowstone,*
*the first national park ranger*

# "Oh, Ranger!"

## *A Book about the National Parks*

*By*

Horace M. Albright *and* Frank J. Taylor

*Illustrated by*

Ruth Taylor White


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DEDICATED TO
THE RANGERS
AND THEIR CHIEF
STEPHEN TYNG MATHER

# A Word of Introduction

To me no picture of the national parks is complete unless it includes the rangers, the "Dudes," the "Sagebrushers," and the "Savages." I like to picture the thousands of people gathered about the park campfires, asking questions of the rangers. In fact, I like to be at the campfire myself, and listen to the thousands of questions asked about the parks and their wild life. Especially am I interested in the replies of the rangers. These men of the mountains have become keen students of human nature. In their brief, informal talks, they have learned to anticipate many of the questions of the visitors.

I like the idea of this book, *"Oh, Ranger!"* It tells the story of the parks in the simple, informal style of the rangers. It gives the rangers the credit due them for their fine work in guarding the national parks and preserving them in their primeval beauty. It breathes the spirit of the people who belong to the parks, who make possible the parks as they are today.

They are a fine, earnest, intelligent, and public-spirited body of men, these rangers. Though small in number, their influence is large. Many and long are the duties heaped upon their shoulders. If a trail is to be blazed, it is "send a ranger." If an animal is floundering in the snow, a ranger is sent to pull him out; if a bear is in the hotel, if a fire threatens a forest, if someone is to be saved, it is "send a ranger." If a Dude wants to know the why, if a Sagebrusher is puzzled about a road, it is "ask the ranger." Everything the ranger knows, he will tell you, except about himself. *"Oh, Ranger!"* now tells you about him.

The national parks are more than the storehouses of Nature's rarest treasures. They are the playlands of the people, wonderlands easily accessible to the rich and the humble alike. They are great out-of-doors recreation grounds, where men, women, and children can forget the cares and the sounds of the cities for a few days. The serenity of the mountains and the forests is contagious. With three million Americans under its spell each year, if only for a short time, it is a powerful influence in our national life. It has been one of the pleasures of my work as Director of the National Park Service to tell the people about their parks, to urge them to see their wonders, and to find new and easy ways for visitors to reach the parks. The whole purpose of Congress in creating the national park system was that the American people might enjoy them and benefit by them forever.

So I am glad of the opportunity to write this short introduction to *"Oh, Ranger!"* which tells the story of the parks in a new and interesting

way, and to say a word about its authors. Horace Albright has served the national parks since the service was organized, first as assistant director in Washington and then in the field. He is an indefatigable worker, a true lover of the mountains. He knows the rangers and undoubtedly knows the parks better than any other man in the service. Frank Taylor has been a friend of the parks for many years, as newspaperman and writer. He, too, has spent much time in them and has helped bring their possibilities to the attention of the people. It is a happy circumstance that two men who themselves have the genuine spirit of the rangers and who are so intimately informed in the affairs of the parks and their people should have collaborated to produce this book.

STEPHEN T. MATHER
*Director, National Park Service*

WASHINGTON, D.C.
March 1, 1928

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# "Oh, Ranger!"

"Oh, Ranger, can I take your picture with a bear?"

"Just a minute, ma'am, until I show this gentleman where to go fishing."

"Where's a bear, now?"

"Well, ma'am, there was one in these woods an hour ago. Maybe we can find him."

Five minutes for the purpose of finding a wild bear.

"Oh, Ranger, that's a lovely bear! Stand closer to him, won't you? Would you mind putting your arm around him? It would make a peachy shot. We'd just love it."

"Sorry, ma'am, but it's against regulations to hug the bears."

"Oh, pshaw! Why do they have such foolish regulations? Well, just pretend to be feeding him something."

Knowing the ways of bears, the ranger declined to "pretend." He produced some molasses chews and actually fed them to the bear. It is dangerous business to try to fool a bear about food.

Click! Click! Click!

Another ranger was immortalized in picture, for the ninetieth time that day.

"It's all in the day's work," explained the ranger.

"What else do you do?"

"Well, show folks where to camp, and how to keep on the right road, and answer questions, and see that people don't tease the animals, and keep things orderly, and put out forest fires, and give lectures on Nature, and rescue Dudes in danger, and 'most anything anybody wants done around here."

"All in a day's work." That whimsical line was written at the top of a report turned in one day by Ranger John Wegner of Yosemite, which read as follows:

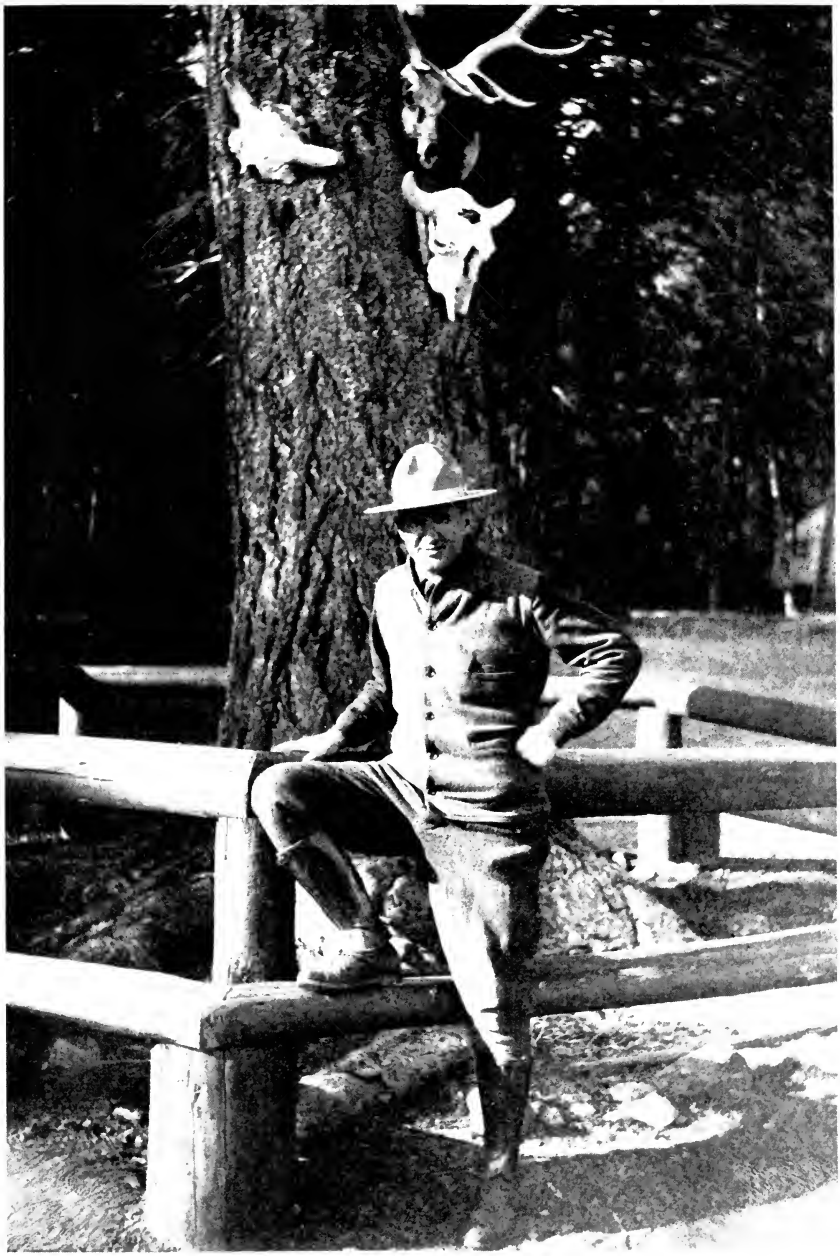
"I got phone orders at Tuolumne Meadows to pack up and come in over Sunrise Trail. Started at sunrise. Everything haywire, including cranky pack horse which kept getting off trail. Phoned in at Vernal Falls station. Ordered to hurry down, help catch two auto thieves which broke jail just after breakfast. Assigned to guard Coulterville

Road. Only transportation was Chief's personal auto which I could have if I could find man who borrowed it from Chief. Chief didn't know who that was. Guarded Coulterville Road until 3:00 A.M., when ordered to Valley to beat brush by the river with flashlight to locate thieves. Found one thief and captured him just before dawn. Somebody else assigned to guard him, but before I turned in, got orders to meet carload of trout fry at El Portal and help plant them in streams. Met fish O.K., but coming up El Portal Road, Quad truck slipped over side of road, but was saved from going down cliff by being caught in tree. Cans of fish lashed to truck, so we saved them. Job was complicated by necessity of keeping water aërated in cans setting by roadside while we rushed more water in small bucket from stream quarter of mile away. Fish all saved. Phoned for help, and kept water in cans moving until truck dragged back on road and fish cans reloaded. Relieved of duty, with nothing to do but walk nine miles and go to bed."


"All in a day's work" can be almost anything for a national park ranger. One day, at the end of a long battle for control of a forest fire, Superintendent Lewis of Yosemite was making a final inspection before telling the last ranger on the job to go to his cabin and turn in for much-needed sleep. Every blaze was out except a small flicker in an old tree trunk, dead but still standing. It looked safe enough, but the rangers hesitated to leave before it was entirely out, for fear that a sudden breeze might rekindle the forest fire. The blaze was too high to reach with wet sacks or dirt thrown by a shovel, or by water thrown from a bucket. The tree was too large to be cut down without help, and Lewis hesitated to call back his already exhausted rangers. He scratched his head and puzzled over the engineering problem of snuffing out that small blaze. Then he and the ranger scouted for a spring. Finding one, they made a lot of mud balls and carried them in their hats to a point near the burning tree. Both had been baseball players in their younger days, and as Lewis afterward said, "The old soup-bones were still in fair shape." Cheering each other's pitching, they heaved mud balls until the last "strike" smacked out the last flickering blaze.

*A national park ranger cabin*

*A national park ranger riding patrol*



*Horace M. Albright, former Superintendent of Yellowstone Park, now Director of the National Park Service*

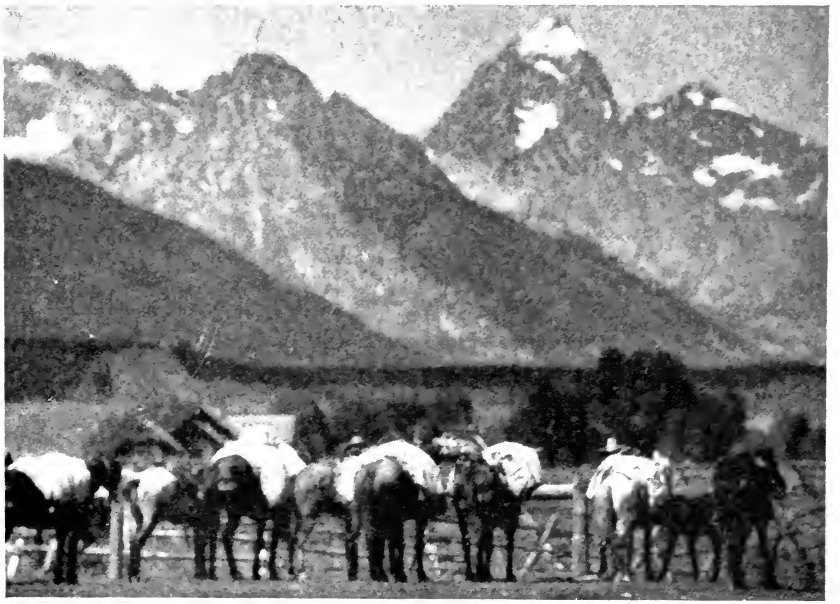
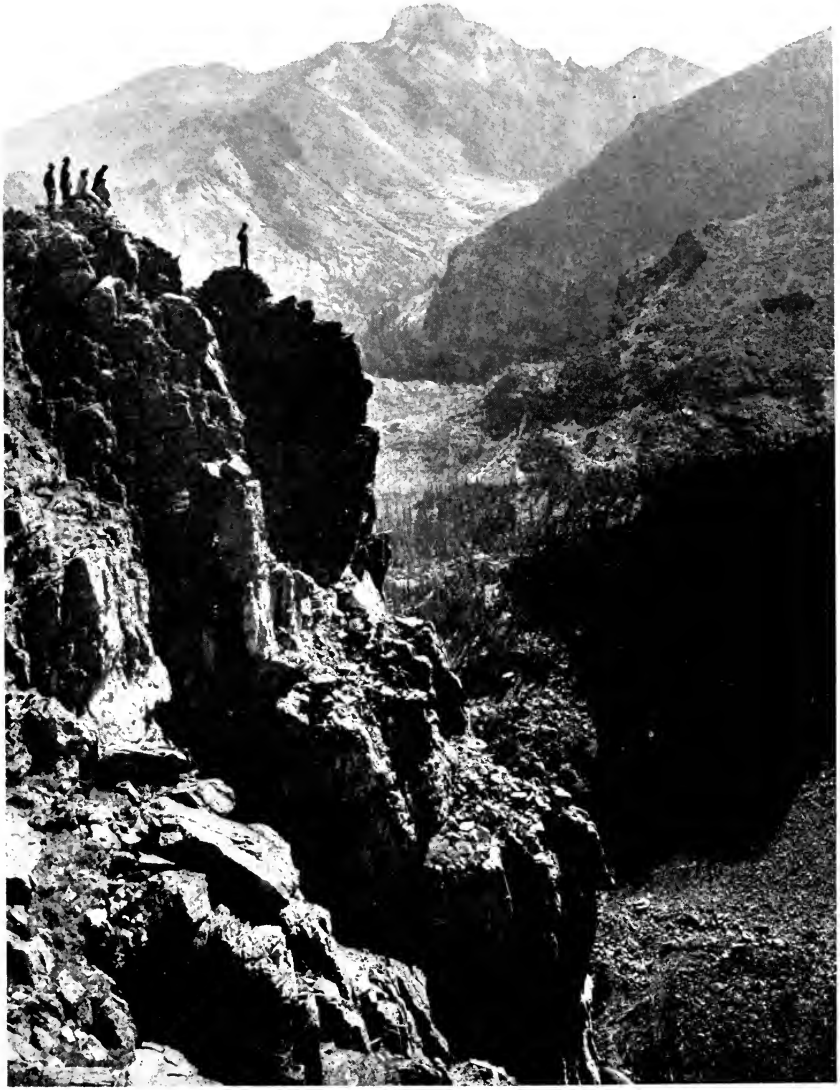


*Photo by Tod Powell*

*Ready for the trail to the Grand Teton*

*Many Glaciers Hotel, Glacier National Park*



*Longs Peak, Rocky Mountain National Park*

To the hundreds of thousands who visit the national parks each year, everyone in the olive drab uniform is a ranger. "Oh, Ranger!" is the almost universal greeting preliminary to asking questions about the park and its life. But within the ranger service there are various designations, ranging from superintendents down to Ninety-Day-Wonders. In a broad, general way, all rangers are divided into two groups: Old-Timers and Ninety-Day-Wonders. The Old-Timers are the permanent rangers, serving the year around, year in and year out. The Ninety-Day-Wonders are temporary rangers, signed on for the summer rush period of three or four months, when the travel to the national parks nears the three-million mark.

The Old-Timers are, of course, the backbone of the ranger service. In the summer months, they are in command at the various ranger stations, assisted by the Ninety-Day-Wonders in the task of registering visitors, directing them to camps and lodges, helping them find fishing holes, or campsites, or wood, or what not, and in answering the millions of questions about the parks. The Ninety-Day-Wonders are mostly college men, with enough love for the out-of-doors to enlist for a summer of hard work at long hours and low pay in the national parks. They are a keen and resourceful group of men and what they don't know about the great open spaces after a week in a national park they manage to hide behind an air of great sagacity. The majority of these lads return to college work at the end of summer, but a few of them succumb to the spell of the mountains and become eventually permanent rangers.

The Old-Timers, particularly the veterans in the ranger service, are born men of the mountains, gifted with a working knowledge of woodcraft, of trail-blazing, of the ways of wild life, and with sufficient instinctive resourcefulness in the mountains and the forest to be able to take care of themselves and others under any circumstances. They are practical naturalists, and are able to handle people in numbers. They must serve as guides, philosophers, and friends. That seems like an imposing list of qualifications, yet the permanent park rangers are equal to it. The mountains have put their stamp on the Old-Timers. You can tell that by talking to them. It shows in their faces, in their actions. They are men who can stand solitude—it takes an unusual character for a man to be good company for himself in a lonely ranger station, banked high with snow, for months on end dur-

ing the winter. Just try living alone for a hundred days at a stretch! Strangely enough, these are the months that the rangers love best. Out near the mountain tops, with snows piled from five to forty feet in drifts, they lead their lone existence, patrolling their domains, as large almost as some eastern states, traveling on skiis and snowshoes, repairing telephone lines, protecting wild animals from poachers, maintaining the peace of the wilderness through storm and blizzard. For as long as six months at a time, winter holds most of the national parks in her icy grip, with weather below zero, with freezing winds, blizzards, and snowstorms alternating around the tiny log fortresses, the cabins, from which the rangers make their patrols. During those long, cold winter months, the higher levels of the parks are closed to travel, and the ranger's main job is to see that his charges in the great wild-life sanctuary are protected, both from humans and from the elements. It takes men of great courage, stamina, and endurance for this most difficult work.

On winter patrol, the men must be able to endure such privation as was faced by Ranger Liek, now superintendent of Mount McKinley National Park, in Alaska. Liek was once lost for twenty hours in a raging blizzard while returning on snowshoes from Upper Yellowstone. For hours on end the storm raged, destroying every sign by which the ranger could find his trail. Only by keeping on doggedly could he avoid freezing to death. It was, of course, impossible to build a fire in the blizzard. He crossed his own tracks many times, and was hopelessly lost when he came finally to a shoreline which he recognized as Yellowstone Lake. He must have traveled at least forty miles in covering a distance of twelve miles, before he reached a ranger station, where he could provide himself with food, shelter, and warmth.

"It's all in the day's work," says the ranger.

Whenever possible, two rangers patrol together in the deep snow country, so that if one is hurt or taken ill, the other can render aid or go for help. In the northern national parks, great precautions must be taken to protect the rangers during the winter. The ranger stations are about twenty miles apart; in no case more than thirty miles apart. Between each station, there are snowshoe cabins, which are rationed in the fall and are equipped with bedding and wood and kindling. Sometimes these cabins are completely buried beneath the snow. To provide landmarks by which to locate the cabins, the rangers often put up many extra feet of stovepipe or hang a shovel in a tree top near-by. One

time, looking over a report of a ranger's patrol, we noticed this item: "Ate lunch on top of a telephone pole just east of Sylvan Pass."

The snow must have been more than twenty feet deep up there and the tip of the pole was probably the only place he could sit down to lunch. There are times when the snow is forty feet deep in Sylvan Pass, and not even the telephone poles nor the tree tops are visible in places. It is hard for the summer-time visitor, who sees Yellowstone or Glacier or the other parks only in the height of the season when the summer is balmy and the roads are good, to picture the complete isolation of the ranger stations in the dead of winter when the snowdrifts hide even the two-storied cabins. It takes genuine devotion to the mountains to prompt men to make these lonely cabins their homes during the long winter months.

Ranger Joe Douglas was crossing Yellowstone Lake on skiis in the dead of winter. He came to a place where the snow was blown off the ice. Skiis are of no use on the ice, so Doug unstrapped them and carried them over his shoulder while he walked across the ice. In an unwary moment, he plunged through an air-hole into the icy water. The skiis bridged the hole and undoubtedly saved his life. Clinging to them, Doug cautiously pulled himself from the water and trudged on, his wet clothes frozen stiff about his body. Reaching the shore, he dug through four feet of snow, located some wood, built a fire, undressed, and stood there naked while his clothes dried by the blaze.

"It's a wonder you didn't freeze, Doug," someone said, when the ranger told his story.

"Naw, it wasn't cold," he retorted. "It was one of the warmest days of the winter—only 'bout seven below zero!"

It takes a rawhide constitution to stand treatment like that.

To the public, the ranger is one of the most romantic figures in life. The term "ranger" probably originated on the southern border, in the early days, when the roving mounted police officers, intrusted with maintaining law and order along the frontier, came to be known as rangers because they ranged over a wide territory. That was long before either the national parks or the national forests were created. The first national park ranger, so far as is known, was old Harry Yount, government gamekeeper, who remained all winter long in Yellowstone Park in 1880, to keep poachers from the territory. He was the first man to weather a winter in Yellowstone. After that first winter alone, with

only the geysers, the elk and the other animals for company, Harry Yount pointed out in a report that it was impossible for one man to patrol the park. He urged the formation of a ranger force. So Harry Yount is credited with being the father of the ranger service, as well as the first national park ranger.

In the public mind, there is little difference between national forest rangers and national park rangers. The two groups do have much in common, such as protection of the forests from fire, construction of trails and telephone lines, planting of fish in lakes and streams, and preservation of the wilderness under their charge. The differences in their duties arise out of the fact that they are employed by different bureaus in different departments of the federal government. The park rangers are employed by the Department of the Interior, the forest rangers by the Department of Agriculture.

The national forest rangers are intrusted with the administration of a vast area of forest land, a territory fifteen times as great as that of all the national parks together. Their duty is to see that timber is not cut until it is fully grown, that slashings are burned, and that new forest growths are protected. They have under their charge much grazing land on which live stock is pastured under permit from the government. The national forest areas include many reservoir and power sites and the forest rangers supervise their utilization under the Federal Power Commission's authority. In brief, the forest ranger is charged with administration of an area which must produce the best possible crop of timber, grass, and water power. The national forests are a business proposition, and the forest ranger must look at them from an economic point of view, though they are also sanctuaries of wild life and open to the public for recreation, as a secondary consideration.

The national park ranger is not concerned with the many economic and commercial problems that confront the forest ranger. The national parks were set aside to preserve the natural wonders in them, and the rangers' duty is to protect the features and resources of the parks in their natural state. The only economic developments allowed in the national parks are those for the convenience and service of visitors. No hunting is allowed in the parks. The national park ranger is custodian of a great natural museum through which he must guide tens of thousands of visitors each year. He must tell them about the parks, see that facilities are provided for their comfort, pleasure, and entertainment. The national park ranger must be more than a skilled mountaineer and woodsman; he must have the ability to establish and maintain close contacts with the public, during the summer months at least, and then must turn to his task of protecting the wild life during the wintertime.

In old Harry Yount's day it was enough if a ranger could maintain order in the park and protect the wild life. Today that is but the beginning of his job. The ranger must be a guide and an interpreter of the mountains and their moods and mysteries. He must be a practical naturalist, and a friend and counselor to the Dude and the Sagebrusher. He may be entertaining a reigning prince one day and fighting a forest fire the next. He must be tactful, courteous, and ever patient, even when ridiculous and foolish situations are provoked by visitors.

Ranger Martindale was giving an informal talk to a group of delegates to a religious convention, gathered about the cone of Old Faithful Geyser. The ranger had just explained how the cone had been formed over a long period of years by deposits from the hot water when he was interrupted peremptorily.

"Ranger, how long did you say it took to make this cone?"

"About forty thousand years," Martindale told the questioner.

"Young man, do you ever read your Bible?"

"Yes, sometimes."

"Then you know that the world is not yet forty thousand years old, nor a half, nor a quarter of that."

"But we have measured the annual deposit on this cone and we can calculate how long it took to build it up as high as it is," said the ranger.

"Well, if you had read your Bible more carefully, you would know that it took the Lord only six days to make the whole world," asserted the visitor decisively. "If He wanted to, I guess He could make ten Yellowstones in ten minutes!"

With that he strode off.

There is the tale of the peanut tree of Mount Rainier National Park. Guides would point out a certain pine tree near Paradise Valley and sure enough there were peanuts sticking in the clusters of pine needles. A family of squirrels, if not frightened by too many visitors, usually spoiled his story. Their chief ambition in life, apparently, was to carry peanuts, provided by friendly rangers, to the limbs of the tree, where the nuts remained until the wind or the birds jarred them loose, whereupon the squirrels tackled their job of re-peanutting the pine tree all over again.

Sometimes a joke will save the day. Sometimes, though, the wise-crack makes trouble. There was the old lady who asked a driver why the great piles of wood were stacked along the road near Old Faithful.

"That's to heat the water for the geysers," he said, without batting an eye.

The old lady came in to see the superintendent when she reached Mammoth, where the office is located, to protest against deceiving people about the geysers. It was with difficulty that he persuaded her that the wood was cut to heat water for the hotel radiators.

The rangers have learned that the public takes the wonders of Nature so seriously that it is not good policy to joke about them. It is hard enough to persuade people to believe the truth. There is a pine tree growing in a cleft in the side of El Capitan, a massive rock rising sheer for more than half a mile above the floor of Yosemite Valley. The height of El Capitan itself is difficult for people to grasp. This tree, perched on a shelf about a third of the way up, is eighty feet tall. It looks to be about eight feet high, at the most. The superintendent of Yosemite has had to bring out surveyors' calculations more than once to prove to visitors that they are not being deceived by rangers or guides.

Among themselves and their friends, the rangers are great story tellers, especially when they start telling "whoppers." Sometimes their stories are marvels of invention, as, for instance, this one:

A ranger doing patrol duty on the boundary line, having run out of supplies and being in immediate danger of starving, told how he grabbed his trusty old gun for which only one shell remained, and, going beyond the park line, maneuvered around carefully, hunting diligently so as to be sure to get the best possible results with the one shot. Finally he came upon a brace of quail perched in a cluster of brush close enough together for both to be bagged at one shot. Carefully raising the gun, he fired. Imagine his great joy when on running to the spot to pick up his two quail he found that he had killed six more, which were on the other side of the bush and which he had not seen. Hearing a great commotion out in a small lake near by, he saw a big buck deer that had become frightened at the sound of his shot and had run out into the lake and bogged down in the mud. Dropping the quail, he hurried out into the lake and cut the buck's throat. In carrying the deer out, he sank down into the mud himself up over his boot tops. Upon reaching the shore, he sat down and pulled the boots off to pour out the water and found in them a dozen nice fish. Placing the quail, fish, and deer together so that they could be more easily carried, he was struggling to get the load on his shoulders. This put a great strain on his suspender buttons, and one of these flew off with such force that it killed a rabbit a hundred yards in the rear.

Kings, queens, princes, presidents, they are all the same to an Old-Timer. Sometimes it is difficult for these men of the mountains to observe the amenities of courts and capitals. There was the occasion of

the visit of the King of Belgium to Yosemite National Park. Ranger Billy Nelson, a seasoned Old-Timer if there ever was one, was detailed to accompany the King, to act as guide and guardian.

Billy did not relish the job. He had no fundamental objections to kings, as such, but he feared talking to them. He isn't much of a talker anyway. The superintendent coached Billy on how to address the King and the Queen and what to say to be polite. Billy rehearsed it, scratched his old head, and allowed that he would rather fight a forest fire. He met the King out under the giant sequoias of the Mariposa Grove, and this is about the conversation that ensued:

"They told me what to say to you, King," he said, "but I've forgot it, so if it is agreeable to you, I wish you'd call me Billy and I'll call you King."

"All right," said the King, "I'll call you Billy."

"All right, King," said Billy.

They got along famously on those terms and became fast friends during the King's stay in Yosemite. Billy has the reputation for being about the best camp cook in the whole ranger service, and any time he wants a reference he can name the King of Belgium. Billy was camp cook by special appointment to His Majesty. As such he took full advantage of his rights and prerogatives and more than once other members of the royal party were horrified to hear Billy call out:

"Say, King, shoot me that side of bacon, will you? How about another cup of Java?"

Another royal visitor who enjoyed his adventures with the ranger service was Crown Prince Gustav Adolf of Sweden. The Prince is an experienced woodsman and a great trout fisherman. Since he seemed to have the required qualifications, it was decided to make him an honorary ranger. He was delighted with the honor and wore his badge on his tunic for the rest of the trip. His outing costume was not unlike that of a park service ranger, and this led to an amusing incident when the Crown Prince arrived at the North Rim of the Grand Canyon of Arizona.

The party came by automobile, reaching the destination an hour or so before Ranger Frank Winess, in charge of the station, expected them. As the machine drew up, Winess stepped out, greeted the driver, exchanged a few pleasantries, and then spotted the ranger's badge on the Prince's breast.

"Hullo," he said, extending his hand. "My name is Winess. What park are you from?"

When it was explained that the new ranger was the Crown Prince of Sweden, it took Winess the rest of the day to recover the speech he had prepared to welcome the royal visitor to the Grand Canyon!

One day the Crown Prince went fishing with Chief Ranger Sam Woodring at Peale Island in Yellowstone Lake. After a good day, in which the Prince caught his limit, the party made ready to leave. Observing the rangers cutting wood near the cabin used as a headquarters for fishing parties, the Prince inquired the purpose of the wood. He was told that it was the practice in the mountains never to leave a cabin without wood, and that those in the cabin were supposed to replenish the supply for the next occupants, who might possibly arrive in the night or in distress.

"All right," he said, "since I am a ranger I will insist upon cutting my share of the wood."

Which he did.

There are times, however, when visiting celebrities are a bit unwilling to obey the rules of the ranger service. The rangers have one rule which says that no names shall be written on the cones of the geysers in Yellowstone. It is hard for the ranger to understand why anyone should want to disfigure a marvel of Nature by writing his name upon it, yet that used to be a widely accepted custom of the traveling public, just as carving initials in trees was the regular thing to do. It is pleasing to note that this custom is disappearing everywhere, and perhaps the education that has been carried on in the national parks has had considerable to do with ending the practice of disfiguring trees.

One day a local celebrity from an eastern city was smitten with the urge to write his name upon the cone of Old Faithful, a place where the name would endure for several years before the geyser could eliminate it by natural processes. This man was caught red-handed by a ranger, who arrested him. He was offered the choice of mixing up some soapsuds and scrubbing the name off the cone or going before the United States Commissioner for prosecution. He sputtered considerably about his rights, but finally decided to use the soapsuds, influenced largely by the fact that if he appeared before the judge and were fined, his name would be in the papers and he would become celebrated in a manner that did not appeal to him. Nevertheless,

it was humiliating to have to scrub a geyser cone before a large and not too friendly audience, and before the job was done he was angry all through. He came to headquarters to protest about the tyranny of the rangers. The superintendent happened to be out at the time and the gentleman unburdened his anger, in abusive terms, to the assistant. Finally he said:

"Well, it's about what you'd expect from these rangers. They're the dregs from the cities, out here in the mountains because they couldn't make a living anywhere else."

"Yes, I guess that's it," said the assistant, dryly. "That ranger who made you wash the geyser never had a chance. He's nothing but a grandson and a great-grandson of two presidents of the United States."

The ranger was William Henry Harrison III, a Ninety-Day-Wonder for the third consecutive summer.

Of course, not many rangers can claim the distinctive background of Ranger Harrison. They don't need to. It is not his distinguished forbears that made Harrison one of our best rangers, but his willingness to work, his devotion to duty, and his resourcefulness. The first requisite of a good ranger is that he be a gentleman, which hasn't anything to do with his birth or his family connections, but much to do with his manner toward his fellow-men. As a matter of fact, most of the Old-Timers are men who have worked their way up through the ranks, many of them without the benefit of education other than that which they have received in the mountains and the forests.

A remarkable ranger is Sam Woodring, formerly chief ranger of Yellowstone, now superintendent of the new Grand Teton National Park, just south of Yellowstone. Woodring was an old army packer. For years his job was to get supplies through to the outlying stations in the Philippines. He was a packmaster on the Mexican border for General Pershing, and was at Vera Cruz with General Funston. He came into Yellowstone from the army in 1920 and joined the ranger force. He had had charge of the army pack train in the park in 1915 and 1916. Ranger Woodring was in charge of the pack train organized for President Roosevelt when "T. R." was hunting wolves in Texas. Roosevelt was but one of many notables with whom Woodring became fast friends while out on the trail in the wilds. Two other presidents who intrusted themselves to his care while out in the mountains were Warren G. Harding and Calvin Coolidge. The Chief has made some remarkable winter scouting trips in his day, and his life has been a round of adventure. Not long ago he went to Glacier National Park to help Chief Ranger Carter gain control of a raging forest fire near Lake McDonald. In the dense forest, the two rangers and their squads were unable to see the fire, as a

high wind whipped the smoke through the valley. For hours they were given up for lost, as they worked to backfire a break against the oncoming flames. It was not until the next day that they discovered that the flames had leaped over their heads, above the tree tops, while they were battling in the smoke near the ground.

The oldest Old-Timer in the service is Jim McBride, of Yellowstone. Ranger McBride first came to the park before there were any rangers, as a driver for a quartermaster wagon. He learned the roads and trails of the park as a wagoner and mule skinner. In those days they had a different company of soldiers in the park almost every summer, and it was necessary to maintain a small force of guides or scouts to show the new troopers to their posts and to keep them from getting lost. These scouts were really the forerunners of the rangers and were indeed the first rangers. They fought off the poachers and tried to protect the wild life of the park. Jim was one of these Old-Timers, so long in the service that he is a personification of the name by which we call the permanent rangers.

There were picturesque and interesting events in the lives of those early rangers, as Jim can tell. There were stage robbers to be captured and buffalo poachers to be caught and brought to justice. One of the most notable tales is of the capture of Ed Howell, the buffalo poacher. He was caught red-handed by Scout Burgess and two assistants in the act of skinning a buffalo on a remote tributary of the Yellowstone River, in the dead of winter. Remember, rangers were called scouts in those days. Howell had several buffalo hides in his camp. After capturing him, the rangers were unable to bring about his punishment because of inadequate laws. The story of the catching of this notorious poacher and his escape from punishment caused great public indignation and undoubtedly had much to do with the passage by Congress of more stringent laws for the protection of the buffalo.

Jim McBride was assigned one time to track down a robber who had pulled off a sensational hold-up of stagecoach passengers in the park. He nabbed a bad man suspected of being the robber in a remote part of the park, and had to bring the rascal in alone. It was a trip of several days, and one night the fellow managed to loosen the ropes with which Jim had bound him. Jim awoke at daybreak just in time to see the former prisoner approaching him with an axe in his hand. When asked what he said to the alleged bandit, Jim replied:

"I said, 'Good morning, when did you wake up?'"

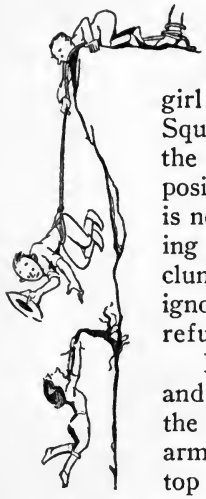
He recaptured the man and brought him to headquarters.

Risking his life to save that of another is something that every ranger must be ready to do, any time he is called upon. Visitors to the national parks unfamiliar with trails and with mountain climbing often

overestimate their endurance or their ability to find their way through the forests. The Yosemite National Park ranger force holds the record for the number of rescues effected along trails, for the reason that travelers in that park are more prone to strike out alone. Not that hiking over the trails is unsafe, for the contrary is true and thousands upon thousands of people hike safely over park trails each summer without guides. There are six hundred miles of trails in Yosemite National Park alone. One would think that would be mileage enough for any hiker for one season, but every year a few visitors insist upon blazing their own trails and consequently become lost. Chief Ranger Forest Townsley of Yosemite has made some remarkable rescues of hikers who have undertaken to find their own trails or make short cuts down the sides of cliffs and have found themselves stranded and helpless. Townsley is a giant in stature and a man of great courage, and dozens of times he has lowered himself down a precipitous cliff hand over hand to tie a lost Dude securely so that the rangers above could drag him to safety.

One of the most daring rescues in park history was made in the Grand Canyon of the Yellowstone. Two boys employed by the hotel at the Canyon undertook to reach the base of the lower falls on the north side. This slope is so steep that it is practically impossible to scale it, and the two boys found themselves helpless at the bottom of the Canyon, nearly half a mile deep, with the raging river on one side of them and the precipitous cliff on the other. They were seen by some tourists who reported their plight to the rangers. One lad was able to climb to a point where he could reach a rope and be pulled to safety. The other boy fell thirty feet while scaling the wall, cut a deep gash in his hip and suffered many abrasions of the body. He lay in the heavy cold mist from the falls, exhausted and half frozen, unable to reach the ropes thrown to him. Ranger Ross finally lowered Ranger Kell, his assistant in summer and a Yale varsity football star in the fall, and Remus Allen, a hotel employee, down into the Canyon at a point below the falls. They worked their way up the gorge, sometimes wading through the roaring river. They finally reached the wounded boy, rendered first aid, and dragged him perilously across loose rock and shale to within 150 feet of the top of the Canyon, where they could reach a rope lowered by Ross and his assistants. It took four hours for them to make the rescue, once they were lowered into the Canyon, and all of that time they were in danger of slipping into the plunging river below, in which case their lives would virtually have been thrown away.

In that as in most cases the victims had no business getting lost. But once their lives are in danger, there is nothing for the rangers to do but risk their own to save the others. That is part of every ranger's duty.



The rangers of Mesa Verde National Park tell of a rescue achieved by one of their number of a woman described as "a bachelor girl of indeterminate age." This girl became panic-stricken while ascending the trail from the Square Tower House, reached by ancient foot holes carved in the rock by the Cliff Dwellers. For safety's sake, a rope is in position to assist the climber in pulling himself up. The climb is not a difficult one for a normal person, but this girl, becoming semi-hysterical, planted her feet in two of the holes and clung on to the rope for dear life, screaming for help. She ignored the ranger's assurance that she was in no danger, and refused to budge.

Finally he went down to rescue her. Finding both hands and both feet busy holding on, when the ranger reached her the woman reached over and planted her teeth in her rescuer's arm. She kept them there while he gallantly carried her to the top of the climb, despite his protests that the tooth-hold was painful, unnecessary, and against the rules of the National Park Service ranger force.

The National Park Service goes to great lengths to warn visitors against taking chances. They present every arrival in the national parks with a manual explaining the simple rules and regulations. These are three in purpose: first, to preserve the natural state and the wild life of the parks; second, to protect the lives and persons of visitors; and finally, to assure everyone an equal opportunity to enjoy the wonders and the advantages of the national parks. The rangers are often asked why they take the trouble to register the names and addresses of visitors to the parks. That is a large job in itself. Often it is resented by visitors who like to travel incognito. That registration is for the protection of visitors, for the purpose of knowing how to reach them in case of emergency, and finally to catch criminals or other undesirables who may take to the national parks as a refuge.

Winter patrolling introduces an added element of sport into the lives of the rangers in the trapping and shooting of predatory animals such as wolves, coyotes, and mountain lions. The most numerous of these predatory animals are the coyotes, found in all the parks and killed each winter in large numbers. One of the Yellowstone rangers, Ted Ogston, sets his quota at one hundred coyotes each winter.

The most dangerous of the predatory beasts is the mountain lion. These great cats, sometimes measuring twelve feet from nose to tip of tail, are cruelly destructive of deer and antelope. As a rule, they eat only hot, fresh flesh of a newly killed animal, generally making but one meal off each kill. Their practice is to disembowel their victims, feed

on the warm flesh, and leave the greater part of the carcass untouched, although they occasionally bury the remains to eat later. However, they prefer to kill another deer or antelope rather than eat flesh that is cold. Since they are so wantonly destructive, the rangers hunt down the mountain lions, but never to the point of extinction. They are crafty animals and fierce fighters.

Two Yosemite rangers, whose dogs cornered a lion in a tree one winter, tell of the fight that ensued. The dogs surrounded the base of the tree, barking. As the top swayed in the wind, the big cat snarled and threatened to leap upon his pursuers. Two shots rang out. Both were effective. The great cat snarled and hissed, leered at his enemies, then plunged, claws outspread, straight down upon them. The rangers barely escaped from the spot where the lion plunged into the snow. A young and inexperienced dog charged too near the wounded beast. The great jaws snapped, the lion shuddered and died with his teeth gripping the dog's snout like a steel vise. The rangers had to pry the jaws loose to release the unfortunate canine. His nostrils were pierced by two great teeth. It was a year before he was any good. He never attacked another mountain lion.

The rangers have grown to love all wild life except those predatory species which they so often observe destroying young antelope, deer, or elk. Aside from these outlawed animals, a national park ranger is never known to kill a native animal or bird of the park, or to express a desire to kill. The states surrounding the national parks have open seasons on deer, elk, moose, and other animals, and on birds. Around the parks are some of the best hunting lands in the country, yet never does a ranger ask permission to go outside the park to hunt. He apparently loses all desire to kill, though hunting might have been his favorite sport before joining the ranger force.

Everybody who lives in a national park seems to love the wild animals and wants to make pets out of them. In every park there are ranger stations with special pets. It may be a deer, an antelope, a woodchuck, or even a badger. Squirrels, chipmunks, and other smaller animals are common pets. Occasionally a ranger will tame a family of skunks, and a ranger of Sequoia Park has a family of foxes eating out of his hand. One winter the rangers at Lake station tamed a pine marten. This group also let a skunk family live under the ranger station all spring without molesting them, and the skunks never bothered the rangers.

Finally one skunk died and the whole family had to be persuaded to stay away while the floor was torn up to get out the body of the deceased. It is now believed by the rangers that it is unwise to make pets out of skunks!

"All in a day's work." That recalls a bit of amateur poetry found in one of the ranger cabins in El Dorado National Forest not long ago:

The season's over and they come down
From the ranger stations to the nearest town
Wild and woolly and tired and lame
From playing the "next to Nature" game.
These are the men the nation must pay
For "doing nothing," the town folks say.
But facts are different. I'm here to tell
That some of their trails run right through—well,
Woods and mountains and deserts and brush.
They are always going and always rush.
They camp at some mountain meadow at night,
And dine on a can of "Rangers' Delight," *
Get up in the morning when the robins sing
And break their fast at a nearby spring,
And then they start for another day
With corners to hunt and land to survey.
That trouble settled they start for more,
They're never done till the season is o'er.
They build cabins and fences and telephone lines,
Head off the homesteaders and keep out the mines.
There's a telephone call, there's a fire to fight;
The rangers are there both day and night.
Oh, the ranger's life is full of joys,
And they're all good, jolly, care-free boys,
And in wealth they are sure to roll and reek,
For a ranger can live on one meal a week.

* "Rangers' Delight"—canned tomatoes.

# Dudes and Sagebrushers

All visitors to the national parks are divided into two species, "Dudes" and "Sagebrushers."

Dudes are those who travel by train and motor stage.

Sagebrushers roll their own cars over the mountains.

The term "Dude" originated years ago in the Yellowstone and on the Eaton Ranch in Wyoming. In those days the tourist who could afford the luxury of train travel was considered a person of means. He wore his good clothes, at least until he reached the ranch or the park, and even then he was accused of washing behind his ears. To the old-time horse wranglers on the ranches and to the old stagecoach drivers the infallible test of a Dude was to look behind his ears. Dudes were a bit finicky about the niceties of life, even when they were roughing it. Try as he might to dress as a ranch hand and look like a regular wrangler, the Dude always gave himself away by some little foible.

From a term of derision, the title "Dude" has grown in a quarter of a century to become one of distinction. At first it was used only by the help in the parks. Now Dudes call each other Dudes and are proud of it. The popularity of the Dude Ranch as a headquarters for summer vacationists has helped to give the name distinction. From the Yellowstone, the term spread to the other national parks, with certain variations. In all the parks the Dude is the visitor who arrives by train, travels by motor stage, and stops at either the hotels or the camps. Actually, a visitor's social standing or wealth or taste have nothing to do with his rating in a park. A Dude is a Dude and a Sagebrusher is a Sagebrusher. The latter may own the First National Bank in his own home town and arrive in the finest automobile, driven by a liveried chauffeur, but as soon as he crosses the park boundary he is a Sagebrusher, even if he occupies the presidential suite at the Canyon Hotel.


Nicknaming of people in the national parks does not stop with the visitors. The hired help are called "Savages." They fall into several groups. The dishwashers are called "Pearl Divers." The waitresses are called "Heavers." Tent girls and chambermaids are known as "Pillow Punchers." Chauffeurs are "Gearjammers" or just plain " 'Jam-

mers." Laundry girls are "Bubble Queens." Porters and bell boys are "Pack Rats" or merely "Rats." When a young man and a young woman step out in the evening for a stroll, they are "rotten-logging," in the vernacular, whether or not they surrender to the temptation of sitting out a few dances on a nice soft rotting log. Much of the help in the hotels, lodges, and camps of the parks is recruited from colleges. Youngsters are eager for this work during the summer vacations. One of the great charms of life in the parks is the vivacity and enthusiasm of these college youngsters, the Savages. Thousands of them find healthful and enjoyable employment in this manner. Many of them choose a different park each summer. In some parks they are selected not only for their willingness to work but also for their ability to entertain camp visitors with songs, skits, and programs.

Counting Dudes, Sagebrushers, and Savages alike, the total number of visitors to the national parks each year is approximately three million. That figure makes the parks the greatest tourist attraction of the United States, and possibly in the world. Rocky Mountain National Park for many years held the lead in number of visitors, the figure being about two hundred thousand per year, but the phenomenal increase in travel to Yosemite to half a million a year has given that park undisputed leadership in popularity. Yellowstone Park is now visited by upward of a quarter of a million people each year, Grand Canyon Park by one hundred and fifty thousand, Mount Rainier by an even greater number, and Hot Springs Park by a quarter of a million. Crater Lake, Sequoia, Glacier, Zion, and other parks are sought yearly each by tens of thousands.

The Dudes are outnumbered by the Sagebrushers about four to one in most of the parks. The majority of the Sagebrushers bring their own camping equipment and stop over whenever a mountain, a forest, or a fishing stream strikes their fancy. They move on only when the spirit moves them, lingering as long as they can in the mountains they have learned to love, out where the air is clear and the sky is blue, up where the mornings are crisp, near the clouds that drift lazily by. They delight in roughing it de luxe, in wearing khaki and knickers and boots and sweaters, either about their own campfires or at some rustic camp where food and warmth and shelter are provided.

Traveling through the national parks by stage is comfort itself nowadays, but before the coming of the automobile, it

was an experience enjoyed only by adventurous spirits. The trip to Yosemite on the Cannonball Express, which made the run at what was considered terrific speed in those days—perhaps ten miles per hour—going from the railroad terminal to the Valley in one day, was one full of thrills. Today that same trip is an easy run of three to four hours. The Cannonball Express carried the mail. The contract specified the time limit allowed to make delivery in Yosemite Valley. Hence, speed was essential. On one occasion, the Cannonball ran into a forest fire on a narrow road high in the mountains, at a point where it was impossible to turn around. The flames were sweeping down upon the coach and the situation was one of great danger. Calling to his passengers to cover their faces, the driver whipped his horses to a frenzy and dashed at full speed into the fire and through it. Not one of his frightened passengers was injured, though his horses were badly burned and the canvas cover to the luggage at the back of the coach was blazing when the rolling vehicle came to a stop a mile or so beyond the blaze.

Hold-ups were all too frequent in those days. Daring robbers would fell a tree across the road and trap a stagecoach where it could not be turned around to escape. Some of the bandits made off with great hauls. Some were captured, some were not. One particularly daring hold-up that has become notorious in story was staged about halfway between Old Faithful Inn and the Lake, in Yellowstone. This nervy bandit took a position behind a rock projecting into the road at a very sharp curve, a point from which he could control the road for several hundred yards in either direction. He spread out a blanket near the road, and as the coaches came around the great rock he commanded the drivers to stop. He directed the passengers to step out and empty their valuables from their pockets to the blanket. The passengers were huddled on a hillside which the bandit controlled from his vantage point. As the next stage appeared, he repeated the operation, keeping up all the while a running conversation with his victims, joking about their plight, bantering them, and generally keeping them in good humor. This fellow single-handed actually held up the passengers of twenty-eight stages in a row and made his get-away into the mountains with the blanket containing about four thousand dollars.

This bandit escaped from the park, his identity unsuspected, and he would never have been caught had it not been for a quarrel with his wife, who in revenge revealed his secret. He was then captured, tried, and sentenced to a term in Leavenworth. Finishing his sentence, he went to California, where he died recently eating an ice-cream cone!

Bandit stories and other yarns of adventure in the parks in the early days, as told by the Old-Timers, are still a source of delight to the Dudes as they gather for the evening lectures at the hotels and lodges. Some

of the tales have grown with the years until they have become known as "whoppers." The whoppers started in the Yellowstone country shortly after the first explorers returned to civilization. The stories they told of boiling water spouts eighty feet high, of boiling mud puddles and hot-water pools and streams, were not believed by the wise folks at home, who knew such things just could not exist.

Most noted of all these early purveyors of whoppers was Jim Bridger, the pioneer trapper and pathfinder and one of the first white men to penetrate the fastnesses of the Yellowstone. When Jim Bridger found that the truth was doubted anyway, he concluded that he might as well make his lies colossal ones. He enlarged and developed upon them until he arrived at a state of perfection, the like of which has never been equaled since his time. One of his best stories was an account of how he caught fish in a cold stream, flopped them into a pool of boiling water alongside the stream, and cooked them there. This was not necessarily fiction, for there are at least a dozen places in Yellowstone where one could do exactly that. To vindicate Jim Bridger's veracity in that one instance the Sierra Club, the California mountaineering society, on the occasion of an outing in the Yellowstone did cook trout and make coffee in a boiling pool. So the distance between the truth and the whopper is not very great after all.

A few years ago, in the course of a summer spent in the Yellowstone, Harry W. Frantz, the well-known Washington correspondent and writer, became interested in these whoppers from the old days and gathered from some of the Old-Timers their most whopping whoppers. He used to come to the evening meetings in old buckskin clothes, a Buffalo Bill hat and long, black whiskers. Interrupting the ranger's talk, this picturesque character, who apparently had just straggled into the audience, would demand:

"Ranger, where does the West begin?"

The ranger never seemed to know.

"Well, I'll tell you," the old man would say. "It's halfway between St. Paul and Minneapolis. I know, because I came out here in the 'sixties when there wuz nothin' but sagebrush an' Injuns as far as the eye could see. I helped to start the West, right there. Say, would you like to hear about some of the Injun fights?"

The Dudes always would.

"Well, it wuz in the fall o' sixty-nine an' the Injuns out here wuz thicker'n fleas on a yaller dog. I ran into thou-

sands of 'em, right here on this spot where we're talkin' now, an' when they saw me they started to chase me. Their war whoops wuz blood-curdlin', an' they waved their tommyhawks an' came right after me. I ran up yon' canyon, hopin' to get away from 'em. But they kep' on comin' an' gainin' on me. I ran faster an' faster, but they kep' a-gainin' an' a-gainin' an' pretty soon they caught up with me. I saw something had to be done, an' I looked up. To the left o' me wuz a cliff a mile high and to the right o' me another one half a mile high, an' then all of a sudden I came 'round a bend an' right in front o' me wuz a cliff two miles high. I wuz trapped. That's all they wuz to it—trapped, where the devils couldn't help but get me."

Dead silence, as the old fellow finished his story.

Some Dude always broke it with:

"Well, what did they do to you?"

Trembling with emotion, the old man said: "By God, they killed me!"

Another whopper that always made a hit with the Dudes was the story originally told by "Buffalo" Jones of how he saved the great American bison from extinction. He galloped into the Yellowstone one time, he said, to find the last of the bison being killed by the wolves and the coyotes. In fact, they were all dead but a few calves, which the wolves were just proceeding to kill.

"I roped eight calves and saved them," he asserted, "though the wolves and the coyotes were surrounding us by the hundreds. As soon as I got one calf, I tied my hat to it, knowing the brutes would never touch anything tainted with the fresh scent of man. To the next calf I tied my coat, to the next my vest, and so on, until I didn't have anything on but my socks. When I had saved the eighth, I picked it up in my arms and galloped back for the seventh, which was surrounded by wolves. I then hurried back to the sixth and grabbed that calf just in the nick of time. I tied the lasso around these calves and fastened the end to the horse's neck and raced to the other calves and saved them again just in time. The strain of saving them all was so great that I fainted, but just then my boys came up and drove off the wolves and gave me some whiskey and saved the calves again so that the buffalo was never entirely wiped out."

It is a happy custom which has grown up in all of the national parks for the Dudes and Sagebrushers to gather after dinner about the fire, either in hotels, lodges, or in the private camps, for informal enter-

tainment, starting usually with singing and other musical entertainment and then resolving into the evening discussions with the rangers stationed near by. The rangers talk of the natural wonders, or of the wild life, or sometimes tell tales on the Dudes and Sagebrushers themselves, to their evident enjoyment. The evening fireside gathering has become so popular in some of the parks that the rangers have built open-air assemblies with logs for seats and bonfires for the stage lights. While not as comfortable as the lobbies of the hotels, the campfires give an added atmosphere. Many times the campfire lures prominent guests away from the hotel for the evening. The firelight flickering on the trees, the odor of burning pine, the witchery of the starry sky overhead, the comradery of the camp, combine to cast a spell over the visitor.

From every corner of the land they gather, swapping ideas, talking over road conditions, telling their adventures and listening to those of their new-found neighbors, or enjoying the impromptu entertainment of a band of informal musicians. There is always somebody who can do something under the spell of the campfire.

"I have met people here from every state in the union," exclaimed President Harding after he had visited a number of these camps. "This is a cross section of America. The country is turning to the national parks for recreation. There are no finer playgrounds in the world." Like many another observer, he was enraptured by the spirit, the fraternity, of the campfire "town meetings."

It has always seemed to the rangers that the Sagebrusher has the advantage over the Dude in the enjoyment of this out-of-doors fun in the national parks. The Dude seems always in a hurry, always trying to keep up with an itinerary laid out for him by some railroad or travel agent before he started. Seeking to give the Dude a fine, large travel bargain for his time and money, the agents often hurry him through the parks at a breath-taking clip. Mr. Dude may see more scenery in that way, but he is forced to pass up a lot of the real fun of being in the mountains—this life about the campfires, so colorful, so rich in song and tradition, the chance to shake off the years and be young once more for a few days or a few weeks.

The Dude is not the only visitor who does his sight-seeing fast. Not long ago a ranger at the entrance to Rocky Mountain Park was telling of some motorists who came to the checking station and asked:

"How long does it take to see this park?"

"You could do a good part of it in two days," said the ranger.

"Too long. We haven't time. Gimme a sticker, will you, so I can prove I've been to Rocky Mountain."

This happens occasionally at all of the parks. Why such visitors come, no one knows. Where they are going, no one knows—least of

all they themselves. But these are the exceptions to the rule among the Sagebrushers, who, having their own transportation facilities, are inclined to take their vacationing more leisurely. Having no schedule, they make the side trips, explore for fishing streams and lakes, stop over a few days or a few weeks sometimes at a site that pleases their fancy. The Sagebrushers have always been the nomads of the parks.

Sagebrushers derive their nickname from the early days when their forerunners arrived at Yellowstone, Yosemite, and other older national parks in covered wagons. Days on end they drove their horses or mules across the plains, en route to the parks, camping each night in the sagebrush. Roads were bad, stores were few, and the early camper was obliged to bring with him such comforts of home as he expected to enjoy in the park. The trip was sufficiently strenuous and hazardous that he stayed some time in the park, often a month or more. It took the old-time Sagebrusher eight days to make the loop in Yellowstone.

The first Sagebrushers to forsake their covered wagons for the noisy early automobiles were not very hospitably received at the gates of the national parks. They were told to park their cars outside the boundary lines, until in 1913 the first autos were permitted to enter Yosemite Valley as an experiment. The authorities there were suspicious of the little juggernauts. The owners were instructed to drive them to the parking area in the center of the Valley, where the tiny machines were chained to great logs. By heck, they were not going to have any of those two cylinder buggies starting up and running away!

These stern restrictions quite naturally met with much protest on the part of automobilists, particularly in California where the automobile clubs were growing strong. The main concern over the use of automobiles was not for the safety of occupants of the machines but for the safety of Dudes riding in stages whose horses might become frightened at the automobiles. For a time, there was discussion of building special roads to the parks for automobiles. This plan was abandoned because of the expense, but in most of the parks certain hours were set aside when automobiles could use the roads. During these hours, the horse-drawn vehicles were ordered off the roads. Many people who opposed the admission of autos insisted that the use of a machine in the mountains was but a fad which would pass. The fad has not yet passed, though authorities are now faced with a new problem of the same nature, the admission of the airplane. The rangers still deny planes permission to land in the parks on grounds of safety, and the time may soon come when these worries may seem as unnecessary as those of earlier officials with regard to the automobile.

The increase in travel to the national parks since the automobile came into general use has been phenomenal. Twenty years ago a good

season meant perhaps forty thousand visitors to the parks. Most of them came by rail. Today the figure is three million visitors per season, four out of five of whom come in private automobiles. The safety record of the parks is truly remarkable. In the past fifteen years, almost a million cars have driven to Yosemite Valley with but a single fatal accident within the park. Where is there a city that can equal such a traffic record? In the other parks, accidents have been equally negligible.

The average motorist is more careful in his driving when he reaches the narrow mountain roads. He knows the traffic regulations are enforced by the rangers and he observes them. These regulations are quite simple and are easily understood, even by motorists unfamiliar with the trick of mountaineering in an automobile. The experienced mountain driver knows how to "play safe" on mountain roads. He makes sure that his car is in good condition before starting for the parks. Driving over mountain roads, on which there may be occasional rough stretches, is a test of any car. At high elevations where the atmosphere is thin the motor is under additional strain. It should be in good tune for this extra work. It requires more gas per mile, incidentally.

The veteran Sagebrusher is not ashamed to use low gear in the mountains. He uses it not only to go up hill, but to go down hill and to hold the car back on the short level stretches where curves make it unsafe to go faster than fifteen miles an hour. He knows that use of compression to hold back the car on downhill stretches not only saves his brakes but gives him an additional factor of safety in case of emergency. Yet it is surprising how many inexperienced mountain drivers think that low gear is used only to start the car. The old-timer in the mountains knows that fifteen miles per hour is a good speed on curved roads, twenty to twenty-five is fast enough on the level stretches. He never ventures into the mountains anywhere without a set of tire chains. The occasional rains in the mountains may make the road wet and slippery. The machine without chains is a menace not only to its occupants, but to all others on the road. Yet no matter how often the rangers repeat this counsel, some motorists prefer to learn the lesson by experience.

From these remarks, the impression might be created that the roads of the national parks are hazardous. The contrary is true, as the parks' safety record would indicate. But in the mountains, when showers or a brief snowfall may take place any time, roads sometimes become slippery temporarily. The motorist with chains seldom has trouble. The government has spent hundreds of thousands of dollars improving the roads of the parks and has embarked upon a fifty-million-dollar road-building schedule, but even paved roads, such as are now found in

parts of Grand Canyon, Crater Lake, and Yosemite Park, will not eliminate the occasional need for chains.

It goes without saying that sight-seeing and driving never go well together. The experienced mountain driver parks his car at the side of the road so that others may pass easily, and then enjoys the scenery. It would seem that this suggestion is unnecessary, but the beauties of the park are distracting and the driver sometimes forgets to keep his eye on the road. The driver who parks his car and leaves it should make doubly sure that his brakes are set and his car in low gear. Otherwise he may find himself in the position of a Sagebrusher who visited Crater Lake recently.

This Sagebrusher left his car, a new limousine of expensive make, on the rim of the lake along with a dozen other cars, while he walked down the trail to the lake shore, a thousand feet below. While returning he heard a crash, and looked up to catch but a fleeting glimpse of an automobile catapulting past him and crashing through the trees. It came to rest, a total wreck, far below him. Returning to the rim, the Sagebrusher met a party of Dudes to whom he narrated excitedly the fearful and wonderful story of the car that just missed him and had crashed on the rocks below. Glancing about as he neared the end of his story, he said: "It smashed into a big tree and—and—and, my Lord, it was mine!"

The experienced Sagebrusher never loads a half-ton car like a ten-ton truck. The beginner often reaches the steep grades of the mountains with luggage tied on both sides of the car, on the front, on the back, with a bed spring on the top and goodness knows what inside the old bus. Sometimes the women and children are literally buried in camping equipment, while the driver himself can barely see the road ahead. What any of them might see of the beauty spots along the roads is often hidden by the marvelous collections of windshield stickers that are the pride of so many amateur motorists. Some of these motorists, with their cars laden with stoves, beds, groceries, and what not, would never reach the parks were it not for the unfailing kindness of other motorists.

Long experience has taught the rangers that the all-wool blanket is the only kind to have in the mountains. In the summer time, when the nights are cool but not cold, the ranger uses a sleeping bag with but one double wool blanket in it. In the autumn, when he camps out at freezing temperature, he adds one more wool blanket around the sleeping

bag but inside the oil-skin cover. Since showers are frequent up in the mountains among the clouds, the rangers advise every Sagebrusher to have his bedding in oiled silk or other waterproof cover. The warmest place to sleep is on the ground. It may take the tenderfoot some time to become accustomed to sleeping on the hard earth, but he will find that it requires much less bedding than the air mattresses, army cots, or other ingenious portable beds. Of course these comforts are highly desirable, if they do not overburden the car.

A list of necessities for the Sagebrusher who proposes to camp out in the parks would include the following: one light-weight tent; one oiled-silk sleeping bag for each member of the party, or other good beds with all-wool double blankets; one gasoline camp cook stove, one frying pan, two pots, a coffee pot, and a compact set of plates and utensils; fishing tackle, an axe, a shovel, a hot-water bottle, several yards of mosquito netting, a flashlight with extra batteries, an emergency medical kit with common remedies and bandages; a day's supply of food, to be replenished en route and increased in case of excursions into remote, unsettled areas; a complete set of car tools, two spare tires, a tow rope, and by all means a good set of tire chains.

That amount of equipment will see the average camper through in fine shape. Of course as he goes along the Sagebrusher's inventive ability will assert itself and from time to time he will devise new wrinkles in camp equipment, until after a season or two the rangers will be listening to him explaining how he enjoys "all the comforts of home."

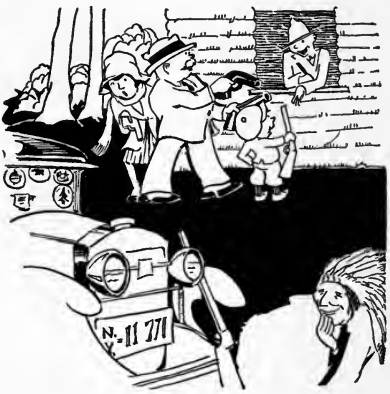
Arriving at a national park boundary, the Sagebrusher will be received, registered, and checked in by a ranger at a station. This is for the protection of the Sagebrusher, so that in an emergency the rangers may find him and so that undesirables may be kept out of the park. This registration is resented by some visitors, who feel that the rangers are making undue inquiries when they ask the address, the occupation, the name of the car, and other details. One question always asked is, "Have you any firearms?"

A young Sagebrusher at Mesa Verde Park, who found this registration irksome, replied to this question angrily:

"Yes, of course, I carry matches. What do you think I am, a kid?"

The rangers examine all guns, make sure they are not loaded, and then seal them, so that no shooting can be done in the park. The guns

must be checked out, still sealed. Most of the heavy artillery carried into the parks is brought by visitors from the cities of the East. Starting the long trip for the wild and woolly West, they want to make sure that they can at least die fighting if death at the hands of the Indians or bandits or bears is to be their fate. Westerners as a rule do not carry firearms. Knowing the West, they feel quite safe among the Indians, the bad men, and the bears. The New Yorker's impression of the West undoubtedly is derived from hair-raising adventure stories in the magazine thrillers and in the conventional wild-west movies. As a matter of fact, the easterner is much safer in Jackson Hole, Wyoming, or Hangtown, California, than he is on a street corner in Chicago or New York.



From the ranger who checks him in, the Sagebrusher will receive a free guidebook, map, and other literature prepared by the government for his benefit. The ranger is ready to answer questions and to help plan the trip through the park. Occasionally a Sagebrusher ignores this assistance, tosses his literature into the car and follows the next fellow, who as like as not is wandering aimlessly. The rules and regulations of the parks are extremely simple and are made solely for the purpose of protecting the park, the wild life, and the visitors. They can be read in ten or fifteen minutes, after which another five minutes spent in discussion with a ranger will enable the visitor to know where the main attractions lie, where he can camp, which are one-way roads, and where food and other supplies are available, or where he can find meals and lodging and at what prices.

Ninety-nine out of every hundred visitors are quite in sympathy with the simple and reasonable rules of conduct in the parks. They are, in brief, as follows: Avoid speeding, never leave fires burning, clean up campgrounds before leaving, don't tease the animals, never carve names on trees or rock formations, leave the wild flowers for others to see and enjoy, and in general help the rangers protect the parks for the three millions who will be coming next year.

In the parks the motorist finds campsites cleared and prepared for him. They are equipped with running water, rough tables, and sanitary facilities, including flush toilets. Wood is available nearby. Some of these campsites have fireplaces, for the first-comers at least, and nearby are stores where supplies can be purchased, and in the larger parks, cafeterias where meals are served at reasonable prices. Near many of

these campsites are tents, already set up, to rent at ridiculously low rates for housekeeping purposes. These tents are equipped with beds, stoves, and tables, and all the Sagebrusher needs is his own bedding. Each year the park engineers develop new campsites or increase the capacity of the old ones. Each year the Sagebrushers demand still more campsites.

It is a thrilling sight to visit the camp at Fishing Bridge, Yellowstone National Park, or near Stoneman Meadow, Yosemite National Park, or any of the dozens of others, and see from five hundred to a thousand city folks busy with their little fires, the odor of a hundred coffee pots and a hundred frying pans filled with bacon wafting across the woods. Look into almost any camp and you will find fresh-caught trout sizzling in the pans. Visit any of the scores of campfires after supper and you will find half a dozen families swapping experiences of the road.

A generation ago, camping out was a means of getting away from the conveniences and conventionalities of home. It was the complete change from civilization to primitive life, from niceties to hoboing. The rougher the camping, the better. The camper wanted hardships, sought them out. Not any more. Camping, to the average Sagebrusher, is merely an economical means of traveling about the country, of seeing the sights that formerly were available only to the well-to-do, the Dudes. The modern Sagebrusher wants a camp that is almost as convenient as home. Many of them have such camps. It is an education in organization and in housekeeping to see how some of these camping layouts are planned and used. That is one of the joys of Sagebrushing, seeing how the other fellow lives, just a few yards away from you behind that clump of trees.

Nevertheless, and in spite of the fun there is in campfire cooking, the rangers say that the average family of Sagebrushers would enjoy themselves more if they took advantage of the luxury of the cafeterias in the national parks. That would relieve the women folks of the drudgery of cooking and dishwashing, something the male Sagebrusher usually avoids by declaring seriously that he must go out and provide the family with a mess of fish. The rôle of the provider is a complacent one.

Sagebrushers bound for the national parks or traveling in the parks will do well to refuse rides to tramps, whether they be men or women.

This observation applies to motoring anywhere at any time. Unless he knows the person who begs for a ride, the motorist endangers himself and his car. The newspapers are full of reports of kind-hearted motorists being killed or injured by tramps whom they kindly picked up for a ride on their way; and there are many more stories of cars being stolen by these bums. It is no longer a rare occurrence for women to steal cars from people who have befriended them, and often these days we hear of women hikers using guns or knives in taking possession of cars and their contents.

In the national parks the tramp is regarded with suspicion. If he appears at the gates afoot, he must produce a bedroll or a roll of greenbacks with which to rent a bed at the hotels or camps, or the rangers turn him back. The same thing applies to women afoot. However, most of the tramps get into the parks in the cars of the bona fide Sagebrushers, and the rangers' problems arise usually when the bums seek beds or meals for which they have no money to pay. Hotel, camp, and lodge owners in the parks are authorized to give their night watchmen keys to vacant tents and cabins, with instructions to examine them at different times during the night, and if anyone is found therein to take very essential parts of any clothing lying around to hold until the rangers can arrest the person who is stealing a bed.

One morning the rangers had a call from Old Faithful that two tramps had been caught in a cabin of the lodge there. Their trousers, shoes, and hats had been taken by the night watchman and they had come barefooted with blankets wrapped around them to the ranger station to tell about their predicament. They were from good families in Racine, Wisconsin, and were students of the state university. They had plenty of good references. They wanted their clothes back. They told this story: they had agreed to start from Madison with eight dollars apiece and go to San Diego on that amount, bumming rides, meals, and lodging as they came west. They had not intended to include Yellowstone Park in their itinerary, but upon arriving at Cheyenne they begged a ride with a congenial party headed for the park and hastily revised their plans. Upon arriving at the park gate, the crowded condition of the car, the evident feeling on the part of the owner that he would like to get rid of his guests, and the registration of the two from a town widely separated from the home of the car owner attracted the

attention of the rangers, who made the boys get out of the car. As they had only about three dollars apiece, the rangers told them to go back to Cody or some other town and earn enough money to pay their way through the park.

Of course, the young fellows simply went down the road, then turned into the timber and walked into the park some distance from the ranger station. Several times they thought they could have begged rides, but rangers were always near by and they were afraid to stop the cars. Motorcycle rangers still further increased their fears. They had to spend their remaining dollars the first night in the park for meals and lodging. They were broke when caught. They were told that their bumming days for the present were over; that they could do one of three things: wire home for one hundred dollars apiece, then leave the park; go to work on road maintenance in the park at regular wages and stay until they earned that much; or go before the judge with a jail sentence for vagrancy certain to be imposed on them. They finally decided to wire for money, which they received before the day was over.

The park officials took occasion to lecture these boys, pointing out that they were pursuing a course which was morally criminal. True, they had not stolen anything which the law could punish them for except the bed in the lodge, but they had been stealing happiness from people all the way from their college town, they had spoiled vacations by crowding kind-hearted families, they had eaten food which other people had paid for, they had slept in and perhaps impaired robes, extra bedding, and other equipment which did not belong to them; in short, they had been thieves of a sort and that after all a thief is a thief no matter what he steals and no matter whether the law can reach him or not. This talk made an impression on the boys and they promised they would never "bum" another ride as long as they lived.

One night at Yellowstone two attractive girls appealed to the rangers for help. They claimed to be hikers but were broke and wanted to know if there was any place provided by the government where they could sleep. They said they were from Cleveland and had come thinking it would be lots of fun to hike through the park. Asked how long it had taken them to "hike" from Cleveland, they said eight days. Anybody could tell by looking at them that the sun had never shone upon them nor had their feet ever touched a dirt road. But here was a problem that had to be solved, so the rangers called up the laundry and fortunately found that a few girls were needed. The two were sent to the laundry to work until they could earn enough to travel.

This type of walker must not be confused, of course, with the legitimate hiker, who comes to the national parks to spend his days afoot

on trails, journeying from camp to camp and paying his own way, or camping overnight with his own equipment carried on a burro. There are thousands of miles of trails in the parks and six hundred miles of them in one park, Yosemite, over which tens of thousands of visitors, both Dudes and Sagebrushers, tramp each year, to their great enjoyment. In fact, the trails provide the only way that many of the more beautiful spots in such parks as Yosemite, Glacier, Rocky Mountain, and Sequoia can be reached, and along the Pacific Coast hiking has become one of the most popular of sports as well as a most healthful one. This type of hiker is welcomed to the parks, for he is almost invariably a true lover of the mountains, appreciative of the opportunity to hike that the national parks offer.

Tramping over the park trails one is struck by the great number of women making the trail trips alone. Dressed in khaki outing suits, with strong boots, their knapsacks strapped to their backs, they trudge over the mountains from camp to camp, as safe as they would be in their homes. During the summer months, the school teachers and other feminine vacationists in the parks are so numerous that they far outnumber the men. In most of the parks, for the benefit of women who are traveling alone there are numerous walking parties under the charge of ranger naturalists making the trail trips from the different camps. In Yosemite, the concessioner company operates a chain of camps extending through the High Sierra at strategic points along the trails where the hiker or the trail rider may find food and lodging at a minimum of expense, thus relieving him of the burden of carrying a roll of blankets or a pack of supplies. In Glacier Park chalets located on the trails all through the mountains furnish the same type of service.

Trail riding is another recreation that adds to the fun of the Dude or the Sagebrusher. At strategic locations in all of the parks, pack animals and guides are available to take the visitor over the trails to the remote attractions not reached by automobile roads. The horses and mules used by the trail riders are trained for this type of work. Even the novice at riding can manage them by allowing the animal to use his own judgment in the matter of speed and in picking his way along a narrow trail.

Many and peculiar, at times, are the incidents in the life of the national parks. There is always something doing, for either the Dude or the Sagebrusher. The main object of the parks, of course, is to pre-

serve the wonders of the parks for the enjoyment of the people. They are the people's parks and the few regulations imposed by the rangers are for the enjoyment of the visitors, present and future. The rangers are deeply conscious of that fact and whether the tourist comes as a Dude or a Sagebrusher, the ranger, wherever met, is at the service of the visitor to help him find the hotel or lodge he seeks, or the campsite he wants, or to tell him where to fish or how to reach a certain mountain or view a waterfall or find the trail to the big trees. The Dudes and Sagebrushers number three million per year. The rangers number a mere two hundred. Each ranger, then, must serve fifteen thousand visitors a year. He does his best, but at times he is a bit rushed. Those are the times when he needs the co-operation of the Dudes and Sagebrushers. Those are the times when he craves their patience and charity.

# Speaking of Bears

"Oh, Ranger! Where can I see a bear?"

The bears are, without doubt, the greatest single atttraction in the parks, at least from the visitor's point of view. Geysers, waterfalls, mountains, canyons, great trees centuries old, all fade into secondary importance in the visitor's interest when a bear ambles into sight. Furthermore, they remain of secondary interest as long as the bear continues his antics. The rangers say that in Yosemite National Park a visitor will look at Yosemite Falls, half a mile high, one minute and then turn around and watch a bear one hour.

This amazing interest of the American public in bears goes back to childhood days. Boys and girls are raised on bears. They are brought up on Little Goldlilocks and the Three Bears, and numerous other bear tales. Bears are no longer wild animals to us. They have become personified. They are like people, and the visitors to the parks want to treat them as such. That probably explains some of the foolish things people try to do with the national park bears.

"Fooling a bear" is something that just shouldn't be done. We had a bear in Yellowstone known as Mrs. Murphy. There had been several complaints about Mrs. Murphy, who was accused of nipping visitors' hands and feet, so a ranger was assigned to shadow her for a day and see what was happening. He reported as follows:

One Sagebrusher, for the sake of a picture, held some bacon in his mouth and coaxed the bear to remove said bacon from his mouth. He got his picture and also escaped without injury. That Sagebrusher was lucky.

Another tourist tried to make Mrs. Murphy jump for candy, like a dog. Mrs. Murphy reached up, knocked the man's hand down so that she could reach the candy. That frightened the tourist considerably, but he escaped without injury. He, too, was lucky.

A Dude, with no candy or food, held out his hand as though there were candy in it. That made Mrs. Murphy angry and she nipped the man on the toe. He retaliated by kicking Mrs. Murphy on the nose, which is a bear's most sensitive spot. She responded by whacking the Dude with her paw. He was bruised but not badly hurt. He was lucky.

Fully two score people fed Mrs. Murphy

and her cub that day in the proper way, by throwing candy to her, and were entertained for hours by the bears with no incidents nor accidents.

The only innocent visitor to suffer injury was a Dude who, disregarding a ranger's warning, insisted upon walking between Mrs. Murphy and her cub, to take a snapshot of the cub. Apparently believing her cub in danger, Mrs. Murphy rushed the Dude, tore out the seat of his ice-cream pants, and, as she thought, saved her cub. The Dude rode the rest of the day in a blanket to seclude a certain blushing and overexposed portion of his anatomy.

After receiving this report, the rangers decided that Mrs. Murphy was no more guilty than the Dudes and Sagebrushers who attempted to fool her with food that did not exist.

There are two kinds of bears in the national parks, grizzlies and black bears. The grizzlies can be seen only in Yellowstone National Park and occasionally in Glacier and Mount McKinley National parks. Otherwise, they are almost extinct, being much prized by hunters and trappers for their fine gray fur, tinged with silver tips. The grizzly is a wonderful animal, perhaps the strongest and most ferocious beast of the American forest.

Indirectly Yosemite National Park was named after the grizzly. "Yo-semite" was the Indian word for "the Grizzly." It was chosen as the tribe name following a valiant fight by a brave, who, single-handed and unarmed, slew a ferocious grizzly on a trail near Yosemite Valley. The Yosemites themselves were a fierce, warlike tribe, and they were well named after the grizzly. It is greatly to be regretted that the grizzly bear has entirely disappeared from Yosemite National Park, hunted down and exterminated before the territory became a protected area.

Grizzlies are true animals of the forest. They avoid human habitations, roads, camps, and are seldom seen by the average visitor to the national parks. At the Canyon in Yellowstone, as many as twenty-five of them can be seen at dusk, feeding at the garbage pit. They are shy and take to the forest upon sight of humans. This seems strange in view of the fact that the grizzly is master of the forest. The other bears fear him, and flee to the tree tops as soon as a grizzly approaches. The grizzly cannot climb trees because his claws are too long to give him purchase in the bark. The grizzly can be recognized by his broad head and by the hump over his shoulders, as well as by the silver tips of his fur.

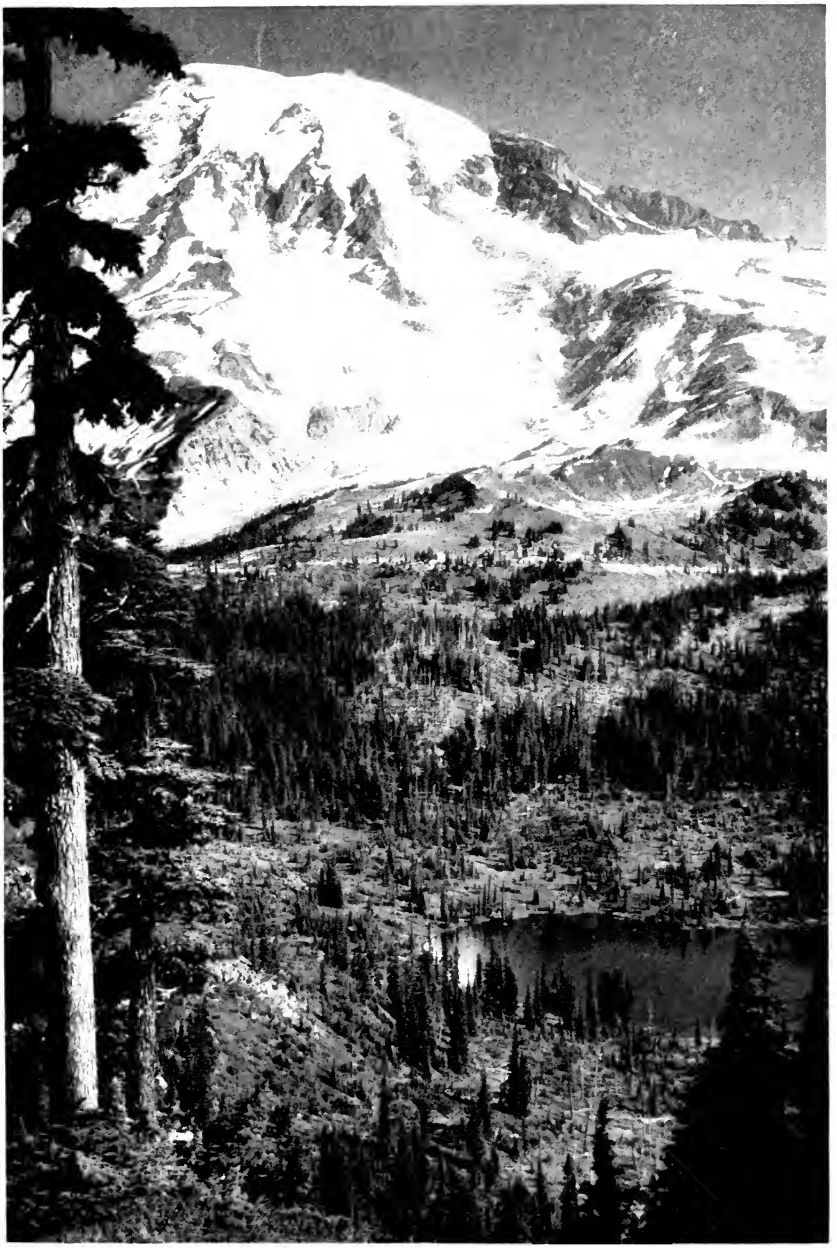
At the Canyon, two grizzlies, while but cubs, became separated from their mothers and fell in with the black bears. From the black bears they learned strange ways, including familiarity with humans. They frequented the camps of the Sagebrushers and learned to beg, something that a self-respecting grizzly will never do. These two grizzlies, as they matured, have given the rangers some worry because a grizzly when

*Bears raiding a garbage can in Yosemite*

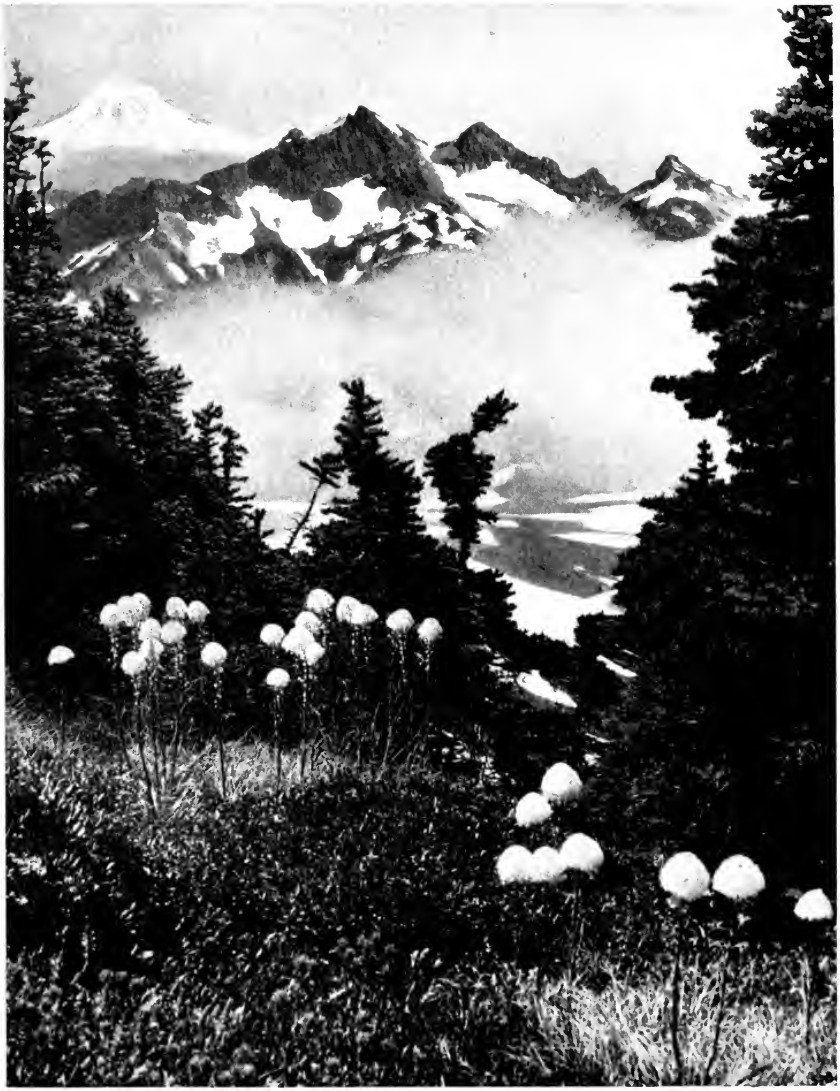
*Bear cubs in Yosemite Park*

*"This is the bedtime story hour, friends.
Once there was a bear . . . ."*

*Saturday night*



*Mount Rainier, from Tatoosh Range, Mount Rainier National Park*



*A view from Timberline Ridge in Mount Rainier National Park*

"fooled" or provoked is a dangerous animal, and we have trembled to think what they might do if some foolish tourist attempted to tease them.

The black bears are the bears that most people know. In spite of the popular belief to the contrary, there is no species known as the brown bear. Black bears may be either blonds or brunettes, just as are humans. The blonds of the bear family are brown, or cinnamon. There are various color phases ranging from light brown or tan to the deep black.

The black bears are the clowns of the forest. They are full of tricks and their antics never fail to give the Dudes and Sagebrushers a thrill. After all, a bear does seem terribly human, and when he sits on his haunches, his fore paws spread out before him, his head up like that of a human, he almost invites you to talk to him. As a matter of fact, most people do talk to the bears, just as though the animals could understand, and the things that are said by the Dudes and Sagebrushers are as funny to us as the bears must be to them.

"Come on, Mr. Bear, get some candy. That's right. Come on, right over here, so we can take your picture. There it is. Here's another piece! Attaboy, nice bear! Here's some more. No, don't come so close. Stay over there, in the sun, where we can take your picture. Attaboy. No, go on away, that's all the candy I have. G'wan away. That's all. I tell you that's all there is!"

The bears have heard that particular line of thought so frequently that they must know it by heart. The funny part of it is that no matter how much the Dude denies he has more candy, the bear knows for sure whether or not Mr. Dude is telling the truth. A bear has a marvelous nose. His nose knows, and no fooling. If the Dudes only realized this, they wouldn't try to lie to the bears about having no more candy.


It is this nose for candy, or nose for bacon—almost equally tempting to a bear—or the nose for ham, another great weakness with bruin, that leads the bears of the national parks to break into motor cars searching for food. They know when food is left in a car. We warn Sagebrushers to remove all food from their cars at night, but occasionally the warning is forgotten or ignored, and then we receive a complaint that a fine car has been scratched up or the window smashed by a hungry bear. Out in Yosemite National Park the Sagebrushers have been talking of taking out bear insurance to cover this form of damage to cars.

Of course, Mr. Bear is just as likely to visit your camp if his nose knows there is bacon about. The best way to be sure of your bacon, when on a camping trip, is to hang it in a tree so small that the bear cannot climb it. Large bears cannot climb small trees. They must choose large ones, so that they can hug the trunk while they fasten their claws into the bark.

Even this scheme is not always a sure way of protecting your meat from the bears. One Yosemite ranger tells of seeing a mother bear trying to get a ham from a small tree which she could not climb. After trying vainly to shake it down, she went into a huddle with her cubs. In a short time one of the cubs climbed the little tree, chewed the ham loose and knocked it to the ground. The old bear seized it and, with the cubs scampering after her, raced off through the woods, elated over prospect of a feast. About the only sure way the rangers have found to keep a ham out of reach of bears is to suspend the meat on a rope halfway between two trees and high enough so that all a bear can do is sit on his haunches and survey the prospective meal wistfully. After a while he will amble off, growling to himself, "Sour ham!" or words to that effect.

The easiest way to scare a bear is with noise. Beat a tin pan or rattle some pans in a pail and the bear will lose no time in his retreat. Oftentimes this is more disastrous than the robbery. One of the rangers, stationed at a lonely cabin, was pestered so much at night by bears whose noses knew of his bacon that he could hardly sleep. He would be wakened by their clawing and scratching at the door. Tiptoeing to the door, he would throw a chunk of wood at them. They would scamper off in great haste, apparently frightened to death. In an hour, their noses would lead them back, lured by the scent of bacon. Finally, the ranger hung up a pail, filled with tin cans, pans, and other metal objects, adjusting it with a trigger which the bears themselves would set off with their clawing. The device worked so well that when the pail, pans, and cans came clattering to the ground the bears took away the whole railing of the cabin porch in their hurry. But they never came back.

It is never a good plan to go out and give the bothersome bear a kick on the tail. In the first place, a bear has no tail to speak of and in the second place he may resent the ceremony. A ranger in Rainier Park tells the story of a little bear that had been pestering him about the cabin, knocking over the garbage pail every night. Finally the ranger lost

patience and planned to punish the little bruin. The next night, hearing the customary crash outside, he went out with vengeance in his eye. All he could see was the tail end of a bear protruding from a large garbage can. Apparently, bruin was stuck in the can. The ranger was about to take advantage of the unique opportunity to spank the bear when the latter got loose from the garbage can and stood up. Instead of the little bear he had expected it was a big fellow six feet tall in his stocking feet. The ranger immediately abandoned the idea of spanking the bear!

This same ranger tells of tracking a mother bear and three cute cubs through the woods for miles, trying to take a picture of them. They refused to leave the dark woods in which picture taking was an impossibility. The mother bear preceded her cubs, tearing bark from trees and overturning rotten logs, while the cubs hungrily hunted in the bark and decayed wood for grubs, ants, and other choice morsels of food. Finally she tore the bark off a dead hemlock near the edge of the woods, then hustled her family out into the long grass of the meadow where she and the cubs rolled over and over in the grass. This was just the opportunity the ranger wanted for his picture. Hurrying to the edge of the woods, he took position and focused his camera. He didn't focus long. Out of the hemlock tree trunk, abandoned by the bears, there buzzed a swarm of angry hornets. The bears were rolling to shake off the attacks of the vindictive insects whose home they had wrecked.

As a rule, bears do not visit camps or cabins when the occupants are about. They have learned that Sagebrushers and racket are closely akin, and in order to avoid the racket they avoid the Sagebrushers as well. The establishment of the bear pits in all of the national parks where bears are common has helped to keep them away from the camps and cabins. A bear's apparent object in life during the summer is to eat enough to make up for the six months of winter when he is fasting, and Mr. Bear knows he can eat a lot more in an eight-hour day if he eats "combination salad" at the bear pits than he can if he nibbles at tidbits stolen from campers.

"Combination salad" à la bruin is the edible food from the kitchens of the hotels and camps, which is dumped in enormous piles at the pavilions of the bear pits. Around these pits are built fences to keep the visitors at a safe distance, not so much to protect the people from the bears as to protect the bears from the people. That recalls the remark

of a ranger at Old Faithful, in response to the question of a Dude as to why the ranger carried a high-powered rifle.

"Is that to shoot the bears if they bother the people?" he asked.

"Naw, it's to shoot the people if they bother the bears," wise-cracked the ranger. "Every now an' then I have to shoot a few people."

You should have seen that Dude's jaw drop.

The facts are, we have a rifle there as a safety-first proposition. Sometimes as many as two dozen bears will gather at the "combination salad" plate at one time. The rule in Beardom is that the biggest bears can eat all they want first, then the next sized bears come along, and so on, until if there is anything left the little fellows can have some. Sometimes there is a difference of opinion among the big fellows as to who is biggest and first, and if they got to fighting it might be dangerous to visitors to the park, particularly when several hundred of them are crowded around the inclosure. When a bear takes a notion to make a get-away, he goes. He doesn't look to see if people are in the way.

Ranger Arthur Chapman, Jr., son of the author of "Out Where the West Begins," tells of an amusing adventure at the Old Faithful "salad bowl" one time when one of these little bears grew tired of waiting for the old ones to finish eating. He was hungry and the salad was disappearing at an alarming rate into the mouths of three huge bears wallowing improvidently in the middle of the bowl. The little bear, contrary to his usual policy of waiting patiently on the woods side of the pit, came around to the side the people were on, where there were a lot of cans and pans between the spectators and the pit. He walked slowly to a pile of tin cans about fifty feet from the bears, fanned his anger into a frenzy, slammed cans noisily in every direction, growled loud enough to be mistaken for half a dozen bears, and charged across more cans at the "salad bowl."

The suddenness and the noise of his attack frightened the big bears, who ran off to the woods, perhaps fearing the arrival of a grizzly. They left the "salad" to the victorious little bear, who ate greedily.

On the following evening, he attempted to duplicate his bluff. This time the big bears were wise. Instead of running, they charged at the little bear. It was his turn to beat a fast retreat. He ran straight for the crowd of people watching the bears from the railing around the pit. It looked as if the time had come for the ranger to use the rifle, what with those angry big bears tearing after that little fellow and all headed for a crowd

of people. Fortunately, the big bears stopped their pursuit suddenly and returned to their feast. Only the little bear ran into the crowd, which, in less time than it takes to tell it, faded away leaving a lane for his escape.

In Yosemite National Park the bear pits are located some distance from the camps and lodges and the feeding of the bears is made a great event. In the evening just after dark, Dudes in motor stages and Sagebrushers in their own cars drive to a spot along the Merced River. All is quiet and dark. Suddenly the lights are flashed on across the river, revealing the "salad bowl," with anywhere from half a dozen to a score of bears growling and feeding as the bear man dumps numerous garbage cans of supper for them. A tree stump in the middle of the platform is painted with syrup each evening, and there is great rivalry among the bears to get at this. Bears are like little boys in one respect—they prefer desserts to entrées, any day.

An odd impasse between the Yosemite bears and the Yosemite authorities came about a short time ago when a new garbage incinerator was installed in the park. It was decided that henceforth the garbage would go to the incinerator, instead of to the "salad bowl," and the bears became real cantankerous as a result. They raided camps, stole from the store and the market, and banged garbage cans around ferociously each night, raising havoc in general. The newspapers on the Pacific Coast took up the issue for the bears in their news and editorial columns, insisting that the Yosemite bears were on strike and that they were resorting to sabotage as a protest against the new incinerator. Reporters created the fiction of a bear's union known as "The Amalgamated Brotherhood of Black, Brown, and Cinnamon Bears," and published daily telegraphic reports of the strike activities.

Public interest in the matter was great, and the rangers received dozens of letters from newspaper readers protesting against the outrageous treatment of the bears. We finally wrote to Superintendent Lewis of Yosemite, offering to give the Yosemite bears plenty of garbage and an eight-hour day if he would send them up to Yellowstone. After that, the Yosemite authorities relented and restored the "salad bowl," and the end of the strike was hailed generally as a great victory for the Amalgamated Brotherhood of Black, Brown, and Cinnamon Bears.

Bears are always doing unexpected and perverse things. That is one of the reasons they seem so human. There is always a surprise in a bear. There is always some play in him. He loves to fool somebody else, but he doesn't like to be fooled himself. That is human. He wants his own way. He has his moods when he is sulky, when he is friendly, or when he is just plain ornery. The way to a bear's heart is through his stomach, the female of the species being just as susceptible in this

as the male. Another human attribute, poets to the contrary! When a bear is hungry he is cross. When he is full of "salad" he is sleepy; when he is eating he doesn't want to be bothered. So there you are!

One of the funniest things in the world is a bear with a bottle of syrup. He will act for all the world like a drunken sailor, in full sail, as he wobbles about trying to get the syrup out of the bottle and into his mouth. The rangers at Sequoia Park tell of a bear that stole a bottle of vanilla from a camp and actually found the flavoring so potent that it interfered with his faculties. Trying to find his way home, this bear walked head on into a two-thousand-year-old sequoia tree. Unabashed, he tried to push the tree out of the way. The sequoia stood pat, and it required some assistance from the rangers to get the hilarious bear back on the trail again.

Sagebrushers at Mammoth Auto Camp in Yellowstone awoke one morning to find a bear sitting on the limb of a tree with his head caught fast in a hole in the tree. He had attempted to steal the squirrels' winter supply of nuts and bread crumbs, and in working his head around in the hole probably caused his head to swell a little. Anyway he could not get it out, and there he was on the limb of the tree with no chance of extrication except with human help. A ranger climbed the tree and got above the bear's head, and carefully chopped the hole larger, until bruin toppled from the limb with a resounding bump. With a "woof, woof," he was off through the timber.

Occasionally tame bears are given to the rangers by people outside the park who have raised them from tiny cubs. They either grow too big for family pets or the people owning them wish to move and cannot take their bears with them. About two years ago, a lady brought two bears over to Yellowstone. They were four years old and big fellows, one black, the other brown. She wanted them liberated in the park to live happily until the natural end of their lives. We found, however, that she had been too successful in taming them. They did not want to be wild bears again. They were just like dogs. We had to build a pen for them to keep them out of the lobby of the hotel, or from eating off the dining-room tables. When winter came, the chief ranger built a little log cabin in the pen for them to use for hibernation. It had one small door in the end. One day while he was inside the cabin chinking it to keep out wind and snow, one of the bears walked in, thus blocking the door. It took the chief about half an hour to coax the bear to go

out, so that he himself could turn around and escape. After that the chief closed the door when he entered the bear's house.

The life of a bear in his natural state is full of paradoxes. He is born while the mother is in hibernation, in a close, evil-smelling, almost air-tight cave. She is asleep, not as sleep is ordinarily known, but in a state of coma, almost lifeless, barely breathing. She has been asleep for three or four months, with all normal functions of her body suspended. New-born bears are tiny, hairless little things, no larger than squirrels. They snuggle up in the warm hair of the sleeping mother bear's breast, and there they suckle and slumber, growing a little, acquiring a coat of fur. When she awakes in the spring, they are perhaps a month old. She is weak and mangy as she leaves the cave in search of food. She leaves the little ones in hiding in the cave for two weeks or a month longer.

All bears hibernate, of course, males as well as females. The latter seem to suffer no more from their long fast than do the males, in spite of the strain of bearing the young and feeding them a month on reserve strength from the last summer's food. One would think that the ravenous bear, fresh from hibernation, would eat everything in sight. But that is not the case. The bears spurn the food proffered by human friends for a month or more, rooting in the forest for certain herbs, roots, and natural food which their appetites crave. Then they are ready for the long-distance championship salad-eating contest.

The little bears seem to grow before your eyes, once they are brought from the cave by the mother bear. They are soft, fluffy, lively, the cutest little animals alive. No wonder they are so popular with the camera fans! No wonder, now and then, a visiting Dude forgets the invariable rule of the mother bear that no one shall come between herself and her babes! No wonder the Dudes and Sagebrushers love to watch those little fellows going through that first year of schooling under the coaxing, the guiding, and the spanking of the mother bear.

About the first thing the little bears must learn to do is to climb trees and to climb them fast, for safety's sake. The black bear's main worry is the grizzly, and the only sure way to avoid a grizzly is to climb a tree. More than once the rangers have seen a grizzly approach a "salad bowl" and watched the black bears scamper to tree tops, where they patiently sit until the grizzly has eaten his fill. You would think to look at them that the black bears were up in the trees from choice, so utterly oblivious are

they to the actions of the grizzly. However, as soon as Mr. Grizzly leaves the bowl the other bears come down from the tree tops in a hurry, to take his place at the feast.

A bear up a tree never fails to excite the curiosity of the Dudes and the Sagebrushers. They form a circle around the tree, with cameras pointed upward, and hundreds of films are exposed for a picture which, unfortunately, is seldom a success. The bear is generally too high for good pictures or he is shaded by the foliage of the tree, and the most the picture will show is a shapeless black spot which must be pointed out and explained.

"That's the bear I shot in Yellowstone," they'll tell you later, proudly displaying a picture. "See that black spot? Well, that's the bear."

The bear cubs are often elected to the task of climbing the trees to shake down nuts and fruit to the mother bear. After she has eaten all summer, the old bear begins to fatten and she is careful about climbing trees for fear the limbs will break. Then is when she makes the cubs do the work. In Yosemite especially have the mother bears worked this out to a fine science. Some of the early settlers in Yosemite planted apple trees about the valley, long before it became a national park. Every autumn the cubs are sent up these apple trees to knock fruit down to the mothers. Whenever a cub falls down on the job or returns to the ground to eat some apples himself, he is cuffed and sent crying back to the tree top. Not until the parent is fully satiated with apples can the cubs take their turn at eating.

Dudes are always asking about the private life of the father bears. Are they faithful husbands? Are they good providers? Do they do the spanking of the cubs, as in the case of humans? And so forth.

We dislike to expose the weaknesses of the national park bears, but candor forces us to admit that the father bears are not much account as such. As for their family life, it just isn't. The males hibernate in separate apartments, or dens, all winter long. They are not present when the young are born. They don't even send flowers. The little cubs probably never know who is their father, unless perchance the mother bear should meet him and introduce him to his offspring sometime during that first summer. The mother bear takes the cubs to her den during their first winter in hibernation. But once the winter is over she is tired of them, and she chases them away to forage for themselves as soon as spring comes. After that the cubs are not on speaking terms with

either mother or father. No wonder they turn to the Dudes and Sagebrushers for kindness and candy!

It is strange indeed that the bears should prosper and increase in numbers under these harsh conditions of youth. But they do. They are increasing so rapidly in Yellowstone that it is becoming a problem to know how to handle them all. Bears are sluggish, easy-going creatures, but they are quick to learn. The hold-up bears are an example. A few years ago a bear we called Jesse James learned that by stopping automobiles on the road he could be fairly sure of a hand-out, some candy or cookies, or food of some kind. Other bears were quick to learn the same trick, and now there are a score of hold-up bears in the park.

One of the hold-up bears gave birth, not long ago, to two cubs which were named Tom and Jerry, after due consideration by the rangers. These cubs had the makings of two of the biggest rascals in the park. They were full of fun, their antics always attracting the Dudes and the Sagebrushers. The cubs learned the hold-up business when quite young, and their business was so profitable that the mother bear stayed with them the second summer, contrary to the usual custom. Apparently she hesitated to part from her prosperous and successful offspring. We wondered how long she would stay with them and whether Tom and Jerry would stand by their mother, as all good young bears do in the story-books but don't in the national parks. We were not long waiting for an answer, for the next summer cub Jerry showed up with her own cubs, and the rangers had hastily to change the name to Geraldine.

In the spring, the park superintendents come in for considerable criticism because of the unkempt appearance of the bears. Early one season a woman visitor asked to be taken to see a bear. A ranger helped her find one. The bear they located was as thin as a rail. His skin seemed to hang like a big loose sack on him. One side of him was entirely without fur. The vermin got into it during the winter and ate it off. One eye was closed. He was cross and mean. He certainly looked like the morning after a terrible night out. The visitor was quite disgusted.

"Well, when I want to see a bear next time, I shall go to Bronx Zoo," she said. "We have bears that look like bears. This one looks like he had three feet in the grave!"

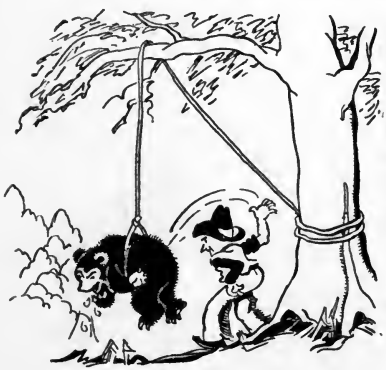
If she could have seen that same bear three months later, she would

never have recognized him. His fur was thick and soft, he was sleek and fat, his disposition was made over. He was a changed animal. That literally is what happens to the bears of the mountains in the summer. They eat enough to replace the exhausted tissues, they grow new fur, they are almost new bears by the time the tourist season closes. Folks who want to see the bears at their best should see them during the late summer or the early autumn.

The greatest collection of bears in any national park is in Yellowstone, where we have both the grizzly and the black bear. Both can be seen easily. In Glacier National Park there are grizzlies and blacks, but the grizzlies are not so easily seen. Yosemite National Park has a great many black bears, and they are very tame and easily seen and photographed. Sequoia National Park has some fine black bears and possibly a few grizzlies, one having been seen recently. Rainier National Park has black bears, as have Crater Lake, Lassen, and Rocky Mountain National parks. There are no bears at Grand Canyon, Bryce, or Zion parks.

One of the early bear stories that caught the fancy of folks was the story of Buffalo Jones and the bad grizzly. Buffalo Jones was one of our early scouts, a genuine man of the mountains, later appointed chief gamekeeper of Yellowstone. He was annoyed by a certain big grizzly that persisted in robbing camps. Buffalo Jones was authorized to discipline the grizzly, but was admonished not to injure the animal. It puzzled the old scout considerably. He scratched his head and tried to think how he could punish the bear and still not hurt him. Finally, he rigged up a noose, caught the grizzly on one of his prowling expeditions, drew the rope tight under the bear's fore paws and around his shoulders, and pulled the rope over the limb of a tree. With the grizzly suspended a few inches off the ground, in a helpless position, Buffalo Jones proceeded to spank the bear as one would spank a bad boy. The grizzly yelped and whined until he was let down to the ground. Then he made a bee-line for the woods and was never seen around camp again.

We have often thought of offering complaining Dudes the opportunity to spank the bears that they wanted shot, on condition that they capture the bears as did Buffalo Jones. Not long ago, when the man who dumped the "salad" at the Canyon complained that a bear had bitten him and insisted that the animal be punished, the rangers said, "Point out the guilty bear and we'll punish him."



Just then a bear came out of the woods.

"There he is," said the man. "That's the one that chewed me."

"No, it's this fellow over here," insisted his companion, as another bear approached on the opposite side.

They fell into a heated argument as to which was the bad bear.

"Well, we can't shoot all the bears," the rangers told them. "First you'll have to get the evidence to convict the bear."

A bear is presumed to be innocent until proved guilty. The rangers call the witnesses against the bear and question them about the alleged damage or injury, then seek to establish the identity of the bear. If the bear can positively be identified by the complaining witnesses, and there is general agreement on one bear, the bear is in a fair way to be convicted, but if, as almost always happens, the witnesses cannot agree on the identity of the bear, the rangers refuse to touch any bear or hold any one bear responsible for the trouble.

One time a big ranger of Scandinavian birth was sent to investigate a series of complaints against "a big brown bear" made by the boss of a road camp. It was alleged that the bear had stolen a ham; that he had torn open a case of maple syrup and had clawed holes in every can and drained them of their contents; that he had sneaked into the kitchen and eaten a large pan of applesauce which was to have been dessert at supper, and had also eaten up all the stewed dried peaches that had been cooked for breakfast; that he had taken one overshoe from each of three workmen while they were eating dinner, and had committed other felonies. There were fully ten other counts in the indictment.

The ranger called the crew together and told them that he had the instructions and power to run the bear out of the country if he could be identified. Just then a big brown bear ambled across the open in front of the assembled group. One man excitedly pointed him out, "there he is now," but several said that was not the bear. A few moments later, two other bears were seen walking around a nearby building. One of them was declared to be the bear. But this bear was eliminated from consideration right away by other men who claimed positively that he was a good bear who had never harmed anybody or anything. While the investigation went on a half-dozen bears came around, but each had as many defenders as he had accusers. No more than two men could agree on any one big brown bear. It was certainly a "hung jury." Finally the ranger became disgusted and declared, with Scandinavian accent, "Ya can all come to blazes, ya don't know which bear ya mean and none of 'em will be touched!"

Illustrating the intelligence of bears, Ranger Chapman tells the story of Betsy, the big black bear that used to come to the back door of the mess house when the cook called. The cook used to give Betsy a pail full of scraps with the admonition to "bring the pail back." Half an hour later, Betsy would come back out of the woods, the handle of the empty pail in her jaws. "I won't claim that she washed and dried the pail after each meal, but she never failed to bring it back," says Chapman.

Lest the impression be created by these remarks about our bears that they are the scavengers of the forests, let us consider the bear's diet. As a matter of fact, bears are omnivorous. They will eat almost anything. Garbage meets with their entire approval, once they have adjusted their stomachs to rough food by eating certain roots and herbs after coming from hibernation. But the bears lived in Yellowstone long before the advent of the hotels and camps and the "combination salad." They eat berries, green grass, bulbs, and certain wild flowers, such as dogtooth violets, snow lilies, and spring beauties. They are not too fastidious to eat wild onions. They like nuts. A mouse or a gopher or a trout is a relished tidbit, and ants and ant eggs make fine hors-d'oeuvre.

To see a bear amble along, one would think he is too slow to catch these little animals. Yet a bear can show the most amazing bursts of speed, when occasion demands. Trout fishing is an example. Mr. Bear lies on the bank of a trout stream, one paw idling in the water, to all intents and purposes sound asleep. Suddenly like lightning comes a flash of his paw, and a trout is flopping on the grassy bank, and a thoroughly alert bear is licking his chops in contemplation of fish for supper.

It has been but a few years since the bears of the national parks were harassed by visitors and regarded as menaces. When the National Park Service was formed, it was decided to exclude dogs from the parks. That was really the beginning of the era of friendship between mankind and the bears. The rangers were criticized then, and still are for that matter, for permitting the bears to roam at large through the parks. Now, of course, there would be a tremendous protest from the public if we did anything to interfere with the opportunity to see the bears. The Dudes and the Sagebrushers demand their bears. The present generation has been raised on bear stories, and real, live bears give them the thrill of their vacation. That is why they are the greatest single attraction in the national parks.

# Wild Animals You May Know

"As I watched the wild life of the park today, unconcerned and unmindful of the human beings about them, manifesting their confidence in the security of the situation, I thought how helpful it would be to humankind if we could have a like confidence in one another in all the relations of life."

President Harding, who made the foregoing observation following a visit to Yellowstone Park, is not the only visitor who has thrilled at this neighborliness of the animals of the national parks. Having no one to fear, other than their natural enemies of the forest, the other animals have followed the lead of the bears and made friends with mankind.

Though the bears have been the favorites of the Dudes and the Sagebrushers, they are by no means the most numerous of the wild animals of the parks. In all the parks together there are probably not more than a thousand bears, of which perhaps two hundred are grizzlies, the latter found only in Yellowstone, Mount McKinley, and Glacier parks. On the other hand, there are more than thirty thousand deer, scattered through all the parks. In Yellowstone, Grand Canyon, and Wind Cave together there are eight hundred antelopes. In Yellowstone, Glacier, Rocky Mountain, and Yosemite parks there are twenty thousand elk. In Glacier and Mount Rainier there are two thousand mountain goats. In Glacier, Mount McKinley, and Yellowstone parks there are seven to eight hundred moose. In Mount McKinley, Glacier, Yellowstone, Rocky Mountain, and Grand Canyon parks are perhaps seventy-five hundred mountain sheep. And so on. Of smaller animals and birds there are countless legions, well distributed through all the parks. The rangers are often asked how they know how many wild animals there are in the parks.

"We go out and count them," is the answer. Dudes usually take that to be a joke and laugh. The rangers do take a census of the animals each year, and the job is no joke. It is not as impossible as it sounds, for the reason that many of the wild animals congregate in the wintertime, when the snows are deep, in certain sheltered areas where the rangers provide them with food. Quite true, the count is not entirely complete, but is sufficiently so to enable the rangers to estimate the number of animals each winter, so that they know

whether or not the wild life is prospering and increasing. Caring for the wild life, providing it with food in the wintertime and protecting fur-bearing animals from poachers, is one of the major jobs of the rangers, authorized in the organic acts creating the national parks. Since civilization has driven the wild animals out of their natural winter feeding grounds at the lower levels outside the parks, the rangers must not only protect the animals but in many instances must provide them with food through the long winters.

Next to the bears, the wild animal of the greatest interest to visitors is the buffalo, found only in Yellowstone Park except for a small herd recently introduced at Wind Cave Park. Some curious mistaken impressions prevail regarding the buffalo. Nearly everybody thinks the buffalo is virtually extinct. Every visitor to Yellowstone wants to see a buffalo before the last of the Thundering Herd has passed to the Great Beyond.

"How many are there left?" they inquire solicitously.

"Oh, there were about a thousand last season and there are a couple of hundred calves born each year," the rangers explain. "They're increasing so fast we have a hard time finding feed for them. We are trying to give away some of them. Can you use a nice buffalo?"

This strikes most people as astounding. The effective publicity of the conservationists, which actually did save the buffalo from extinction a generation or two ago, has created an interest in and a sympathy for the buffalo that is nation-wide. The number of buffaloes today is pitifully small compared to the vast herds that blackened the plains in the days of the 'Forty-niners. But there are several fine herds in existence and they are increasing all too rapidly for the peace of mind of their custodians. A buffalo is a huge animal, with a voracious appetite. He weighs a ton and it takes nearly a ton of hay each year to feed him. Finding forage for a thousand buffaloes is a serious problem in a national park where the grazing lands are limited in area. Rather than deny the park buffaloes sufficient food, it has been the policy to give buffaloes to zoölogical gardens, city parks, or private owners who have the land on which to graze small herds.

Owners of some of the private herds, finding their buffaloes increasing too rapidly, conceived the idea of selling buffalo meat to give present-day Americans a chance to enjoy a taste of the food that was so important to the Indians and to the pioneer settlers of the West. It could not be sold! Sympathy for the poor buffalo had ruined the market for the meat. A railroad, traversing the great buffalo country, undertook to popularize the delicacy on its trains, and met with the same opposition. In Canada, where public officials found it necessary to curtail the natural increase of the most numerous buffalo herd in

the world, the government was obliged to reduce the buffalo meat to pemmican, by drying, and furnish it to hunters and trappers of the Hudson Bay region. The Canadians have been more successful in popularizing the buffalo steak on the Western trains serving their national parks.

This keen public sympathy for the buffalo dates back to the early 'nineties, when Americans first became thoroughly aroused over the fate of the bison. The American Bison Society, and other organizations, as well as several magazines, undertook to save the buffalo from extinction, which at that time seemed practically inevitable. The late Emerson Hough, representing *Forest and Stream,* sent by George Bird Grinnell, famous editor of that magazine, visited the Yellowstone in the dead of winter in 1894, just at the time that Scout Burgess caught Ed Howell, the notorious poacher, in the act of skinning some buffaloes he had killed in the park. Because of the inadequacy of the laws protecting the buffalo, the only punishment that the rangers inflicted was to eject Howell from the park, after which he returned to his poaching. This thoroughly aroused both Grinnell and Hough. In a series of articles and editorials, these two writers warned the nation of the passing of the buffalo. Congress was moved to legislate in 1894 for the punishment of poachers in Yellowstone. In 1901 a sum of $15,000 was set aside to establish a new herd of buffaloes in that park.

By that time, the herd in Yellowstone had been reduced by avaricious poachers to twenty-two animals roaming wild in the park, four held in captivity at the lake by E. C. Waters, operator of a boat line, and four more at Henry's Lake, captured and saved by R. W. Rock. The only other wild buffaloes were fifty animals at large in northern Colorado. These were subsequently wiped out by poachers. There were, however, two fair-sized herds in captivity outside the parks, one in Texas, known as the Goodnight Herd, and another in Montana, the Pablo-Allard Herd. The latter was subsequently sold to the Dominion of Canada and established in the Canadian national parks. There were a few small herds in city parks and some buffaloes running wild in Canada. The total number of buffaloes in the world was estimated at sixteen hundred.

The turning point for the Yellowstone buffalo was 1902, when Colonel C. J. ("Buffalo") Jones arrived in the park to serve as game warden. He negotiated the purchase of eighteen buffalo cows from the Pablo-Allard Herd and they were delivered at Mammoth by Howard Eaton, the famous Wyoming guide. "Buffalo" Jones went to Texas and brought back three bulls from the Goodnight Herd. Two calves were captured from the wild herd on the Lamar River. This gave the park three strains of blood for the little herd at Mammoth that grew into

Yellowstone's now famous Thundering Herd. The park buffaloes actually served in the filming of the motion picture of that name.

By 1911 the so-called tame herd, which was not tame at all except that it was provided with hay in winter and was kept under control by the gamekeeper, had increased to 147 animals. In that year, hemorrhagic septicemia attacked some of the younger animals and fifteen per cent died. It was then that the rangers began vaccinating the buffaloes. Dudes and Sagebrushers think this is another joke. Quite the contrary! Three times the disease has threatened the herd and each time it has been checked by vaccination. One of the really strenuous jobs for the ranger, when he has nothing to do until tomorrow, is rounding up the buffalo calves, herding them into a corral, and vaccinating them with a serum developed by the United States Bureau of Animal Industry.

The Yellowstone herds are thriving. The "tame" herd has long since outgrown the quarters at Mammoth and is located on the Lamar River, except for a few specimens kept in the corral at Mammoth where visitors can see them easily. This herd numbers more than nine hundred animals and would now have exceeded a thousand in strength had not a considerable number of buffaloes been given away. The wild herd, numbering around one hundred animals, roams the eastern section of the park. It has never been under any kind of control. To feed the Yellowstone buffaloes through the winter, it is necessary to raise a thousand tons of hay each year on ranches within the park. If the rangers did not feed the buffaloes they would range out of the park when the snows are heavy. Once in a while a buffalo will do that. One day the rangers received a frantic long-distance phone call from one of the town officials of Gardiner, Montana.

"Say, come down and get your buffaloes, will you?" he urged anxiously. "Two are loose in our main street and business is at a standstill. It's serious!"

The situation in Gardiner, as the rangers found it, was not only serious but funny. Two big buffalo bulls were parading up and down the main street. Not another creature was stirring. Every door was closed, every store was empty, every window was full of faces peering apprehensively at the new bosses of the town. There was a sigh of relief when the rangers drove the buffaloes back to the park. Then Gardiner came to life again.

In 1923, Congress authorized the park service to give away surplus buffaloes to zoos, parks, and private individuals who

had the proper facilities for handling them. When this announcement was made through the press, the rangers received a flood of inquiries from people interested in buffaloes. Some of them were quite humorous, indicating the hazy notions that people have about the size and habits of the buffalo.

One little girl wrote from New York asking for a "cute, gentle little buffalo to play with." Two boys wanted a calf apiece as pets. One farmer from Nebraska wrote for some buffaloes to entertain his guests on Sundays. "It's kind of quiet around here," he said. "We're great hands to entertain and we'd like a couple of buffaloes." A man from Georgia sent a check for shipment of three buffaloes, then wired, just before they were caught, to withhold shipment. "My wife has convinced me that with four children and three buffaloes, our two-acre lot would be too small," he said. "She is afraid the buffaloes might hurt the children." Another family wanted a buffalo because their children had tired of playing with their cats, dogs, and rabbits, and perhaps a buffalo would interest them.

After the buffaloes had been shipped, some unique complaints came in from the new owners of the animals. Some said that the buffaloes were too large; they wanted small ones. The rangers ship only the young ones, as a matter of fact, because the crating and expressing of a full-grown one-ton buffalo is some job in itself. The cost of catching and crating a buffalo is about seventy dollars. The animals are shipped by express so that they will arrive promptly and in good condition. Preference is given to game preserves, forest reserves, zoos, and parks, but many buffaloes have been sent to private estates and asylums. One of the largest pair of buffaloes was sent to the estate of Florenz Ziegfeld of the "Follies," while a herd of sixteen was shipped to the Famous Players-Lasky Company for use in the movies, after which this herd was to be released on Catalina Island, off the coast of California. Buffaloes have been shipped to practically every state in the union during the past five years. Each autumn the rangers join the buffalo-keepers in a great roundup, at which time the animals are counted, the herd is inspected, and the animals for shipment are singled out. These roundups are about the last opportunities to see in this country the fearful and impressive buffalo stampedes.

Because of the prevalent idea that buffaloes would make good pets, it was necessary to get out a public warning to applicants for buffaloes a few seasons ago. Some of the

letters from new owners were made public, and this caught the fancy of the newspapers of the country. It was the occasion of a headline writers' holiday, and some of them stretched themselves to compose such lines as these: "Buffaloes not affectionate—won't wag tails or make pets." "Buffaloes not good pets, puppies better." "Little girls mustn't play with bad buffaloes." "Can't tickle buffalo's hoof and get away with it." "Buffalo not family pet, Hoosier learns." "Pet buffalo resents petting." "Buffalo just ain't nice pet." "Uncle Sam informs little girl 'affectionate' buffalo just isn't." And there were hundreds of others!

One other newspaper headline about a buffalo cost us a very distinguished visitor. A wealthy American woman who had married into the nobility of Europe and had become a duchess was traveling in the West with a private car in which was built a specially made apartment with bath for her two-pound Pekinese dog. Her secretary telegraphed, asking that the rangers set aside the rule forbidding dogs and cats in the park so that the Duchess could visit Yellowstone with her Pekinese. If she could not bring the dog, she would not come. She was finally advised that she could bring in the two-pound Pekinese if she would keep it on a chain, a courtesy extended to all through travelers with dogs. Someone laughingly remarked to the chief ranger, "You'd better make provision to protect our buffaloes."

The rangers got a laugh out of the idea and told it to a newspaper man. The next day it was in newspapers all over the country. The Duchess saw it and was so angered that she refused to visit the park either with or without her Pekinese. So the buffaloes are still safe.

In the fall of 1924, a buffalo cow was sent to Lincoln Park, Chicago. In May of the next year, there came to the park a card in a small envelope, a typical "stork" announcement, with a stork carrying a baby in its bill at the top of the card. Below was the following:

"Arrived May 8, 1925
Baby Buffalo
Weight 120 pounds
Mr. and Mrs. Buffalo"

One of the regrets of the rangers is that they cannot keep the Yellowstone buffalo herd near a road where the Dudes and Sagebrushers can see hundreds of animals in action. The herd is too powerful and unwieldy to be turned loose near the tourist camps or the hotels. At present the animals are secluded in the Lamar Valley, behind a strong drift fence running from Mount Norris on one side of the valley across to Mirror Plateau on the other. This fence is seven feet high, built of logs from nine to eighteen inches in diameter. The location is fine for the buffaloes but is not near enough to any road for visitors to see the

big herd, except by taking a long horseback trip. There is a fine location for part of the herd near the road from Canyon to Tower Falls, where motorists could look down on the buffaloes from a hill over Antelope Creek Basin, and sometime it is hoped that this can be fenced so as to control the buffaloes and protect the public.

The park service also hopes for funds with which to establish buffalo herds in some of the other parks, particularly Glacier National Park, where there is ample room and good conditions. However, the cost of establishing such a herd, including transportation and fencing, is about $15,000, making it a more or less expensive undertaking that must await the contribution of funds either by Congress or by private individuals. At the present time there are a few buffaloes in two of the other national parks, Wind Cave and Sullys Hill. There is no doubt about the great public interest in the comeback of the American bison which used to roam the plains in millions, the wonderful animal which President Roosevelt called "the most distinctive game animal on this continent and certainly the animal which played the greatest part in the lives of the Indians and most deeply impressed the imagination of the old hunters and the early settlers."

Next to the bear and the buffalo, it is the beavers that interest the visitors in the parks. These ingenious and resourceful little animals are like the bears in that they have many almost human attributes, though a very different set of them from the traits that are bruin's. The beavers are like humans in that they are always trying to improve upon Nature. They are forever damming a stream or changing its course, or cutting down a tree, or building a new house. A beaver is never satisfied to let well enough alone. There are plenty of natural shelters in the woods, but these are not good enough for Mr. Beaver. Like his two-legged friend, Mr. Man, the beaver must gather all his family about him, even the distant relatives, build a tenement house, and crowd into it. The house is always overflowing, it always needs additions, new gables, or new roofs, or new rooms. Life in a beaver colony is just about as unsettled as it is in a great city. Perhaps that is why people are fascinated by beavers and their work.

Fortunately the beavers are prospering in many of the national parks. The beaver, like the buffalo, was threatened with extinction years ago, though his numbers never decreased in proportion to those

of the buffalo. However, game laws protect the beavers now, even outside the parks. Western beavers imported to some of the eastern states have so increased in numbers that they are a problem to the parks and forests. The most numerous beaver colonies in the national parks are in Rocky Mountain, Yellowstone, Glacier, Grand Canyon, and Rainier National parks, where water is plentiful and where streams run all year long. No beaver can live happily without the daily opportunity to build or patch up the dam. As 'most everyone knows, the beavers live in a house built of logs and sticks surrounded by fairly still water, but they also burrow into stream banks in places, instead of constructing houses. If a lake doesn't exist, the beavers make one by damming a stream. The top of their house projects well above the water, but the entrance is always under water, and the beavers have to swim home and then go upstairs to dry quarters.

"Busy as a beaver." This figure of speech has amused many a Dude, after watching the ways of beavers in the parks. Beavers do their work at night. They sleep all day, which is unfortunate, for it makes it hard for visitors to get a good glimpse of them. The beaver does most of his work with his long, sharp teeth. With them he cuts down trees much as a woodsman would do with an axe. Aspens and other species of cottonwoods are the beaver's favorite trees. The bark, especially the inner layer of bark, is food, while the logs go to make his house bigger or his dam higher.

A colony of from thirty to fifty beavers can accomplish an amazing amount of work. In Beaver Lake Valley, near Obsidian Cliff in Yellowstone Park, they have erected a dam which is a third of a mile long. After they had cut all the trees in the lake they had formed, an operation which took several years, they cut the dam to let the water out, probably in order that the trees might grow again. The park service wanted to keep the lake there for exhibition purposes, so engineers repaired the dam the beavers had cut. The beavers cut it again. The engineers repaired it again. The beavers cut it once more. The engineers finally gave up the contest. The beavers are the only form of life in the national parks that can defy the rangers and get away with it. Incidentally, outside interests are not allowed to build dams in the park for irrigation purposes, but the beavers do it right along and kill and cut thousands of trees. There is nothing to do about it. The beavers stay right on the job and rebuild their dam as often as the

rangers blow it out, or they cut it as often as men repair it, if that happens to be their wish at the time.

Beaver colonies usually make their homes in the vicinity of aspen groves. They will cut down cottonwoods two feet in diameter, but prefer small trees. Once cut down, the trunks and branches of the smaller trees are cut in sections, from one to three feet long. These are carried over to the beaver house and are "salted down" for the winter. When the beaver family wants breakfast in a hurry of a winter morning, one or more beavers select a log from the pile and take it into the house, and the whole family gathers around for a snack. The beaver holds the stick in his fore paws and gnaws fast and furiously.

Beavers use various types of construction. They make dams, lodges, burrows, and canals, the latter often enterprises that call for considerable engineering skill. These canals are used to float logs to the house, thus solving the transportation problem for the beavers. The large flat tail of the beaver is popularly supposed to be useful for slapping mud on the house to plaster it, but this is not the case. The tail is the rudder by which Mr. Beaver steers his log and himself to his house, when swimming with a load. He uses it as a rudder and a propeller, too; he also slaps it on the water to warn other beavers of what he thinks is danger. The beaver is as skilful with his fore paws as is the squirrel. He uses them in much the same way, to hold his food, to build his house, and to dig. His teeth, which seem to grow as he uses them—occasionally so long that he cannot close his mouth, and so dies—are useful mainly for gnawing trees in felling them and in cutting them for food and construction purposes.

"How can I see a beaver?"

This question is hard to answer. It takes much patience. The beaver dams are easy to locate in streams or lakes near aspen groves. The little animals are cautious about showing themselves during the daytime, particularly if strangers are about. The best way to see them is to take a location not too near a beaver headquarters and remain perfectly quiet until their activities begin. Generally, some beaver will not be able to restrain his urge to add a new stick to the dam or to put a gable on the house. Or perhaps the engineer beaver will be out inspecting things, planning a night's work for the whole construction gang, which incidentally includes the women and children as well as the men of the colony.

This is good advice if you want to see any of the wild animals or the wild fowls of the parks. The majority of visitors cannot control themselves when they see a deer or a beaver or an elk or other wild life. They rush out in the middle of the colony or herd or flock, as the case may be, and begin snapshooting right and left. The result is that they

scare the wild animals and birds away and not only spoil the scene for the next arrivals but actually lose out on their own snapshots. The way to get good pictures of wild life is to remain perfectly still until the animal, unfrightened by sudden movement or by the noise of a machine, comes close enough for a good shot. It requires great patience and considerable skill to stalk game for pictures. It is one of the most fascinating sports in the world.

Some of the rangers have made remarkable pictures of wild life by following this patient course. Ranger Scotty Bowman, at Tower Falls in Yellowstone Park, has established such friendly relations with a colony of beavers that they will let him pet them, though at first they would growl and blow at him in hostile manner. Wild animals live by avoiding enemies. Their safety depends upon their ability to flee. Intuitively they have learned to take no chances. If they are not sure whether or not a newcomer is dangerous, they assume that he is an enemy and take to the woods. The person who wishes to establish himself on good terms with any of the wild animals or birds of the national parks must first let them get well acquainted with him. Mr. Beaver is just like all the rest of his neighbors. He wants to watch the newcomer, and decide about him personally, before he effects any entente. It takes patience, oodles and oodles of it.

Perhaps the greatest beaver city in any of the national parks is one discovered by Ranger Macy in Mount Rainier National Park along the Nisqually River, which is formed by the glacier of the same name. In the icy waters of this stream, the beavers have built a city covering twenty acres—houses, dams, ponds, canals, a maze of engineering. It must have taken several generations of beavers to have achieved that job. This is another instance in which the beavers resemble their human friends. One generation carries on where the other left off, one beaver engineer and his gang complete what a predecessor started. The whole colony stays with the work until the project is completed. One often wonders what unseen and unknown spirit or force guides these little animals, enabling them to stay with their complicated engineering feats without maps or plans or designs until twenty acres is covered with construction. There is no other animal like them, only humans excepted.

Next, in point of thrill they give the Dude, comes the moose. These big animals are really rare beasts even in the national parks where they are protected. The average visitor is excited by a moose track, let alone the moose himself. The moose is a lonely animal. He prefers life in the solitude of the back country. He haunts the marshes at the base of high lakes, or those that play hide-and-seek with the rapids of the mountain streams. He takes his stand in the willows and brush, and when the visitor comes upon him unawares the moose takes one long,

scrutinizing look, then turns and bounds into the woods. The moose is a great lover of solitude. He who seeks to stalk a moose and take his picture must leave the beaten paths and explore the wilds of Yellowstone, Glacier, or Mount McKinley National parks. Occasionally the visitor catches sight of a moose along the road, but it is only a fleeting glimpse, for after that one lingering look, peculiar to the moose, he is off again for solitude.

In Yellowstone in recent years the moose have spread over all parts of the park. Occasionally a mother moose and one or two calves will be seen in the willows along the roads. Bridger Lake, in a region which is proposed as an addition to Yellowstone Park, is a favorite feeding ground of the moose. The moose come to this shallow lake and wade out in the water to browse on lily pads and other aquatic vegetation. They hold their heads under water for unbelievably long periods, while nipping off the grasses at the bottom of the lake. Unfortunately, the state of Wyoming permits hunters to kill moose in this region, one of the best places for Dudes from the ranches to see moose in their natural habitat. It is estimated that there are six hundred moose in Yellowstone Park and at least one hundred in Glacier Park, mainly on the western side, and visitors can see them most easily in the vicinity of Lake McDonald. They are seen also in Mount McKinley Park.

Another elusive animal is the mountain sheep found in Glacier, Yellowstone, and Rocky Mountain parks, and in Mount McKinley where the beautiful Dall sheep lives. Mountain sheep have also been seen in Grand Canyon Park, and years ago they were native in Sequoia and Yosemite parks, from which areas they were unfortunately exterminated before the creation of the parks. Mountain sheep stay at or above the timber line in the summer time, but are seen in the lower valleys during the winter. In Glacier National Park trail parties see these wary animals almost daily on the trips to Iceberg Lake, Swiftcurrent Pass, Going-to-the-Sun chalets, and other high places. During the wintertime, the rangers feed the sheep around Many Glaciers Hotel to keep them from migrating to the lower levels where they would be killed by the Indians.

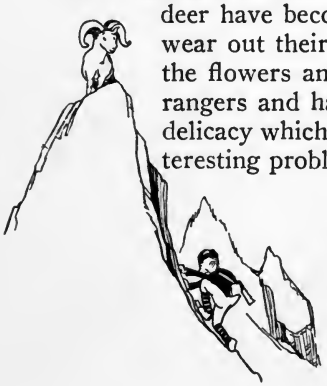
In Rocky Mountain Park sheep are found near the summit of the Rockies along Specimen and Flattop trails. Occasionally they are seen along the Fall River Road, where it crosses the mountains at an elevation of more than eleven thousand feet. In the winter these sheep come

down into the Big Thompson and Fall River valleys. In Yellowstone the sheep are hard to see during the summer time, except near the summit of Mount Washburn. Unfortunately, unthinking Sagebrushers, seeing these animals early in the morning, chase after them trying to take close-up snapshots, and so drive them out of the region. This is regrettable for it denies the rest of the visitors to Mount Washburn during that day the opportunity to see the bighorn mountain sheep, really a rare sight.

An animal similar in habits to the bighorn sheep is the Rocky Mountain goat. He is seen only by those who climb the high peaks, for the mountain goat loves to perch on crags far above the rest of the animals, with the world spread out at his feet. They are seen most frequently on the high peaks of Glacier Park and on the slopes of Mount Rainier. Being easily frightened, they lead precarious lives. It is indeed remarkable that they can exist at all on the rare grasses and flowers found well above the timberline and just below the topmost snow-capped mountain peaks.

The most familiar animal in the national parks is the deer. Protection from hunters has not only increased their numbers but has made them quite tame and friendly. These gentle, graceful creatures are found in all of the parks, to the great delight of visitors, from whose hands the deer have learned to eat raisins, bread, or what have you. The rangers estimate that there are more than thirty thousand deer in the parks, and many more in areas surrounding the parks. The park deer are of three varieties: the mule deer, so named because of his long, alert ears, the most prevalent species; the white-tailed deer, found mainly in Glacier and Yellowstone parks; and the black-tailed deer, seen on the western slopes of Mount Rainier.

Deer are easily tamed. They are quite gentle and are the pets of many rangers and employes in the parks. They come to beg food, and in some of the parks have learned to answer the call of rangers to "come and get it," the "it" being oats from the stables. In fact, the deer have become so much at home among humans that they wear out their welcome. In Yosemite Valley they have eaten the flowers and plants about the houses of the employes and rangers and have virtually wiped out the evening primrose, a delicacy which delights the deer's palate. This has raised an interesting problem for the rangers. Conservationists of flowers claim the deer should be ousted to preserve the wild flora. On the other hand, conservationists of animals claim that the flowers were there to feed the wild fauna. So there is the issue. Flora or fauna?

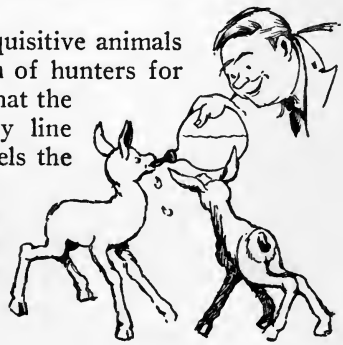


The deer do about as they please, regardless of the rangers. One of the hardest things in the world is to make a deer do something he doesn't want to do. The rangers would much rather capture a bear and get him ready for shipment than box a deer for a trip to a city zoo. The deer does not bite, but he is much quicker and is nervous and strong, and often strikes viciously with his feet when afraid he is going to be hurt or captured. In some parks deer are now so numerous that they can well be spared. In fact, it is claimed by some scientists that in certain of the national forest areas near national parks the deer are too numerous, notably in the Kaibab Forest on the north rim of the Grand Canyon. It is asserted that the vast herds of deer there have wiped out the aspens and that they are now ruining other trees, even young pines and firs, by eating leaves and bark, and that they are starving in the wintertime. The park rangers disagree with this point of view and believe that there is still sufficient food for the Kaibab deer.

In 1924 a cattleman of Arizona proposed a relief for this situation by offering to gather together a band of cowboys and drive eight thousand deer from the Kaibab region down into the Grand Canyon, across canyons, streams, and the Colorado River, and up the steep slope to the south rim. At one point it was necessary to drive the deer in single file along a narrow ledge trail for eight miles. It is hard to imagine anything more difficult than the job these cowboys attempted. They were to receive two dollars and fifty cents a head for all deer delivered to the south rim. The rangers advised them that the drive could not succeed, but assisted in every way possible. The cowboys assembled, likewise motion-picture men and newspaper correspondents, and the drive was on. Not one deer ever reached the south rim. They simply refused to be driven anywhere.

The rangers are attempting a more simple, albeit slower, plan of populating the south-rim area with deer. Several small fawns were brought by rangers on pack horses to the south rim and are being raised on bottles. They are doing well and, if they prosper in their new home, which will be the only one they will have known, visitors to the south rim will see plenty of deer.

The rangers are fond of these friendly, inquisitive animals and find it hard to understand the enthusiasm of hunters for killing deer. The rangers of Yosemite claim that the deer know exactly where the park boundary line runs. Along the Wawona Road, which parallels the boundary for several miles, the rangers point out plenty of deer on the protected park side of the road and call attention to the fact that there are none on the unprotected side, a few



rods away, where the deer can be killed in hunting season. These rangers claim also that the deer, when grazing outside the park, on hearing the report of a rifle will invariably run for safety behind the park line, where hunters cannot follow. Whether this is intelligence on the part of the deer, or mere coincidence, is hard to say. Yet it does seem that a deer can always pick a visitor who is friendly and possibly the possessor of food, with whom to fraternize.

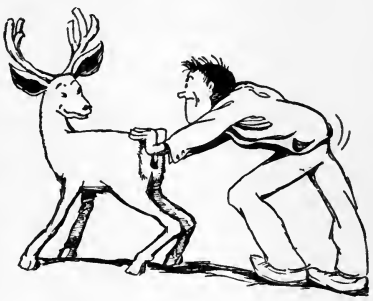
A fine animal that was saved from extinction by the scouts, soldiers, and rangers of Yellowstone Park is the Rocky Mountain elk. The elk has long been a favorite victim of hunters because of his great antlers. Outside the parks and mountain country adjoining Yellowstone the elk were virtually wiped out a few years ago. The Yellowstone herds, enjoying protection since the creation of the park in 1872, have increased until it is estimated that there are forty thousand elk in the park and in the seven national forests surrounding the Yellowstone. The elk range over much of the park and are easily seen at a distance by the Dudes and the Sagebrushers.

The elk is a magnificent animal, noble, stately, as large as a horse. The bull elk, adorned with large, well-proportioned horns, is the handsomest animal in the parks. At least, the rangers think so. When running, he makes a magnificent picture. In September and October, during the mating season, his shrill bugle or challenge, ringing through the crisp air on a moonlight night, is one of the most thrilling sounds of the mountains. The elk, though easily seen at a distance, is wary of humans and the visitor who wants to take his picture must stalk him slowly and cautiously.

Being a grazing animal, the elk will not rustle for food at the higher levels when the snows come. He moves to the lower altitudes, seeking grass. Late in the fall, when the storms become bad, great herds of elk may be seen leaving the park and the adjoining game preserves, moving out into the area where they are unprotected. This is the time when hunting is permitted in the neighboring states. Many elk are killed by hunters, sometimes under revolting circumstances. Often the great animals are mowed down with repeating rifles by hunters behind rocks. There is no chance to scatter. Knowing only the complete protection afforded in their summer haunts, the elk are like lambs slaughtered in a farmyard. The rangers fail to see the sportsmanship of shooting the elk down in herds. Each hunter is allowed but one elk, and it happens at times that after wanton killing there are dozens of animals left on the snow after each killer has selected his victim.

Terrible as are these slaughters, there is one other practice of the hunters that rouses the rangers to even greater anger. That is the practice of extracting the two large teeth from elk which are foundered in

the snow, while the animals are too weak to resist. These large teeth are prized by jewelers for good-luck pieces. They are also needed by the elk to masticate his food, and without them he is unable to forage for himself and starves to death. Sometimes the great animals are illegally shot by poachers for their teeth only. The body of the elk is left in the snow, where the hunter ended the animal's life. The elk that remain in the high mountains have a difficult enough battle for life during the winter months with the elements. Often the rangers are called upon to rescue them from snowdrifts. So it stirs to genuine anger those who are fond of wild life when hunters prey cruelly on these fine animals when they are least able to flee for their lives.



Of recent years the Benevolent and Protective Order of Elks has co-operated with the rangers to fight the cruel practice of stealing teeth from the elk. Use of elk teeth has been outlawed by the order. Likewise, public-spirited citizens are assisting financially in the purchase of great ranches both to the north and to the south of the park where the elk can graze under protection during the long winter months. Of course the elk, being a huge animal, requires much food and there is to be considered the possibility that the animals may increase too greatly. There is no objection on the part of rangers to sportsmanlike hunting, if the elk are given a chance to escape. Their protest is against ruthless slaughtering of animals accustomed to protection.

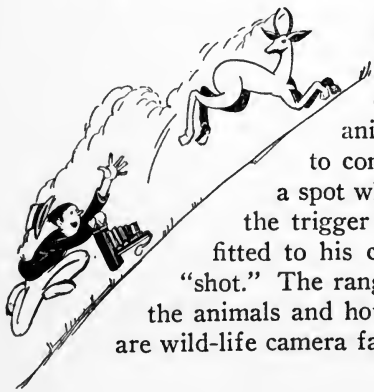
Elk are found in smaller numbers in Glacier and Rocky Mountain parks. In the latter park they are the offspring of animals shipped from Yellowstone after the native herds had been wiped out by hunters. Elk once ranged the slopes of Mount Rainier, but this species, larger animals than the Rocky Mountain elk, are now confined to the Olympic Peninsula. In Yosemite Valley is a band of San Joaquin Valley elk, a smaller and different species from those of the Rockies. They were brought to Yosemite to save the species from extinction and are prospering beneath the shadows of Half Dome and the other great Yosemite peaks, against which the elk form a picturesque foreground.

Antelopes may be seen in Yellowstone and Grand Canyon parks. These beautiful little animals, fleet of foot and alert of sense, once ranged the plains east of the Rockies in tens of thousands. Now the herds in the two parks number not more than eight hundred. They are practically extinct in most states, though in Wyoming, Oregon, and Nevada they have made a notable increase in numbers under stringent

protection from hunters. For a time it seemed certain that this interesting little animal was doomed to extinction, but of recent years lovers of wild life have felt more easy about the antelope's future. Private donations have assisted greatly in building the park herds by the acquisition of lands at lower levels where the antelope may feed during the winter.

The antelope is easy prey to predatory animals, especially while young. It is an interesting fact that the little antelope is born without scent and his fur so blends into the landscape that it is almost impossible to see him, even at fairly close range. It is said that if the tiny antelope remains still, a coyote can neither see nor smell him at twenty-five feet distance. The antelopes of the Grand Canyon herd were raised by the rangers from tiny kids, captured in northern Nevada. They were reared on bottles near Reno, then were sent by rail to the park. Here in crates they were strapped on pack mules and taken down the Hermit Trail to the Tonto Plateau. There they have grown to full maturity and are rearing their young naturally.

Because of his grace, color, and beauty, the antelope is a great favorite with amateur photographers, who in their eagerness to get a good snapshot approach the animals without care. Often they try to catch up with the antelope, if they miss their first shot. The photographer who can catch an antelope on the run has not yet been born. The visitor eager to take good animal pictures should come equipped with long-range lenses, or else must learn the patient art of stalking wild life. Any sudden movement frightens wild animals and ruins the picture not only for the photographer but also for others to come. Those who are successful in taking wild-animal pictures have developed a fine technique. The Crown Prince of Sweden, an experienced photographer of wild life, crawled a quarter of a mile on his hands and knees and finally on his stomach to take pictures of mountain sheep on Mount Washburn in Yellowstone.



The photographer must have infinite patience. He must keep his friends out of sight, as well as himself. He must move ever so slowly and cautiously toward the animals, or else sit patiently and wait for them to come to him. Or he can set up his camera in a spot which animals are known to frequent and pull the trigger by means of a thread. The telescopic lens fitted to his camera will help bridge the distance to his "shot." The rangers will give him pointers on where to find the animals and how to get the pictures. Most of the rangers are wild-life camera fans and have taken good pictures. They have

found, as the visitors will also, that hunting with a camera is vastly more sporting and exciting than is hunting with a gun, particularly with the new hand motion-picture cameras which show the movements of these inhabitants of the forest.

In addition to the animals already mentioned, there are literally scores of smaller animals and birds, and also that interesting and somewhat unwelcome group, the predatory animals. The latter include mountain lions, bobcats, wolves, and coyotes—the born killers of the forest, some of which kill for the mere love of killing, the same motive that seems to animate mankind except that the predatory animals do need to kill for food. These animals are seldom seen, with the exception of the "dogs," as the rangers call the coyotes. All are hunted by the rangers, not with the purpose of extinction, for each belongs in the wild-life picture of the parks, but for the purpose of curtailing their numbers so that they will not exterminate other species, such as the deer or the antelope. In fact, in recent years few mountain lions have been killed in any of the parks. The mountain lion raises cubs but once every two years, and therefore does not increase rapidly. Unless a particularly ruthless killer becomes a menace, the lion is allowed to live. The same is true of the bobcats, lynxes, and wolves. The coyote is a prolific breeder on the other hand, raising a litter of puppies each year. Hence the coyote is hunted down quite ruthlessly. The purpose of the rangers is to preserve the natural status quo between animals as nearly as possible under the peculiar circumstances by which so many species have been crowded by civilization into comparatively small areas.

The Dude or the Sagebrusher with a hankering for a hobby that is different will find unique opportunities in the study of the animals and birds of the parks. Living with the denizens of the woods as neighbors, he will find them cheerful, resourceful, and enthusiastic. They make the most of their respective situations. He will marvel at their energy, their persistence. He will wonder at the ingenuity of the steam-heated birds' nests of the Yellowstone geyser basins. He will tremble at the isolation of the osprey's nest atop tall pinnacles in the Canyon. He will laugh at the story of the male osprey whose mate makes him sit on the nest at night so that she can know where he is. The audacity of the grouse family that held up a presidential party while the chicks crossed the road, the lightning quickness of the osprey as it dives into the rapids, returning over the tree tops with a struggling fish in its talons, the genius of the otters who live in winter in warm-water pools just a few feet from icy trout streams, the muskrats that enjoy salad in the wintertime because the warm streams they inhabit keep the grass and plants growing during freezing weather—all these and many more true tales of wild life serve to make up the saga of the great game preserves, the

national parks. It is all very moving and stimulating, and many is the visitor who feels the urge, along with the rangers, to take his pen in hand and put it all on paper, perhaps in verse as did a ranger in Sequoia Park after watching the invasion of 'possums into that region:

'Possums from Missouri, that's what the people say,
Moving to Sequoia and now well upon their way.
'Possums coming singly, others come in pairs,
Mothers carrying baby ones in pouches lined with hairs,
Big 'possums, little 'possums, lean ones and fat,
All moving to Sequoia—now what do you think of that?

There is romance in the lives and the ways of every one of these animals of the parks. That is their great appeal. Wild life is full of problems, just as is human life. Everywhere there is a plot. Everywhere there is a struggle. Everywhere there is a story. Never before in the history of mankind have three million people a year been able to enjoy it so intimately.

# Goin' Fishin'

"Oh, Ranger, where can I catch some fish?"

Sometimes that question is a hard one to answer. It isn't always the fault of the fish, either. There are anglers and anglers, in the national parks. Some seem to be able to step out and catch trout in the morning, in the evening, any time. Others have no luck, even when they are wearing a rabbit's paw, a horseshoe, a turkey wishbone, and a Columbian half-dollar, all at the same time. The wary trout is no respecter of good-luck omens. Catching him calls for an indefinable something that some call fisherman's luck, that others call skill—whatever it is, you need it when you are "goin' fishin'."

"Where can I catch some fish?"

The Old-Timer always plays safe by answering, "Well, Sir, I'll tell you where I saw some nice ones, and I wouldn't be surprised if you could catch a few of them."

Knowing where the fish are is half the game, when you are goin' fishin'. There isn't much use fishing in waters where there are no fish to be tempted by your lure. Not long ago there appeared an article by Herbert Hoover, honorary president of the Izaak Walton League, in which the writer contended that it was the inalienable right of every American to catch a nice string of fish at least once each year. He touched upon the ennobling and uplifting effect this would have upon the American's soul, and indicated that as a panacea for unrest, discontent, and so on, there was nothing in the world like goin' fishin'. He advocated the expenditure of sufficient funds to see that all good fish waters of the country be adequately stocked with the right kind of fish. Then at least the fish would be there to be caught, and the man who could not catch his share would have nobody but himself to blame.

The rangers have noted the spiritual aspects of catching fish and have subscribed for a long time to the proposition that everybody ought to catch fish. They have made considerable headway already in the matter of stocking the barren waters of the national parks. To do this they have on numerous occasions carried cans of tiny trout to remote streams and lakes high in the mountains, sometimes on horseback, often on foot, strapping the cans on their backs. That is work, as anyone who has carried a five-gallon can of water for five miles over a rocky trail can

testify. These baby trout are known as fry. When the ranger with a can of fry arrives at a lake to be stocked, he gradually fills the can with water from the lake, to accustom the little fish to the temperature of the water so that the dive into their new home will not be too great a shock to them.

It takes several years after a barren water is stocked with fry before it becomes a good place for fishing. Hence the planting of fish must precede the building of trails or roads which make the lake or stream accessible to the angler. There are planted each year in the national parks about six million baby trout. This is but a small beginning compared to the billion nearly grown trout which Mr. Hoover and the Izaak Walton League would like to have planted each year, but it is a start. Of course, the various states plant many other millions of fish. The propagation of fish has passed beyond the experimental stage. It has been demonstrated in the national parks that it is possible to keep more trout in the streams and lakes than the anglers can pull out with the aid of flies, spinners, and other lures, not overlooking the humble angleworm, who is frowned upon in the best circles but who manages to retain his standing with small boys everywhere and with certain other older fisher folk from "down East."

In the national parks the rangers, in the course of their plantings, have learned some interesting and important facts about the rearing of fish. One of the most fundamental lessons is that it is unwise to mix breeds of trout in the same lake or stream unless their habits of life be quite similar. All fish, and trout in particular, are cannibalistic. The trout must be protected not only from destruction by greedy humans or by stream pollution, but also from other members of the finny tribe. Consequently, it is advisable in the parks to reserve a certain water for a particular variety of fish and raise another kind somewhere else. That system makes the sport more interesting for anglers, too.

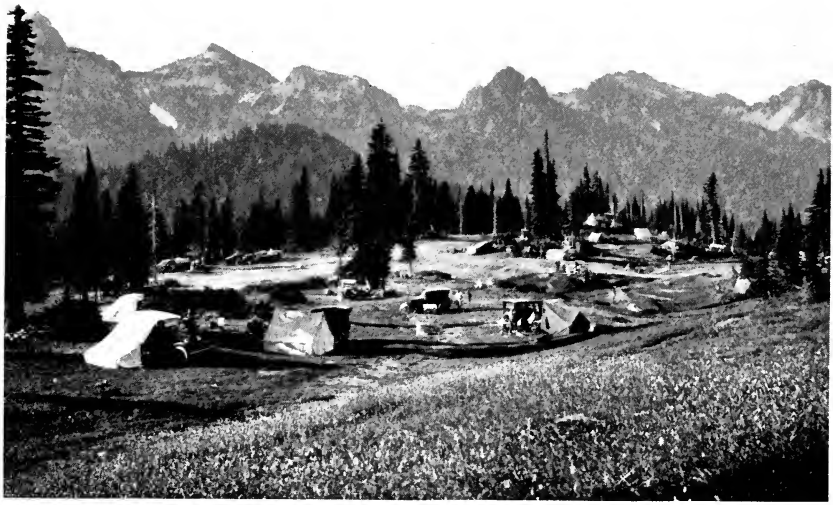
Yellowstone Park gives an illustration of this. The native trout of the Yellowstone is the cutthroat, or the redthroat, as Dr. Henry van Dyke says the species should be called. He is a fine, gamy fish, growing to good size, a popular trout with anglers. In the early days, before the authorities had studied trout propagation, other trouts were imported and planted in the same waters with the cutthroat. The rainbow was brought from California, the brook trout from the Atlantic Coast streams, and the Loch Leven from more distant points. The cutthroats and the rainbows spawn in the spring. The trout brought from the East

*Photo, courtesy Union Pacific System*

***The Grand Canyon of the Yellowstone and Yellowstone Falls***

*Old stagecoach in Yellowstone*

*A buffalo roundup in Yellowstone*



*Sagebrushers camping at Paradise Valley, Mount Rainier Park*

*Young deer in a national park*

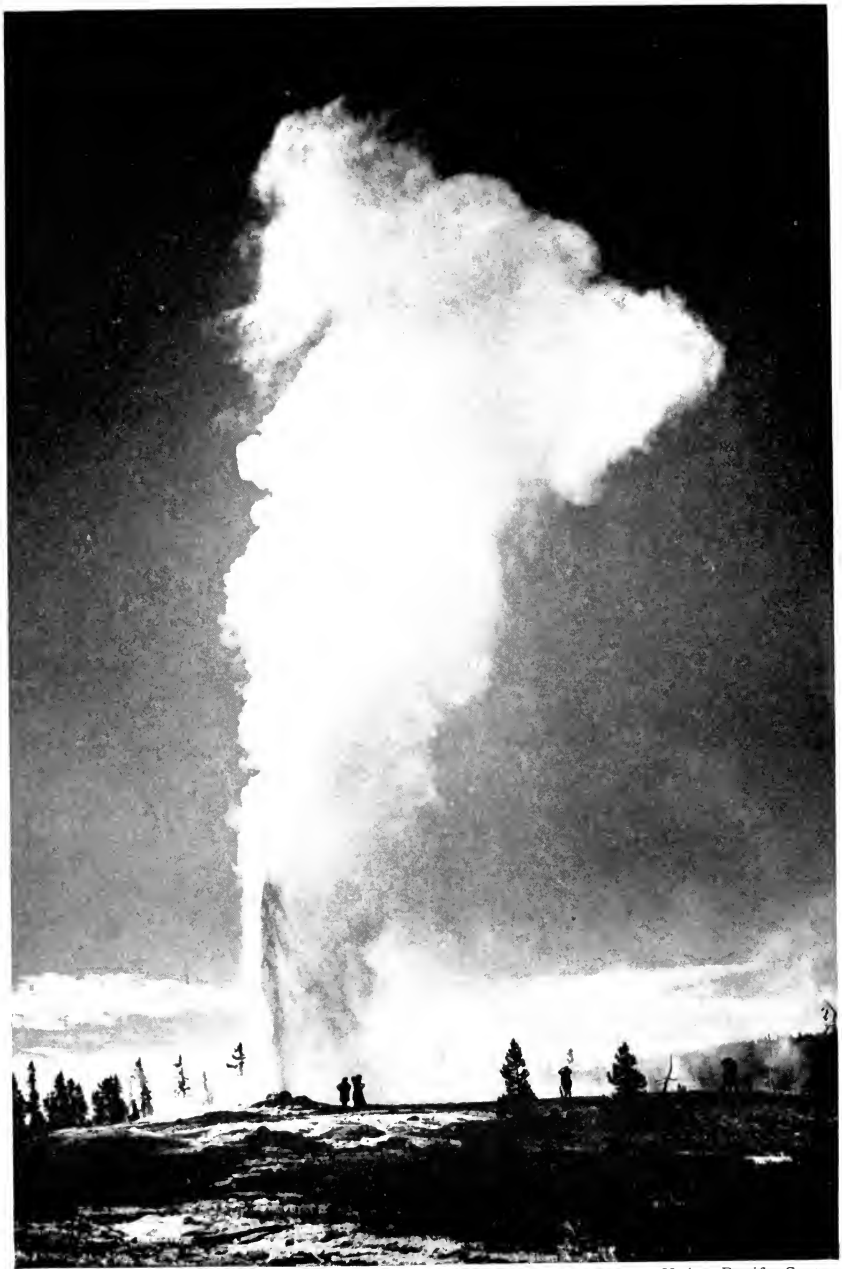


*Photo. courtesy Union Pacific System*

***Old Faithful Geyser,***
***which erupts every hour***

spawn in the autumn. In general, spawning fish are probably too occupied to be eating each other's eggs. The great destruction of eggs and fry may be due to the presence of fish that spawn at other seasons.

The rangers try to regulate the fishing seasons so that no fishing is done while the trout are spawning. However, in the Yellowstone where trout are spawning both spring and autumn, this is practically impossible. Of course, it is too much to expect the chap who has come a thousand miles to go fishing to throw back the fine trout he has just caught because it happens to be a species spawning at the time. Most of the experienced anglers do that, not only to assist in the task of keeping the waters stocked, but also because spawning fish are not the best eating. The meat is somewhat soft and lacks the fine taste it would have at other seasons. This is a fine practice, one that should be encouraged. If the fish is handled with moist hands when removed from the hook, there is usually no serious injury inflicted. Thrown back into the water, the grateful trout swims off, a wiser, more wary fish thereafter.

The rangers realize that these technical aspects of trout life are not so interesting to the Sagebrusher as the answer to the question, "Where can I catch some fish?" The Sagebrusher has driven a hundred miles that day, his mouth watering for trout. Even as he cross-examines the first ranger he meets, he can smell those trout frying in the pan. He has separated the old rod from the place of honor in that moving van, his auto, and he craves action. It is up to the ranger to direct him to the lake where fishing is good. Not until his family has been fed with trout is the Sagebrusher interested in the story of how the rangers have spent the last six years keeping that particular lake stocked for this season's fishing.

The Sagebrushers are the fishermen of the national parks. And the fisherwomen, too. The Dudes, coming to the parks on trains and traveling on prearranged schedules, find it difficult to take time for fishing. It takes time and patience to angle for trout. It can't be done on an itinerary. The trout are the greatest little itinerary busters in the world. Give a normal, growing, healthy trout half a chance and he will ruin the most adamant itinerary. The rangers saw that happen when President Coolidge came to the Yellowstone. Advance agents worked out in fine detail a schedule of travel, with every move timed to the minute. It lasted only until the presidential party reached Yellowstone Lake, where the cutthroats got into the Coolidge itinerary and what they did was plenty.

That's the way it goes. Strong, hardy men, of sterling character, leaders in the church and respected in their communities, will go out with a rod and reel swearing by all that is mighty that they have but an hour to spare and promising their wives to return for dinner. Do they?

Why, just the "goin' " part of goin' fishin' takes that long. First there is the ceremony of hauling out the old pipe (used only when the annual assault on the trout is made), scraping it, knocking it on the trunk of a tree, stoking it, coaxing the fire in its bowl, tasting the first few puffs with meaning smacks of the lips, and then getting down to business.

Next comes the luring of the lures out of the lining and the band of the old hat, used the year before. This practice is frowned upon by the more particular anglers nowadays, who hold that flies should be kept in fly books. Even so, bringing them out, inspecting them and talking about them, reviewing the artillery and soaking the leaders, is quite a ceremony. Then there is the rod to be pieced together and strung with the best line in the U.S.A., something owned by every other angler himself in person. After a few flourishes of the rig as finally assembled, the angler addresses himself to the waters and the fly whistles over his head and out where a trout "ought to be." Sometimes he is. Wham! The line is jerked taut and the match is on, a battle of wits between a flashing, zigzagging, fighting trout and an excited, eager opponent on shore or in the boat, the odds somewhat against the trout at that stage of the game.

Sometimes the best of charms fail, and one by one the pretty flies find their way back into the hat lining or into the fly book, and at last out comes the old spinner that did the work the year before, a last resort which fly fishermen always seem reluctant to use. Of course, there is many a lure between the Royal Coachman and the humble angleworm, and though most anglers are too proud to use anything but flies at the start, their pride unbends after a few hours and many are the tricks that are played on the poor old trout. He is offered rubber minnows and wooden frogs and bright-colored what nots until he just cannot keep his appetite in curb.

One sees some odd outfits in the parks. Travelers are always looking for compact equipment. Some of it is of little use. Some of it is excellent. What to bring seems to puzzle many would-be anglers, judging by the questions they ask the rangers. The experienced angler, of course, knows exactly what he wants, and seeks no advice. But for the novice, a few suggestions may not be amiss. Everyone cannot afford the elaborate and costly complete outfits. The beginner at this royal sport often prefers to rent fishing tackle at the stores found in all of the national parks. That is economical, but it is not so satisfactory for the Sagebrusher who may want to stop and angle en route from point to point.

Those who yearn to fish ought to equip themselves with good tackle. If they are novices, they might well take some lessons in the use of a split bamboo rod, lest the first time they get a fair-sized fish on the end of the line they jerk him into the air and break the delicate tip, if not the whole rod. It is necessary to know just how much strength to put into the hooking of a fish in order to protect the rod. It is not a bad idea for the novice to try a steel rod at first, one capable of standing hard knocks. Besides, a steel rod can be used for trolling and casting with a heavy spinner, upon which the beginner must rely to bring home the fish when he is just learning the sport. As he learns more about the technique of casting, he can get a fly rod and better tackle, smaller flies, and finally in all probability barbless hooks will become a part of his standard equipment.

As to lines, it never pays to buy a poor or cheap one which loses its life and vigor when it gets wet. It wraps around everything in sight, is hard to untangle, and never gets far out over the water. Cheap line may be all right for bait fishing from a boat or for trolling, but if there is any casting to be done, it takes a good line to achieve the snare and delusion.

Leaders are essential in fly fishing and trolling and must be kept in good condition. If carefully preserved, leaders will last a long time. They must always be soaked before using, of course. The weight and strength must be in proportion to the fish to be caught if one is not an expert. Never try to land a ten-pound Mackinaw with a leader made for one-pound fish. Many people just learning to fish tie spinners and even flies right on to the line and throw them out into the lake or stream. This is wrong, for the simple reason that the fish can see the line. The leader has a definite and important value that everybody should learn right at the start, that of deceiving the fish into thinking the artificial fly is a real one.

The reel is an important part of fishing tackle and the advice to give about reels for the beginner is to get a good one. A weak reel will let your line run out and will even tangle it up in winding or unwinding. Of course, many experts prefer the automatic reel, but it is not a necessary part of the ordinary equipment and it takes skill to use it effectively. Besides, it is expensive.

Getting down to lures, here again experience counts a lot. Bait fishing makes possible the use of a small variety of lures. The spinner is more effective at certain times than at others. When fish are feeding deep,

they will not rise to a fly. Trolling becomes necessary in order to get them. Spawning fish, especially females, will fight a spinner, and at the spawning time of the year the spinner will furnish a lot of fun to the person who does not realize that every time he catches a spawning female he destroys an important potential factor in the maintenance of good fishing in that water.

Most of the rangers are fly fishermen and they consider the use of the fly the best sport there is in the national parks or elsewhere. Everybody who aspires to be a fisherman should learn to cast. It takes time and patience to learn, but it is a fascinating pastime. He who once gets into the spirit of it will stand and cast for hours without trying to get a fish, just as a golfer will spend all day knocking his little ball around, practicing the fine points of the game. The use of flies, of course, depends on what the fish will bite. The best thing to do upon arriving at a new lake or stream is to watch the water and see what the fish are jumping for, if they are jumping at all. If the trout are after a dark insect, use a black gnat or brown hackle or some other dark fly. If moths are flying, use bigger flies of the same color as the prevailing moth or other large insect. The most popular light flies in the national parks are the Queen of the Waters and the Royal Coachman. But one should have a fairly good variety of flies, both large and small, light, dark, and medium, and keep them in a fly book and not around the hatband—although a few flies in the hatband do give the impression that one is really goin' fishin'.

The rangers try to tell visitors where to go to fish and what to use in the way of a lure, but whether or not one is successful will depend upon skill, in the first place, and the number of fishermen who have been there before, in the second place. By August, in many of the parks, the fish have become pretty sophisticated and wary, especially along the roads, and no lure will fool them, unless in the hands of an Old-Timer who has learned how to fool them under any and all circumstances. It has been said in some parks that toward the end of the season along the roads the only lure that will attract a trout is a club sandwich, and even then the fish insist that only chicken and fresh tomatoes be used in the sandwich.

After the trout have been caught, they should be carefully cleaned, and the fisherman should do this himself. The real angler never takes the fish to camp for the women folks to clean. A good fisherman can clean a fish in less time than it takes to tell about it, and he ought to do it as part of the day's work. As a matter of fact, it will be the only work of the day, since everything else is great fun. Most Sagebrushers like to fry their fish over the open fire and that is the best way to cook them, according to the notion of rangers and other mountain men. Fry

them in bacon grease and serve them with a little bacon. Dutch-oven biscuits with fish and coffee at night, and flapjacks with them in the morning, are camp meals de luxe.

Have you ever heard of a "ranger sandwich"? It is made of the left-over supper biscuits, the left-over morning hot cakes, the left-over bacon and fish from both meals, a little butter, and, if eggs were left over, put them in too. This combination sounds terrible, but next day about noon, if one is walking, fishing, or riding horseback in the fine fresh air, a "ranger sandwich" will taste better than the best meal the hotel can put up. Besides, it is economy in the use of food, an important factor in the mountains.

The lure of trout fishing isn't entirely in the catching of fish. It is in the uncertainty of it, the sporting element, the gambling of time and wits against the habits of the trout. Sometimes it would seem that anglers are greater fish than the trout. They will bite on anything! They will trudge miles upon miles, with nary a grumble, because somebody has told them of seeing whopping big trout in a certain remote lake. That recalls a fishin' story. One time when a newspaper writer was visiting Yellowstone he noticed a big club near the cabin occupied by a ranger stationed at Slough Creek.

"What's the club for?" asked the writer.

"Aw, that's my fishin' club," explained the ranger.

"Fishin' club?"

"Yeah, fishin' club. I take it when I go fishin' down the stream. There's a big trout in there that's grabbed every fly I had but one and bit the leader in two. I take the fishin' club along to whang the big devil over the head and drive him away so I can catch some of the other fish."

That story soon appeared in the papers, and during the rest of the summer Sagebrushers kept dropping into the office to ask the location of the stream with that big fish in it that had to be hit over the head with a club. Some of them displayed the double, extra-heavy deep-sea tackle they had brought along with which to drag the "big devil" out of the water.

At that, deep-sea tackle is hardly too heavy for some of the big fish occasionally caught in the parks. In Glacier and Yellowstone parks, lake or Mackinaw trout twenty pounds in weight have been caught from the deep waters, while in Yosemite they occasionally catch German Browns that weigh almost that

much. These big fellows will not rise to a lure, as a rule, and must be attracted by bait, lowered with sinkers. The big trout are not sporty. As age and size creep upon a trout, he becomes less interested in the active life. He feeds on the bottom of the lake. His meat is not as good as that of the younger and more active fish. The big fellow simply uses his weight and strength to break the line, if he can. He uses none of the tricks of the one- to five-pounder.

Fishin' stories!

The national parks are the places to hear them. The rangers are the boys to tell them. Give Joe Douglas, assistant chief of Yellowstone, his chance. Doug is a practical fellow, a good woodsman, a horseman, and a packer. He is supposed to know something about mules, as well as fish. Until he told the following story, Doug had an enviable reputation for veracity.

Doug and a companion were out on a pack trip and ran short of rations. They pitched camp alongside an attractive trout stream. Doug is so sure of his angling that he is always counted upon to supply a camp with fish. So, after turning their horses and the pack mule loose to graze in the meadow, Doug turned to fishing. They were biting that day. As he caught them, Doug tossed the trout on the bank a safe distance from the stream and cast out for more, planning to gather them up as he returned to camp. Within a short time he had landed twelve fine trout. He cut a forked stick on which to string the fish and turned just in time to see, to his amazement, his pack mule devouring his last catch. Further investigation revealed that the mule had followed him stealthily and eaten every trout he caught. Doug insists this is not a fish story but is a true account of mule- and fish-facts.

Then there is the famous Jim Bridger story of the mountain-climbing trout he saw in Yellowstone, fish which could "pack over the hump of the Rockies," the continental divide. That was regarded as a colossal lie until Two Ocean Pass was discovered. This pass also explains how trout climbed above Yellowstone Falls, into Yellowstone River, and into the lake of the same name. It is really a deep, meadow-covered pass in the continental divide with two connecting streams, Atlantic and Pacific creeks, each flowing ultimately into its respective ocean. Fish can easily move from one stream to the other. There can be no question but that the cutthroat trout came over into the Yellowstone headwaters from the Snake River and its tributary, Pacific Creek.

"In which park will I find the best fishing?"

The rangers hear that question frequently, especially when they are away from the parks on vacations. There is good fishing in practically all of the parks, though it is better at times in some than in others. There are different kinds of fish to be caught, and the angler's preference in the matter of fish must be considered. Experienced anglers have their affections for certain kinds of fish and look upon all other members of the finny tribe with something approaching disdain. The steelhead angler insists there is no fishing like steelhead fishing, while the golden-trout devotee claims the steelhead isn't even a trout. So there you are!

Most of the fish found in the national parks are trout. The lakes and streams of the parks are at a high elevation. In these icy waters, fed continually by snows and glaciers, the trout is right at home. The trout likes cold water. In the Lyell Fork of the Tuolumne River in Yosemite Park the trout go so far upstream that they almost reach the ice of the melting glaciers. In these high, cold waters trout do not grow to large size, but they are far more delicious eating than the big fellows found farther down stream. The different varieties of trout found in national park waters are as follows:

The rainbow, so called because of the shafts of color that run lengthwise on his body, is a native of California. The rainbow is found in natural state in Yosemite and Sequoia parks. This fish seldom weighs more than two pounds, but he is the gamest, hardest-fighting trout of all, and is a great favorite with anglers. The meat of the rainbow is usually pink, almost the color of salmon. As a matter of fact, many of the trout belong to the salmon family, being really fresh-water salmons. The rainbow has been successfully introduced into Yellowstone, Mount Rainier, Crater Lake, Rocky Mountain, and other parks.

The golden trout, a native of Sequoia Park, is the most beautiful of trout. This fish is usually found in small streams and does not grow very large, although in certain lakes it has been known to weigh two pounds or more. The face of this trout is olive, its sides and belly are a light golden, while down the middle of its sides are scarlet stripes. Along the middle line of the belly is a scarlet band. Dr. David Starr Jordan, who first described this trout, named it *Salmo Rooseveltii,* in honor of President Roosevelt.

The cutthroat, or redthroat, so named because of the deep red dash or blotch between the branches of the lower jaw, is the native trout of Yellowstone, Glacier, and Rocky Mountain National parks. It is found mainly in the higher waters of Yellowstone, and above the falls. The cutthroat normally grows to be a good-sized trout, three or four pounds in weight, and occasionally is found much larger, even running up to ten or more pounds. Where the cutthroat is the native trout and where

it thrives we keep exotic trout out of its waters. The cutthroat is a gamy, tasty fish, much appreciated by fishermen.

The German Brown, or von Behr, is a trout imported from Europe. He is usually the color of the bottom of the stream or lake he inhabits, and is hard to see. This trout is distinguished by the dark brown spots on the pale brown body. This was the "brook trout" of England, made famous by Izaak Walton in his memorable work, *The Compleat Angler*. The German Brown grows to a large size, if he escapes the fisherman's bait, in Yosemite attaining ten to fifteen pounds.

The Loch Leven was imported to the United States from the lakes of the Scottish Highlands. It originated in Loch Leven, immortalized in Sir Walter Scott's poem, *The Lady of the Lake*. In markings, the Loch Leven is much like the German Brown, dark brown spots on a light brown body. It is a much more lively fish than the German Brown and is found in many of the lower-level lakes and streams of the parks.

The eastern brook trout was brought to the national parks from the lakes and streams of the Atlantic Coast. It is a light colored, bright, speckled trout, often called "the speckled beauty." Eastern brook trout grow to larger sizes in western waters than they do in the East. It is a favorite with the bait fishermen.

The Dolly Varden, or bull trout, sometimes called the red-spotted trout, is a stoutly built fish, with a large head and a broad flat snout. It is olive colored with red spots about the size of its eyes. These spots are red on the sides of the fish and paler on the back. It is found in Glacier and Mount Rainier National parks and is abundant in streams of the West.

The Mackinaw, or lake trout, is the fish for the angler who wants to have his picture taken with a big one. These trout attain three feet in length and weigh twenty pounds in some of the lakes and larger smooth-water rivers. The Mackinaw has light spots of a reddish tinge on a dark or pale gray body. The Mackinaw lives down deep in the water. To capture him it is necessary to use bait or spinners well weighted for a lure. He is not a fighter, but because of his great weight and strength will play havoc with light tackle.

In addition to the trout there are two other fine fish found in the Rocky Mountain national parks: the grayling, a native fish, slender, graceful, beautiful, with pearl-like luster, large hard fins, a good fighter, but not large, usually from one to two pounds when full grown. The grayling has white meat, is good eating, and resembles the trout in habits. The Rocky Mountain whitefish is similar to the grayling, with smaller fins. He has a sucker-like mouth and must be handled with care by the fisherman. The whitefish, unlike the grayling, is not sporty, and is sought only because it is good eating.

Occasionally other kinds of fish are found in the waters of the parks, but not frequently. In the early days, when the stocking of streams was a haphazard matter, largely in the hands of well-meaning individuals, fish of many kinds were planted in the streams and lakes. Gradually the trout have been eliminating the others, and sometimes have eliminated other trout. If a native trout will not live in a certain lake or stream, then the rangers try another kind. In some lakes in Yellowstone they have tried practically every variety of trout, without success. Sometimes this is due to lack of food, sometimes to peculiar contents or to temperature of the water. In view of this, it is always well to talk over your fishing plans with a ranger when you enter a park. He can at least save you the time you might spend fishing in waters where fish cannot live. And he may be able to tell you just where you can catch them.

To recapitulate, park by park, these are the kinds of fish that anglers may expect to find in the different parks they visit:

In Yellowstone, the native is the cutthroat, which is the only trout found in the eastern half of the park. In the Gibbon River and in the lakes at its headwaters, there are rainbow trout. Brook and Loch Leven trout are found in the streams on the west side of the park. Mackinaw are in the Snake River and in Shoshone, Lewis, and Heart lakes, and are found just south of the park in Jackson Hole lakes. Grayling are found in some of the lakes and streams of the Madison River watershed, and whitefish in the lower Yellowstone River and in the Madison. No fishing license is required in Yellowstone Park.

In Glacier National Park, the native trout is the cutthroat. Rainbow trout, Dolly Varden, eastern brook, and grayling have been introduced, and lakes are well stocked. No fishing license is required.

In Rocky Mountain National Park, the native is the cutthroat. Rainbow and eastern brook have been planted. Whitefish are also found in the lakes. A Colorado state fishing license is required and can be secured in the park.

In Mount Rainier National Park, fishing is sometimes difficult, due to "glacier milk" in the waters of streams. The glaciers empty quantities of ground rock into the streams each summer. Yet many trout are caught each year in this park, rainbow, cutthroat, Dolly Varden, and brook. No fishing license is required.

Crater Lake, having no streams flowing from it, was not stocked

with fish when discovered. One of the pioneers of Oregon, Will G. Steel, superintendent of the park for several years and now United States Commissioner there, took it upon himself to carry trout to the lake in cans. They have prospered, and now Crater Lake offers good rainbow and black-spotted trout fishing. No fishing license is required. An interesting sidelight upon the introduction of fish into Crater Lake was the problem of finding food for the fish. The trout at first refused to grow because of the scarcity of fish food in the lake. A fresh-water shrimp was finally found that grew rapidly in the lake and the trout began to grow large and fat as soon as the shrimps became plentiful.

In Lassen National Park the streams are well stocked with the native California rainbow trout. The usual California fishing regulations prevail here and a California license is required.

Yosemite National Park, with more than three hundred lakes and streams, is well stocked with trout. More than a million fry have been planted each year for several years in the waters of this park, and a new rearing pond in Yosemite Valley now supplies the park with fingerlings. The native trout is the rainbow. In addition there are German Brown, eastern brook, Lock Leven, cutthroats, and a number of other exotic varieties, among them the steelhead, always prized by anglers. The steelhead is a sea-running form of the rainbow trout, recognized by its small head, its silvery body, and its large scales. Introduced into several Yosemite lakes, this trout, ordinarily found only in the coast streams, has increased in numbers and grown to good size. A California fishing license is required, and can be obtained in the park.

In Sequoia National Park the natives are the California rainbow and the golden trout. The steelhead, Loch Leven, and cutthroat have been introduced to Sequoia waters and have done well. A California fishing license is required.

Grand Canyon National Park offered some problems when the rangers undertook to stock its waters, naturally barren, with trout. There were fish in the river, but the waters were so muddy that fishing was not attractive. In 1925, 50,000 cutthroat trout eggs from Yellowstone were shipped 1,200 miles by express to the north rim of Grand Canyon, thence 250 miles by motor truck, 35 miles by pack animals, and one mile on the backs of rangers to the waters of creeks flowing into the Colorado River on the north slope. This was one of the most difficult plants undertaken by the rangers. During the entire distance, the eggs were

packed in ice, to maintain the temperature of Yellowstone streams across the hot deserts of Arizona, until they could be planted in the cold waters of Shinumo Creek. The planting was entirely successful and fishing is already good in the streams stocked. Similar plantings have since been made in Bright Angel Creek and other waters of the park.

Some of the best fishing waters in the national parks were originally barren of fish. This was due, no doubt, to the high altitudes of the lakes and streams of the parks and to the waterfalls in the parks which barred the upstream progress of the fish. The trout, like the salmon, is able to negotiate difficult rapids and small waterfalls in his search for the headwaters in which to spawn, but not such enormous falls as Vernal, Nevada, and the Yellowstone. Originally all of the northern and western waters of Yellowstone were barren of fish. Most of the better streams and lakes of Yosemite were devoid of fish, likewise those of Sequoia, Glacier, and other high-altitude parks.

In their natural state trout spawn under difficulties at best. As the spawning time approaches, the fish push up toward the shallower waters, where the female selects a spot near the bank of the stream and prepares her nest by washing out the sand with her tail and pushing aside the gravel with her nose. After forming a slightly concave depression, she deposits a part of her eggs on the newly cleansed gravel, and the male, which up to this time has been playfully swimming around the nest, emits milt upon them almost simultaneously. The female then covers the eggs with the loose gravel. The spawning, impregnating, and covering are repeated continuously until the eggs are all laid. The eggs of trout are heavy and non-adhesive. They will sink, therefore it takes current to wash them away. Often flood waters destroy all eggs laid in a stream.

When the tiny fish is first hatched, he has a large stomach, like a pollywog, which makes it difficult for him to navigate. He falls easy prey to a passing fish, which may eat hundreds of little fish in a day. Life is a precarious proposition, with the odds all against the small fish until he grows the size of a fingerling and can take care of himself.

The rangers and the representatives of the United States Bureau of Fisheries and the state hatcheries have sometimes planted in one year as many as eight million fry, just hatched, in the waters of the national parks. It is doubtful if more than one in ten survives the first year, with all the existing hazards. For this reason the rangers are gradually dis-

continuing the practice of planting fry, except in barren waters where the fry are safe from older fish. In many of the parks rearing ponds are being built, in which the little trout can be raised to fingerlings. In these ponds the trout are fed on beef liver. They grow rapidly, and within a year after they are hatched are well able to fight for themselves.

Everybody, of course, wants to "catch the limit." The inference always is that the angler could have caught a great many more if it had not been for the limit. All anglers like to infer that. Limits in the national parks have varied to conform to the regulations in the different states. Most of the state limits have been too generous. Twenty-five fish are too many for one person, yet when the limit is twenty-five the sporting fisherman feels that he must catch the limit to be a good sport. In Yosemite the rangers tried the experiment of holding the limit at ten fish, though the state limit is twenty-five. The limit of ten proved entirely satisfactory to most fishermen. They wanted to be able to say they caught the limit. One way to increase the sport of fishing for a limit of ten is to fish with barbless hooks, from which the trout may escape if the line is not taut. Barbless hooks do not injure the fish, and if the limit is passed they may be thrown back.

The greatest fishing spot in any of the parks is the Fishing Bridge of the Yellowstone River, just below the lake of the same name. This is the outlet of the lake, and here the cutthroats gather in great numbers, working up the stream to the lake. On the bridge crossing the river one can count as many as fifty fishermen at a time, and every one of them seems to be catching fish. Sagebrushers love to camp by this spot so that they can fish early and fish late, without being far from camp, and recently the rangers laid out a large campsite there. Walk through it any evening and you will find trout frying in the pan over almost every campfire.

Fishing in the Yellowstone brings some unusual thrills, with the great variety of streams and lakes, the beauty of swift-flowing waters of the big rivers and small creeks, and the thought that some of the cutthroat may have crossed the continental divide through Two Ocean Pass; but the greatest of all thrills is "the music of the lakes." Ever since the Yellowstone was discovered, on Lake Yellowstone and on Shoshone Lake, strange sounds, sometimes like moans, again like the low humming of a tune, and again like sweet music, have been reported by anglers. Curiously, the sounds are heard when the air is still, the sky clear, and the water smooth as glass, and rarely ever except in the morning.

These strange sounds were first described in the early 'seventies. In 1891 Professor Edwin Linton of Washington and Jefferson College,

and Stephen Forbes of the Illinois State Natural History Survey, had an experience which Dr. Forbes described as follows:

"Here we first heard, while out on the lake in the bright still morning, the mysterious aërial sound for which this region is noted. It put me in mind of the vibrating clang of a harp lightly and rapidly touched high up above the tree tops, or the sound of many telegraph wires swinging regularly and rapidly in the wind, or, more rarely, of faintly heard voices answering each other overhead.

"It begins softly in the remote distance, draws rapidly near with louder and louder throbs of sound, and dies away in the opposite distance; or it may seem to wander irregularly about, the whole passage lasting from a few seconds to half a minute or more.

"It is usually noticed on still, bright mornings not long after sunrise, and it is always louder at this time of day; but I heard it clearly, though faintly, once at noon when a stiff breeze was blowing.

"No scientific explanation of this really bewitching phenomenon has ever been published, although it has been several times referred to by travelers, who have ventured various crude guesses at its cause, varying from that commonest catch-all of the ignorant, 'electricity,' to the whistling of the wings of ducks and the noise of the 'steamboat geyser.' It seems to me to belong to the class of aërial echoes, but even on that supposition I cannot account for the origin of the sound."

In 1919 Dr. Hugh M. Smith, then United States Commissioner of Fisheries, had a series of adventures on Shoshone Lake with these strange sounds. The following is a part of his report on these experiences:

"The surface of the lake was glassy, the air was still, a faint haze overhung the water, the sky was cloudless, and the lake for a considerable distance out was in the shadow of heavily timbered hills. The canoe had barely gotten under way and was not more than twenty meters from the shore when there suddenly arose a musical sound of rare sweetness, rich timbre, and full volume, whose effect was increased by the noiseless surroundings. The sound appeared to come from directly overhead, and both of us at the same moment instinctively glanced upward; each afterward asserted that so great was his astonishment that he was almost prepared to see a pipe organ suspended in mid-air. The sound, by the most perfect graduation, increased in volume and pitch, reaching its climax a few seconds after the paddling of the canoe was involuntarily suspended; and then, rapidly growing fainter and diminishing in pitch, it seemed to pass away toward the south. The sound lasted ten to fifteen seconds and was subsequently adjudged to range in pitch approximately from a little below center C to a little above tenor C of the pianoforte, the tones blending in the most perfect chromatic scale."

The sounds are still heard and remain unexplained. Hardly a summer goes by without some excited fisherman coming in with a tale about the weird sounds from the air above the lakes.

The national parks are already the rendezvous of the trout anglers. They can be made the finest fishing places in the country. They enjoy certain advantages peculiar to themselves. They are at the headwaters of streams where the water is cold and invigorating the year around, just right for the gamy trout. These waters cannot be spoiled by pollution, the greatest enemy of the fish. The winter seasons, when the parks are little frequented, give the fish their opportunity to increase and grow. In at least half a dozen of the parks there are literally scores of lakes and streams ideal for trout propagation. All that is needed to complete this picture of fisherman's paradise is sufficient money to build rearing ponds and raise the fish from fry to fingerlings.

The mellowing influence of goin' fishin' has already been mentioned. It is something that must be tasted to be enjoyed. Give a ranger the hardest-shelled, most pompous dignitary in business or public life to take out in the mountains, just fishin'. Watch him pull out the old pipe, draw down the old slouch hat, loll around the campfire with the boys. See him unbend, become "reg'lar." Keep an eye on him while he is fishing. There is hope and optimism in his eye, there is youth in his fingers as he zings out his line over the water. The way he jumps when that trout hits the line! Note that smile as he holds the speckled beauty high for inspection! "Ain't he a fish, though!" Hear him say it. Take a deep breath as the trout hits the pan, alongside the coffeepot, over an open fire. Aroma, oh, man! What if the fish is overdone? What if the coffee is strong enough to paint a cabin? No chef could ever put into food that delicious flavor of the mountains, tasted by a fellow when he has been goin' fishin'.

# "Indians!"

"Indians! There! See them? Real, live Indians!"

The very word sets the blood a-tingle. Generations of John Smiths, Miles Standishes, George Washingtons, Daniel Boones, Kit Carsons, and other famed American Indian fighters stir in their graves. In a flash, their exploits live again in the mind's eye. It is bred in the bones of the American to thrill at the cry of "Indians!" Some mother among his ancestors hides her children, some father thrusts a gun between the logs of a cabin wall. It is life or death.

"Bang! And another redskin bit the dust." The romantic, ever victorious fights of the dime-novel heroes flicker before the mind. In an instant there is flashed a whole history of Indian fights, the wresting of a continent from a race of red men. Like as not, the modern American has never seen a real Indian. That does not lessen his interest in them. In a vague sort of way, he believes the Indian is a species almost extinct. His great hope is to see a few of them outside the movies before the last of the redskins "bites the dust."

Actually, it is not true that the Indians as a race are departing from this earth. The facts are that since they ceased fighting the white man and condescended to live as his neighbor, the American Indians have been increasing in numbers. In 1877, when the Sioux, Nez Perces, and other tribes were still on the warpath, it was estimated that there were 250,809 Indians in the United States, not counting some 20,000 Alaska natives and about 6,000 Sioux who fled under Sitting Bull to Canada, following the Custer massacre. In 1926, the census gave the Indian population as 349,876. The Indians increased 27,161 between 1911 and 1926.

The average Dude or Sagebrusher is not interested in Indians who have become civilized, who wear store clothes, ride in automobiles, and look like any other brand of humans. The Dude wants to see "real Indians," the kind that wear feathers, don war paint, make their clothes and moccasins of skins. Give him one such Indian and the Dude is much more excited than he would be if he had seen a whole nation of Indians at the humdrum pastime of making their living in peaceful pursuits. In fact, he is hardly sympathetic with the efforts of the Indian Bureau to make the Indians self-supporting and independent in the white man's way. It does

not particularly interest him that there are remnants of 341 Indian tribes in the United States, that there were more than 10,000 Indian soldiers in the World War, that 69,892 Indian children are in schools, that the total value of Indian property is $1,693,844,806, or that the area of the Indian reservations in 1924 was 68,696,448 acres, or about eight times that of all the national parks and national monuments together.

Even so, about the best place for the Dude or the Sagebrusher to see the Indian in his natural state is in some of the national parks. The Indians have been closely associated with the parks since their discovery. The Indian knew the monuments that are the basis for the parks long before the white man. The wonders that have attracted the white man were objects of worship or fear to the red man. They formed the nucleus of legends told by his wise men. Many of them are the red man's explanation of how the earth was created. If the Indian did not live within the shadow of a monument, or what is now a national park, he lived near enough so that his priests could perform ceremonies on proper occasions giving due credit to the gods who were supposed to live in the waterfall, on a great cliff, or within the earth beneath a volcano or a geyser basin.

So it seems particularly appropriate that the national parks, intrusted with preserving a small part of the American continent in its natural state, should contain practically the only Indian tribes which are still living as they did before Columbus discovered America. This all came about quite naturally. The lands that are now in the national parks for the most part were not suitable for settlement by the white pioneer. Either they were too remote from cities or railroads, or they were too rugged for development, or they were set aside in reservations at an early date by the government. Since the white man did not need these hunting grounds, the Indian who lived in national park territory was allowed to go his way without much disturbance, except when he waged war on the whites.

The visitor is certain always of seeing Indians at Grand Canyon National Park in Arizona. The Canyon cuts diagonally through the heart of the Indian country of the Southwest. Immediately adjacent to the park, east and southeast, is the vast Navaho reservation, really several reservations joined together. It includes the Hopi Indian lands. In this area live 35,000 Navahoes and 2,500 Hopis. West of the Grand Canyon is the Truxton Canyon agency of the Hualapai Indians. In the park itself is the Havasupai reservation, home to about 180 Havasupais, all that remain of this primitive nation. Between the North Rim of the Grand Canyon and the Utah parks lies the extensive Kaibab reservation, set aside for the Piutes. However, few Indians live on this reservation.

Within the park itself, Navahoes, Hopis, and Havasupais are seen almost always at the South Rim, Bright Angel Camp, and other points. Perhaps the greatest object of interest is the Hopi House on the South Rim, an exact replica of one of the ancient Hopi houses on a mesa in the reservation. Here are seen real Hopis in their native costumes, the women making the pottery for which they are skilled, the men engaging in their interesting and picturesque dances each afternoon.

These Hopis are members of the oldest race in the Southwest. They were a settled nation of Indians who attained a considerable degree of culture and skill at the arts. They built their homes of adobe, in the form of picturesque pueblos, situated high on the mesas where they could defend themselves from their warlike nomadic neighbors. The Hopis, unlike the majority of the Indians, derive their living from their little farms. They keep domestic animals, raise corn, and carry on their interesting arts and crafts quite independent of the outside world.

By taking the side trip from Grand Canyon Park over the Navahopi Road, visitors can find the Hopis at work in their villages exactly as they lived before the Spaniards discovered and attempted to conquer this region three centuries ago. Here the Dude can see the Hopi maiden grinding blue corn, to be used in her wedding ceremonial. The Hopis raise many kinds of corn, blue, red, yellow, and other colors. Each color has a significance. They are careful in their dress, neat in their appearance. Their houses are clean in spite of the fact that they keep their dogs and pigs in the courtyards, which often form the roof of the families living in the apartments one story below, the Hopi villages being constructed in terraces on the cliffs. The Hopis dress in colorful costumes and wear bright-colored bands around their heads. This is their chief distinguishing feature.

Navahoes are seen in considerable number in Grand Canyon Park. Many of them find employment with the government or the public utilities in the park. They are good workers and a fine nation of Indians. They never have been dependent upon the government for food and shelter, being successful shepherds. Their sheep furnish them with meat for food and wool for clothing. At their villages, where the Navahoes lived in crude hogans made of brush and sticks and mud, many of the men worked as silversmiths, making bracelets, rings, pins, and other ornaments, often decorated with turquoise settings. These are highly

prized, not only by the natives but by the Dudes and Sagebrushers who visit the reservation. The Navahoes are great gamblers, a habit which often costs them their beloved jewelry, since the losers must often pawn their trinkets at the traders' stores to pay their debts.

The Havasupai village is far down in the Havasu Canyon, a beautiful valley with trees and waterfalls, several thousand feet below the rim of the Grand Canyon. Here are the homes of the last of the Havasupai nation, a tribe of Indians that lived by cultivating corn, making baskets, and hunting. The Havasupais still live exactly as they did before the white man came, except that some of the men work for the government on the roads, while to their usual crops they have added melons, figs, and peaches. Once Uncle Sam built every family of Havasupais a wooden cottage, but the natives used these buildings for the storage of food and farm implements, preferring to live in their crude huts resembling Navaho hogans.

The only way to reach Havasu Canyon is via the perilous Indian trail, best described by an old Indian one day, when he said:

"I ride 'em horse home. Go down, go down some more, go down, go down some more, go down, down some more. Horse slip, I jump. Horse go down, go down some more. He catch 'em plenty dead at bottom."

The famous Snake Dance of the Hopis is held each year in August, usually at a different village on the reservation near Grand Canyon Park. The dancers actually carry live rattlesnakes in their teeth during the ceremony. The dance is held for the purpose of bringing rain to the land. The snakes are supposed to carry the Hopi prayers for rain to the gods, who are thought to live underground. Quite often it rains within a short time after the dance, so the Hopis have grounds for continuing their belief in the potency of the Snake Dance.

In the mountains west of Santa Fe, New Mexico, and above the occupied pueblos are several scenic valleys in which lie numerous ruins of ancient Indian civilizations, among them the ruins of Puye, Otowi, Tsankawi, and Frijoles Canyon. These valleys, with their interesting ruins and unique scenery, will be made into the new National Park of the Cliff Cities. Many of the ruins lie in, against, or on top of cliffs of tufa and other soft rock into which the early peoples could dig with their crude implements. Santa Fe, to be the headquarters of the proposed new Cliff Cities Park, will also be headquarters for all National Park Service archaeological work in the Southwest. It is, incidentally, the oldest city in the

United States. Taos, farther north, is a spectacular pueblo. In fact, there are two great pueblos at this place, one on each side of fine mountain streams. High mountains rise back of the Indian villages and the whole scene is one of such charm and beauty that it has attracted artists and writers from all over the nation. The Taos region has three settled sections: the Indian villages, San Fernando de Taos, the American town near which Kit Carson is buried, and Ranchos de Taos, a very old Mexican town farther south. In the Mexican town is an ancient mission church.

Mesa Verde National Park was created to preserve the most remarkable ruins of prehistoric inhabitants of the Southwest that remain anywhere. There are two types of ruins, one embracing great buildings under overhanging cliffs, and the other old pueblos on top of the mesa. The former occupants of these cliff dwellings are thought to have been the ancestors of the Pueblo, Hopi, Zuñi, and other pueblo-dwelling Indians of New Mexico and Arizona. The park is joined on the south by the Southern Ute reservation, and southeast a short distance is the Jicarilla Apache reserve.

The superintendent of Mesa Verde Park, Jesse L. Nusbaum, is an archaeologist of note, and around the campfires at night he tells the story of the ancient dwellers on the Mesa Verde as it has been pieced together from pottery, baskets, and other artifacts. He employs Navahoes in the work of maintaining the park roads and trails. These Navaho men have their wives and children with them and park visitors are privileged to see a real Navaho village in the park. There are always Navaho women weaving blankets, others doing camp work, and usually there is a baby or two to lend more interest to the scene. In the evenings, the Indians give native dances after the superintendent's talk.

Occasionally the spectacular play, *Fire,* written by Mrs. Nusbaum, and embodying the legends of the Navaho nation in relation to the very valuable element, fire, is produced. This play is written in such a way as to make it possible to use Navaho Indians as actors. The great cliff dwelling known as Spruce Tree House, near headquarters, is the stage for the play and flares furnish the lights, as there is no electricity available. The actors, the stage, the lighting, and the action of the play itself make this production one of the finest things that has ever been undertaken in a national park.

Trained guides take the park visitors through the principal ruins and explain to them the life and customs and industries of the builders of these great structures who thrived for centuries, then disappeared from the face of the earth. Mesa Verde Park

is also one of the best places to go to see modern Indians, but how much more interesting is a place like this park where one can see the civilization and culture of tribes that have disappeared, as well as that of those who are still in the flesh!

Just as the parks and monuments of the Southwest offer the best opportunity to see the desert Indian at home, so Glacier National Park is the place to see the Plains Indians in real life. Here the visitor sees the picturesque and colorful tepees of the Blackfoot Indians, one of the outstanding tribes of Plains Indians. They were mighty hunters and valiant warriors, tall, proud, dignified, the very personification of the redskin of story-book fame. The Plains Indians ranged over the vast, gentle eastern slope of the Rockies, living almost exclusively by hunting. Many were the wars they fought with the white pioneers, even resisting the troops sent to conquer them.

The Plains Indians lived an entirely different life from that of the Southwest natives. Of the arts and crafts of civilization they knew nothing. They neither wove baskets nor made pottery. On the other hand, they were fine physical specimens, tall, slender, athletic, and handsome. Their food they garnered by killing animals. The skins and hides served to make clothes and to provide shelter. They were more or less nomadic, each nation by common consent or superior prowess controlling vast hunting grounds. The men hunted the animals, the women dried their flesh so that it kept all winter long. The men had captured and tamed the wild horses, descendants of those loosed on the plains by the early Spaniards. The warriors were skilful riders.

Of all the Plains Indians the Blackfeet, so called because their moccasins were often black from walking on the burned prairie grass, were the most distinctive. Bound together by a strong racial pride, this nation was deeply concerned in resisting not only the invasion of the white man but the introduction of his ways into Indian life. Warlike, predatory, and inconsiderate of their neighbors, the Blackfeet were possessed of a strong sense of destiny. They were noble and handsome in appearance. Their features were more finely carved than those of the neighboring Indian tribes. It was the profile of Two-Guns-White-Calf, present chief of the Blackfeet, that was used for the reverse side of the buffalo nickel. Their complexions were lighter than those of other Indians, the men being almost tan, the women often so fair they were very nearly white. The noble bearing of their old men was extraordi-

nary, the object of much admiration and wonder on the occasion of the visits of the Blackfoot chieftains to Washington to see the Great White Father. There were many orators among the Blackfeet. They loved to harangue their people and urge them to resist the white man's ways.

It is a happy circumstance that this fine nation of Plains Indians should live still on the border of Glacier National Park. The ancient hunting grounds of the Blackfeet included the eastern half of the park. Within the park is a great cliff over which the Blackfeet were accustomed to drive herds of bison in their annual hunts. The buffaloes were killed by crashing to the rocks below. This cliff was a prized asset of the Indians, who otherwise were forced to ride among the buffaloes in stampedes and kill them with bow and arrow, or by the hazardous expedient of thrusting knives into the great beasts while riding at full speed. The Blackfeet are no longer allowed to hunt in the park, since it is a game refuge, but they still pitch their picturesque tepees near the hotels and lodges and camp there during the summer. Their summer villages are of tremendous interest to Dudes and Sagebrushers, who love to gather about the Indians, both at the villages and in the hotel lobbies.

The Blackfeet, while usually quite solemn and dignified, have in fact a good sense of humor. Frequently they elect distinguished visitors to honorary membership in their tribe, bestowing the honor with fitting ceremonies and giving the new members appropriate Indian names. Sometimes, however, the naming of the honorary tribesman is the occasion for a practical joke. Once they decided to take into the tribe a guide who had been friendly to the Indians but who was known as a great liar because of the extravagant stories he told the Dudes whom he escorted over Glacier Park trails. When his Indian name was translated it was found to mean literally "Sits-Up-Straight-in-the-Saddle-and-Lies."

The Blackfeet have always been proud of their mountains. They claim that they had names for all the principal features of the park area that formerly belonged to them. The translations of many of their names have been given to Glacier Park peaks, lakes, and waterfalls, such as Going-to-the-Sun, Almost-a-Dog, Four Bears, Rising Wolf, and Little Chief Mountains, Two Medicine and Red Eagle lakes, Morning Eagle Falls, and so on. The Blackfeet assert that the white man has taken from the mountains, lakes, and rivers many of their best and most cherished names and has put on white men's names that do not sound so well and do not belong in the park. Back in 1915, three distinguished Blackfeet,

Bird Rattlers, Curly Bear, and Wolf Plume, came to Washington to protest to the Secretary of the Interior against the use of white men's names in Glacier Park. They were promised that henceforth only Indian names or their translations would be used in Glacier National Park, and that policy is still in effect.

Other Indians in early days occupied the western part of Glacier Park beyond the continental divide. These were the Flatheads and the Kootenais, but they were inferior to the Blackfeet. Today they reside at considerable distances from the park. The old Flathead reservation southwest of Glacier Park has been opened to settlement and the Indians are seen only if the Sagebrusher explores the byways off the main highways.

Indians have figured prominently in the history of the Yellowstone. Indirectly, they were the cause of its discovery, and more directly they were responsible for its isolation for almost half a century after the discovery of the geysers, the hot springs, and the canyon and lake. Travelers and explorers hesitated to make the trip to Yellowstone for fear of annihilation by hostile Indians. For two generations the territory that is now the park was visited only by intrepid trappers.

There were four great tribes of Indians living about the Yellowstone territory. They did not live in what is now the Yellowstone, for fear of incurring the wrath of the "Evil Spirit" who was supposed to reside among the geysers and the hot springs, and also because the country was inaccessible and there was better hunting in the valleys below the park region. The Indian name for the Yellowstone was "Burning Mountains," and it is easy to understand their superstitions. Only when they were pursued and sought refuge to save their lives would parties of Indians come into the Burning Mountains. There are still relics of their tepees along the road from Roosevelt Camp to Mammoth and in the Gallatin section of the park. These tepees were but temporary affairs hidden in the forests and erected no doubt for the purpose of hiding their smoke from their enemies. Yellowstone was somewhat of a battle ground for the four tribes who lived around it, the Crows, the Blackfeet, the Bannocks, and the Shoshones.

The Crows, or Absaroka as they called themselves, lived in the region between the Yellowstone and the Big Horn rivers and in the Big Horn Valley and mountains of that name, east of what is now Yellowstone National Park. They were great nomads and marauders. When the white settlers first came into the Montana area, the Crows stole many horses and such other property as they could carry off under the cover of night. They were expert horsemen and it was almost impossible to

catch them, especially if they took refuge behind the Absaroka Range in what is now Yellowstone. Nevertheless, they were regarded as the friends of the whites, and never went to war against the settlers. They helped John Colter, the early explorer, and Crow scouts were guides for Custer's army and were with him in 1876 when he and his troops were massacred on the Little Big Horn by Sitting Bull and the Sioux.

The traditional enemies of the Crows were the Blackfeet, the Indians of Glacier Park. Whenever roving bands of Crows and Blackfeet met, a battle invariably ensued, in which the Blackfeet were usually victorious. The Blackfeet were regarded as the enemies of the whites, though they never went on the warpath as did the Sioux. The Blackfeet, by "pot-shooting" every white man they could find, probably killed more settlers than any of the tribes that took to the warpath. The relations of the Crows and the Blackfeet to the white men have been traced back to a comparatively small incident in the life of John Colter.

When the Lewis and Clark Expedition returned from the Pacific Coast in 1806, passing within one hundred miles of Yellowstone Park, Colter, one of the scouts, asked permission to stay in the Rockies and accompany two other fur traders working up the Missouri River. He had been away from civilization four years, yet he was ready for more of the wilderness and hardship in order to explore virgin country. In 1807, Colter, in the employ of a Spanish fur trader named Manuel Lisa, pushed up the Yellowstone River, seeking to make friends with the neighboring Indians for the fur trader. He fell in with a band of Crows and accompanied them south on a hunting expedition. The Crows met a band of Blackfeet and a battle followed. Colter quite naturally fought on the side of his friends, the Crows, and this time, contrary to the usual outcome of Crow-Blackfoot battles, the Crows were victorious. This increased the enmity of the Blackfeet for the white men, but helped establish friendly relations with the Crows. Thereafter the Crows were the friends of the white traders pushing into the Yellowstone.

The third tribe of Indians was known as Shoshones. This great nation lived south and southeast of the park. The Shoshone tribes living on the border of Yellowstone were peaceful Indians. They were known derisively by the Crows and the Blackfeet as "fish-eaters" and "root-diggers," because of the manner in which they garnered their food. They dug their roots, dried them, and ground them into flour, from

which they made a pastry known as "sour dough." The Shoshones liked fish, a food which the Crows and the Blackfeet despised and would eat only when facing starvation. A branch of the Shoshones called Tukuarika, but dubbed "sheep-eaters" by the whites, actually dwelt in Yellowstone Park in the northern, eastern, and southern parts. They were a timid people, small in stature and lacking in brains and initiative. They were often seen in the park in the early days.

A fourth nation of Indians, who probably saw more of the park than any others in the early days, were the Bannocks. These lived to the west of the park in what is now Idaho. These Bannocks were a peaceful tribe who crossed the Yellowstone every summer to get to the buffalo country. They feared this crossing and preferred to keep out of the domain of the Evil Spirit, but their fear of the Blackfeet and the Crows was even greater. Consequently the Bannocks braved the Yellowstone each summer to avoid fights and to get their supply of dried buffalo meat.

Another Indian episode that figures prominently in Yellowstone annals is the memorable flight of Chief Joseph and his Nez Perce Indians across the park in 1877. The Nez Perces, so named by the early French traders because this tribe pierced their noses and wore nose rings, lived in western Idaho and eastern Oregon, well outside the Yellowstone territory. They were discovered by the Lewis and Clark Expedition and made friends with the white man at once. Missionaries and traders and trappers lived among them, converting the Nez Perces to Christianity. One of these converts was Chief Joseph, an Indian of remarkable ability, integrity, and intelligence. He eventually became chief of the tribe.

The Nez Perces, by a series of treaties, ceded the white settlers important tracts of farming land within their hunting grounds. Much of this was done on the advice of Chief Joseph, contrary to the wishes of other and older counselors of the tribe, who viewed with great alarm the encroachment on the Nez Perce lands. Finally in 1877, when a gold rush caused miners to settle in the heart of the Nez Perce lands regardless of treaty rights, the young braves of the tribe revolted and several white men were slain. The fighting was against the counsel of Chief Joseph, who urged patience and peace; but once the white men were killed he realized that the government would demand vengeance upon his tribe. This was the beginning of one of the most memorable Indian wars in American history.

Chief Joseph decided that the only chance for his tribe was flight to Canada. Accordingly, incumbered by women, children, and the tribe's belongings, he led the Nez Perces out of the Wallowa Valley in eastern Oregon, across Idaho, into the fastnesses of Yellowstone, across the park, and almost across Montana, fighting all the way, until within thirty

miles of his goal most of the Indians were trapped and captured. At the start, Chief Joseph was harassed by soldiers from the west. He fought them off, outwitted parties sent to block his path, outgeneraled troops sent to meet him in Yellowstone and Montana, and in spite of his great handicaps and lack of supplies, held his band together. While in the Yellowstone, the Nez Perces captured two separate parties of tourists, exchanged their tired horses for the fresh ones of the visitors, confiscated part of the supplies, and pushed on, with women and children, always eluding the troops. In this remarkable hegira, Chief Joseph led the Nez Perces over half a dozen mountain ranges, through passes that were considered impassable, all the time in strange country, until he reached northern Montana, the old buffalo hunting grounds of the Nez Perces.

Chief Joseph and his exhausted tribesmen were surrounded by two troops of militia on Snake Creek in the Bear Paw Mountains, within sight almost of freedom. General Miles, whose admiration had been stirred by Chief Joseph's gallant flight, persuaded the Nez Perces to surrender on condition that they would be returned to their old home. General Miles's agreement, made in good faith, was ignored by the government, which treated the Nez Perces as criminals and sent most of them to Leavenworth Prison and later to Indian Territory, where many died; but in 1885 Chief Joseph and the remnant of his tribe were removed to a reservation in Washington. Here the old warrior lived for twenty years, aiding and counseling his people. Once he made the long trip to Washington, D.C., to visit President Roosevelt and General Miles. Chief Joseph's story is a part of that of the Yellowstone, though his people never lived in the park other than during the brief period when they sought refuge there. When the old Indian died in 1904, there passed away perhaps the most remarkable man his race produced, in modern years at least.

Just as the Blackfeet are a part of Glacier National Park, the Crows are coming to be associated with Yellowstone Park. In 1925 a group of Crows were allowed to come to Yellowstone Park and help round up the big buffalo herd. They wore their ancient hunting costumes and rode bareback as they chased the buffaloes over the hills of the Lamar River country. Crowds of Sagebrushers went out each day to see the Indians bring down the buffaloes from the mountains. One day a buffalo was killed accidentally and was given to the Indians. One old Indian

remembered how to prepare it for drying, and all through the night the Indians worked on that buffalo, cutting the meat into small pieces and pounding it into thin sheets which they hung on a line to dry. The next day it looked from a distance as if the Indians had put out a big washing, as the buffalo meat occupied many long lines strung between the trees. The Indians would not eat the meat in the park. They said they were going to take it back to the reservation with the hide and head and there have a big dance.

The national park pageants, most of which were developed by the late Garnet Holme, former pageant master of the National Park Service, preserve much of our Indian lore. *Tenaya,* a pageant of Yosemite named after the Indian chief who ruled Yosemite Valley when the white men came, pictures the wresting of the famous valley from the Indians. *Ursa of the Redwoods* enacts the legends of the giant redwoods in Sequoia National Park. *Casa Grande* pictures the ceremonies by which the desert Indians of Arizona and New Mexico sent their prayers to the rain gods. In all of these out-of-door dramas, Mr. Holme has delved into history and attempted to preserve the legends and the true stories of the Indians as nearly as can be done. Another fine pageant is *The Masque of the Absaroka,* presented by the people of Bozeman, Montana, preserving legends of the Crows. The National Park Service has encouraged these pageants as a means of reviving the picturesque and interesting Indian ceremonies, one of the first features of Indian life to disappear when the native adopts the white man's mode of living.

The region that is now Rocky Mountain Park was a favorite hunting ground of Arapahoe and Cheyenne Indians. They visited this country at all times of the year, but the higher elevations only in the summer and fall. Indian names were bestowed on many features of the park territory, and translations of them were used a long time ago by the whites, but unfortunately nearly all have vanished now. Battles were fought in what is now park territory, according to evidence revealed by rock piles and other apparently human interference with natural conditions that cannot be traced to white settlers. The Rocky Mountain Park region, especially the Estes Park open country, must have been a paradise for Indian hunting at certain times of the year, and one can imagine today great villages of tepees amid the red and yellow aspen leaves of autumn when the deer and elk come down from the higher areas with the first storms.

West of the Rockies, doubtless, Shoshones, Utes, and other tribes of Wyoming and Utah perhaps came to hunt in what is now the Grand Lake region of Rocky Mountain Park and perhaps in these remote re-

gions there were conflicts between the parties whose year-around territories were on opposite sides of the continental divide.

The Indians of the Zion Park country were Piutes, a tribe that ranged over much of Utah, nearly all of Nevada, and into eastern California, beyond the Sierra. There were Piutes in Owens Valley in the Sierra Nevada, and in the 'sixties they were so fierce and warlike that the United States had to send in troops to quell them. Fort Independence was built as a base for these troops. Today these Indians can be seen in short side trips from Yosemite Park.

The Piutes were troublesome to the early emigrants, first to the Mormons, then to the California gold seekers. A string of early Mormon forts was built in Utah as a protection from these redskins. One of these forts is at Pipe Spring in northern Arizona, and is now in a national monument, protected by the National Park Service. This fort, however, was used mostly for the protection of early settlers from marauding bands of Navahoes from the Southeast.

One of the worst massacres recorded in American history was the Mountain Meadows Massacre in southern Utah, perpetrated by Piutes and the renegade whites who led them. This occurred not far from Zion Park on the road to California. An entire emigrant train was overtaken by these Indians and their white leaders, and most of the members of the pioneer party were slain.

Salt Lake City was the haven of safety and peace, the Zion of the early Mormon settlers. In southern Utah, the canyon of the Mukuntuweap Creek, a branch of the Virgin River, was a place where the Mormon pioneers of the southern part of the territory could hide from the Indians in time of danger. They called this canyon Little Zion, and today this canyon is the main feature of Zion National Park. In it and in the Parunuweap Canyon near by are many indications of prehistoric peoples. There were cliff dwellings in these canyons as well as other structures on the cliffs and on the valley floors.

In the California national parks, one finds traces of an entirely different type of Indian. The natives who live in the foothills of the Sierra Nevada are known as Digger Indians. They are rated low in the classifications of Indians. Life was simple for them. In a balmy climate, they needed little shelter and they eked out a living on nuts, roots, plants, and such small animals as they could shoot, adding to this diet the delicacy of grasshoppers. They were of the same general type of Indian as those whom the Franciscan padres gathered in the California missions. Under the direction of the missionaries, the California Indians were fair workers, but in their natural state they developed no art other than basket making.

In Sequoia National Park, the Potwisha tribe of Diggers lived and

thrived. The dividing line between their territory and that of the next tribe, the Watchumna, was at Lime Kiln Hill near Lemon Cove. The earliest visitor to the region that is now Sequoia Park was Hale D. Tharp, who came into that country in 1856. He told Judge Fry, who was for years ranger and superintendent of the park, that when he first entered the valley of the Kaweah River there were two thousand Indians along the main river and its branches above Lemon Cove.

In Yosemite Valley, there lived an outstanding and remarkable band of Indians, a branch of the Miwok tribe. They called themselves the Yosemites, after the grizzly, a name chosen after a battle in which one of their braves overcame a great bear. The Yosemites found in the valley of Ahwahnee, "peaceful, grassy vale," as they called Yosemite Valley, all that an Indian tribe could ask of its gods. It was a good hunting ground. It was plentiful in acorns, from which the Yosemites made a meal. It enjoyed a fine climate, and best of all it was so secluded that the Indians were sure it would never be reached by the white man.

Under the direction of an able chief, Tenaya, the Yosemites developed into a warlike nation. They accepted into their tribe the refugees from other California tribes, many of them wanted for depredations on the white settlers below. In this manner Tenaya built up the strength of his fighting force, and he also became responsible for the acts of Indians whom he could not control. When the gold miners began pushing up the Merced River until they were dangerously near the stronghold of the Yosemites, some of Tenaya's braves went on the warpath, killed miners, raided and burned stores, and raised havoc until the whites, in retaliation, sent various expeditions to punish the Indians. On one such occasion Tenaya and his braves, with wives and children, fled up over the mountains to the land of the Monos, a tribe of Nevada Indians with whom the Yosemites traded acorn meal for pine nuts and the obsidian with which they made arrowheads. The Monos were related to the Piutes. From the desert tribes farther east they had acquired horses and had learned to ride them skilfully. The Monos were proud of their horses.

In the hour of need, the Monos gave the Yosemites shelter and food. Tenaya accepted it gratefully. He stayed with the Monos until the white men departed from his stronghold, then he led his people back to Yosemite Valley. The Yosemites repaid the hospitality of the Monos by stealing some of their horses. Not being riding Indians, the Yosemites valued the horses only as food. When the angry Monos overtook the Yosemites, the latter were gorging themselves on horseflesh. In the battle which followed, they were no match for the Monos, who practically wiped out the Yosemite tribe, including Tenaya himself.

Lassen Volcanic National Park, in northern California, is historic ground. One of the old emigrant trails runs through the northern part of the park and is today one of the most interesting features of the region. Northeastward are the lava beds where the famous Modoc War took place in 1872 and 1873. This war was a bitter one, and many settlers and soldiers as well as Indians were killed. The Modocs still inhabit the Lassen country and are to be found all the way up to Oregon, where their ancient contacts were made with the Klamaths; but they rarely come into the park and the visitor to that region should look for Indians in the more northerly valleys.

Crater Lake National Park is in the heart of the country of the Klamath Indians. As one goes toward the south or east entrances of this park, he passes through the Klamath Indian reservation, which has many broad mountain meadows and splendid forests. The Klamaths were troublesome when the whites first came into their territory, and the government had to build Fort Klamath and station troops there to keep the Indians quiet; but it was not long until they came under the influence of missionaries and turned to peaceful pursuits. Old Fort Klamath was a picturesque reminder of the early days of Oregon, and stood near the road to Crater Lake Park until very recently. Crater Lake Park figured prominently in the legends of the Klamaths.

The Indians west of Rainier Park were Diggers resembling in many respects those of the tribes of the California coast and interior valleys. They were the Nisqually, the Puyallup, and the Cowlitz tribes, all short, flat-faced, unattractive Indians who gave the white settlers very little trouble and did not quarrel much among themselves. They speared fish, principally salmon, dug clams in the sands of Puget Sound, and in summer gathered berries and roots in the hills.

Quite different are the characteristics of the Yakimas and Klickitats who lived beyond the park territory on the east. They resembled the Plains Indians. They were tall, lithe, and had strong features. They owned horses and were excellent riders. They were hunters, and each year came to the great mountain to stalk the wild goat, deer, bear, and the big elk which formerly roamed that country in large bands.

Many of these northern tribes feared Mount Rainier and refused to venture above the snow line. The Indians viewed with alarm the efforts of the white man to climb Mount Rainier. The records of various parties which undertook to scale the mountain tell of the difficulty of securing Indian guides. There is preserved in the records of the Stevens party a sincere warning voiced by Sluiskin, the Indian guide to the expedition, who refused to go beyond Paradise Valley. Said he to his white friends:

"Listen to me, my good friends. I must talk to you. Your plan to

climb Takhoma [one of the Indian names for Mount Rainier] is all foolishness. No one can do it and live. A mighty chief dwells upon the summit in a lake of fire. He brooks no intruders. Many years ago my grandfather, the greatest and bravest chief of all the Yakima, climbed nearly to the summit. There he caught sight of the fiery lake and the infernal demon coming to destroy him and he fled down the mountain, glad to escape with his life. Where he failed, no other Indian ever dared make the attempt. At first the way is easy, the task seems light. The broad snow fields, over which I have often hunted the mountain goat, offer an inviting path. But above them you will have to climb over steep rocks overhanging deep gorges, where a misstep would hurl you far down, down to certain death. You must creep over steep snow banks and cross deep crevasses where a mountain goat could hardly keep his footing. You must climb along steep cliffs where rocks are continually falling to crush you or knock you off into the bottomless depths. And if you should escape these perils and reach the great snowy dome, there a bitterly cold and furious tempest will sweep you off into space like a withered leaf. But if by some miracle you should survive all these perils, the mighty demon of Takhoma will surely kill you and throw you into the fiery lake."

The impassioned warning of Sluiskin of the Yakima is expressive of the Indian's reverence for the wonders that are now the national parks. The Indian lived daily in the shadow, not only of the mountains, the cliffs, and the waterfalls, but of death. He lived as a wild thing lived, by the caprices of Nature. Life was to him fickle, hazardous, difficult. Little wonder that he resisted, albeit futilely, the invasions of the white pioneers into his hunting grounds. Natural it was that he fled for a last refuge to the lands of his gods. No picture of the national parks is complete without the story of the Indians that lived in them. Elsewhere, the white men have changed the Indian and his manner of life. In these few spots, where the devastation of civilization is held in check, it is fitting that the red man, too, should be found still living as a child in the arms of Nature.

# Nature's Notes

"Oh, Ranger, Ranger!"

The ranger paused in his talk to a group of Sagebrushers gathered at the upper end of Yosemite Valley.

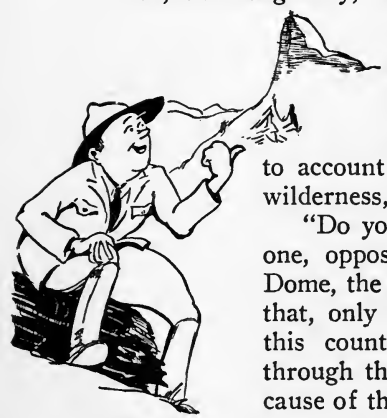
"May I ask a question?"

"Yes, ma'am," said the ranger, with a twinkle. "Ask me a hard one."

"Where is the other half of Half Dome?"

Everybody laughed but the ranger.

"Well, it's a long story," began the Old-Timer. "Everybody sit down on the log and I'll tell it. Of course, what I'm telling you happened a long time ago and it is just theory, but so far as I can learn it is as near the truth as anybody has been able to come. Nature leaves her notes to account for everything that has happened in the wilderness, but sometimes it is hard to read them.



"Do you see that other dome up there, the round one, opposite Half Dome? It is known as North Dome, the perfect dome. Half Dome once looked like that, only much larger. The domes are peculiar to this country. They are solid granite, pushed up through the softer rock. They peel off in layers, because of the action of the heat and cold.

"The other half of Half Dome was plucked away by the glaciers.

"It happened this way, if we read Nature's notes correctly. When the glaciers came in contact with the rock of Yosemite, the rock contracted under the extreme cold. That cracked enormous pieces of rock loose from the mountain and they were slowly pushed away by the glaciers. That is what happened to half of Half Dome. It was plucked from the mountain, cracked up, and pushed away by the ice. It is scattered in boulders down the Merced River Canyon."

The ranger paused for the next "hard one." It was not long in coming.

"How high is Half Dome?" asked a Sagebrusher.

"It towers about a mile above where we are sitting," he said.

"Do you mean to say that a glacier could carry away half of a mountain a mile high?"

"That is the theory, sir. As a matter of fact, there were probably two glaciers that did the work. During the Ice Age, one pushed down Tenaya Canyon and became wedged between Half Dome and North

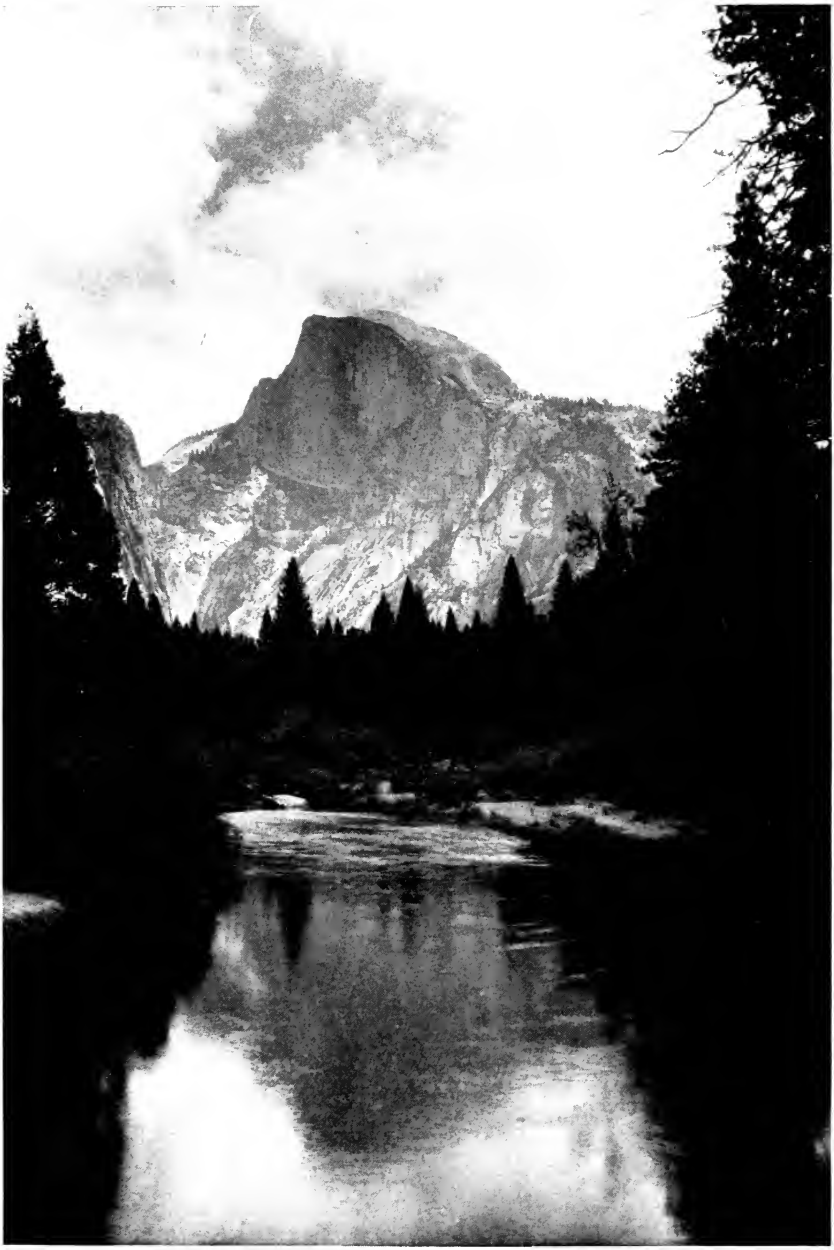
Dome. It finally pushed through and met head-on with the other glacier slowly moving down the Merced Canyon. The two of them churned around with billions of tons of weight behind them and finally plucked and scraped at the cliffs until they carved the present walls of Yosemite Valley.

"You can find a record of what happened on those walls up there. If you look closely, you will see spots where the cliffs have been polished almost as smooth as the marble of a bank building. Granite does not crack so smooth naturally. The glaciers, scraping away at the sides of the mountain, polished that rock. That is one of the ways that Nature chooses to leave her notes for men to puzzle about. Near Tenaya Lake and again near Merced Lake are perfect examples of glacier polish on the cliffs.

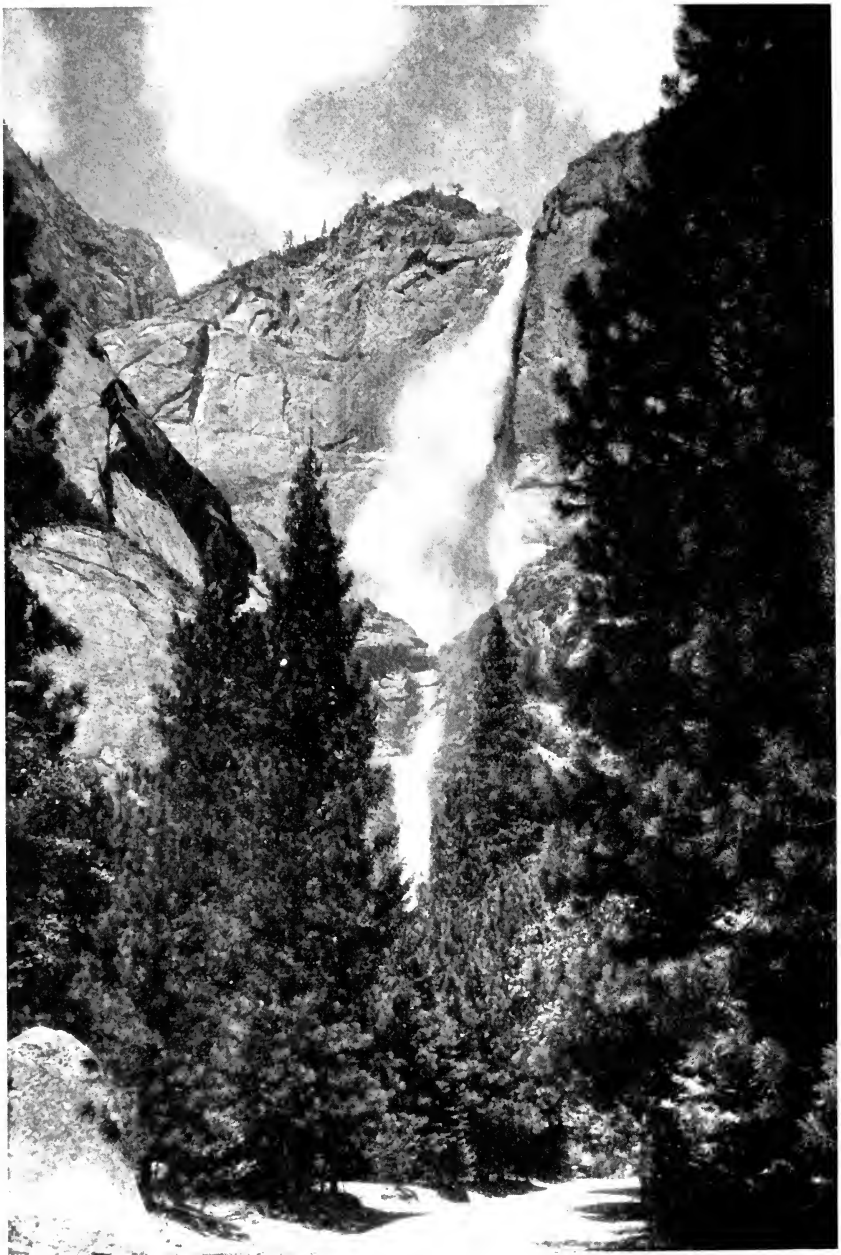
"Here in Yosemite Valley, the biggest job of the glaciers was to carve Yosemite Valley deeper and deeper. Streams had already carved a deep gorge, but the glaciers made it wider. When they melted, the gorge became a lake. The streams next dumped sediment into the lake and it became a valley. You can see the same process happening over again, on a much smaller scale, at Mirror Lake. There the streams are now filling up the lake, just as they have already filled Yosemite Valley with fine silt several hundred feet deep. Glacier Point, thirty-two hundred feet above the valley, was left suspended by the glaciers when they melted. One of Nature's little jokes was to leave a great rock suspended over the cliff, almost half of it projecting over the rim. That is known as Overhanging Rock."

One of the ranger's most important jobs is telling the visitors to the parks how it all happened. In all of the parks there exist phenomena of Nature. These marvels were, of course, the reason for setting aside the area as a national park. The visitor is not satisfied to come and look at a beautiful mountain. He wants to know why it is there, what happened to make it, and if it will always look as it does at the time he sees it. Some of the answers to his questions are the solutions to the riddles of the universe. They call for scientific explanations in simple terms which the layman can understand.

The story of the national parks, from a natural history point of view, is an interesting one. In the early days many fakes were perpetrated upon the unsuspecting visitor by guides ill-trained to tell of the ways of Nature in the creation of the earth. Often the true answer to a question was not known. So the guide told the Dude that half of Half Dome was shaken down in a great earthquake. To give visitors the true answers to their questions, as well as they can be read from Nature's notes, a staff of ranger naturalists is found in the parks. Their business is to study the mountains and their children, the glaciers, the forests,

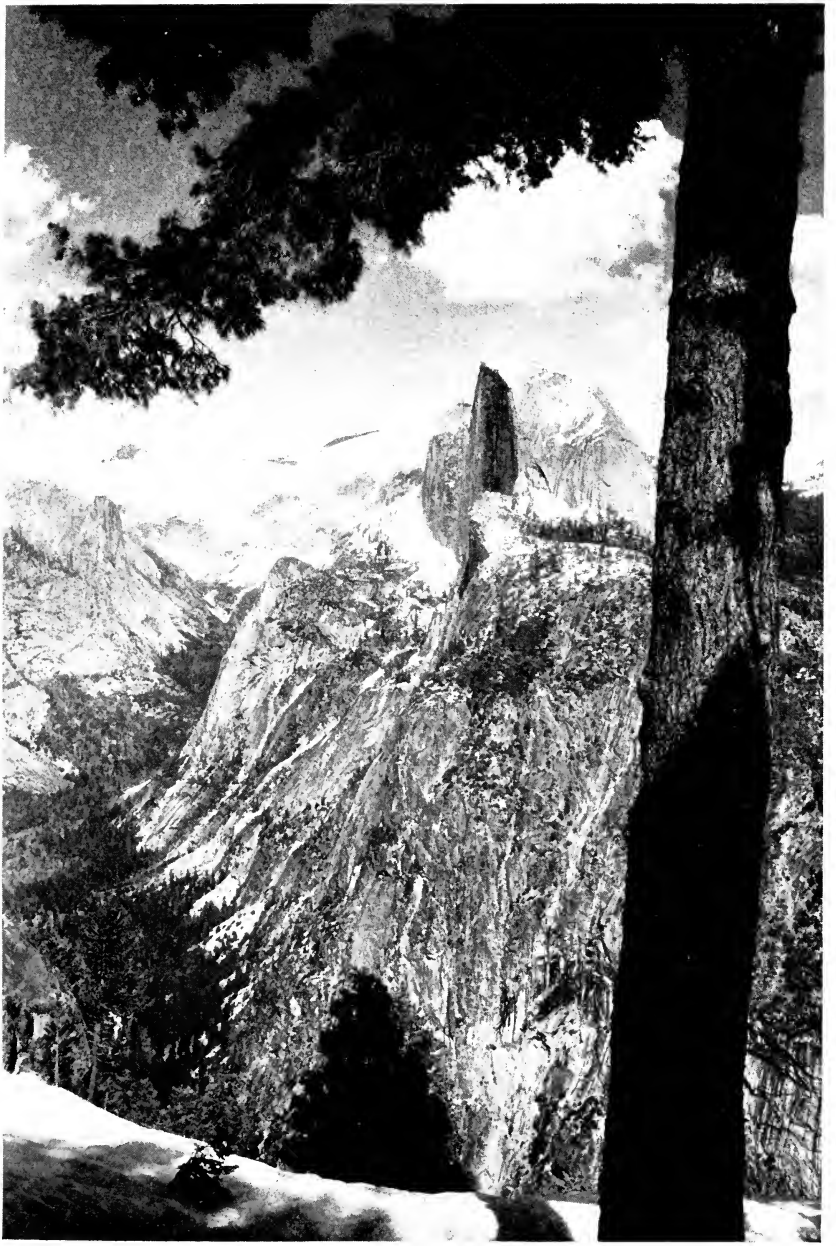


*Yosemite Valley, with Half Dome in the background*

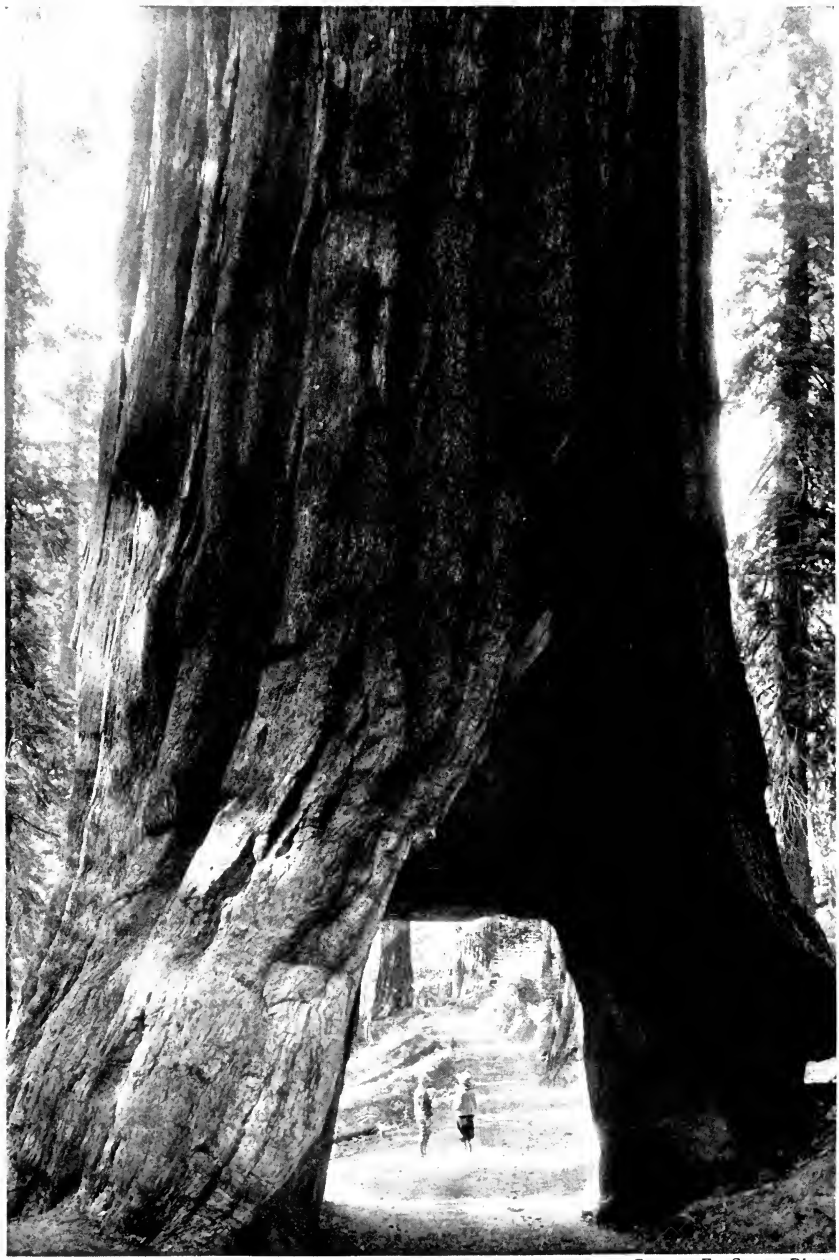


*George E. Stone Photo*

***Yosemite Falls***



*Half Dome, rearing its bulk one mile above Yosemite Valley. A view from Glacier Point*



George E. Stone Photo

*The Wawona Tree, Yosemite National Park,*
*a sequoia so huge that the road passes through its trunk*

the animals, the streams, and the cliffs. They are under the direction of a chief naturalist, Ansel F. Hall, a recognized authority of fine scientific standing.

The nature-guide idea was first undertaken a great many years ago. Dr. H. S. Conard, of Grinnell College, Iowa, former head ranger naturalist of Yellowstone, is the third generation of nature teachers who have taken students and friends afield to study the secrets of the hills and forests. The first excursions into the national parks were conducted by men of scientific training, often college professors and teachers. Later, when travel increased, it was difficult to find men adequately trained to talk of the parks' wonders authoritatively. Enos A. Mills, of Rocky Mountain Park, and Dr. Harold C. Bryant, of the University of California, were pioneers in the movement to train ranger naturalists so that they might tell visitors the interesting truth about the national parks.

The regular rangers, though not scientifically trained as a rule, have made themselves reliable practical naturalists to cope with the barrage of inquiries which they are sure to meet each summer. Long experience has taught them never to laugh at any question, albeit foolish. "When do the geysers freeze over?" The Yellowstone ranger hears that daily. Anyone who stops to think would know the geysers do not freeze over. Yet the ranger must keep a straight face and answer the question seriously. Behind it may be an earnest desire for knowledge. There is something of the explorer in every person. When he has discovered a petrified tree, he wants to know how wood came to turn to stone, how long ago it happened. It makes the visit to the petrified tree doubly interesting to be informed by the ranger naturalist that the wood did not turn to stone but that the grain of the tree, decaying, was replaced by silica from the water, that it happened many thousands of years ago, and that no eruption has taken place in that great span of years to destroy the relic of the last of the earth's upheavals.

Recognizing the educational possibilities of this interest in the natural phenomena of the parks, the National Park Service aims to keep at least one ranger naturalist in each park. In the larger parks a considerable staff is maintained, directed by a head naturalist who is also in charge of the park museum. In Yosemite, several ranger naturalists are on duty on the floor of Yosemite Valley, one at Glacier Point, and at times others are stationed at the Big Trees, Tuolumne Meadows, and other points where Dudes and Sagebrushers gather.

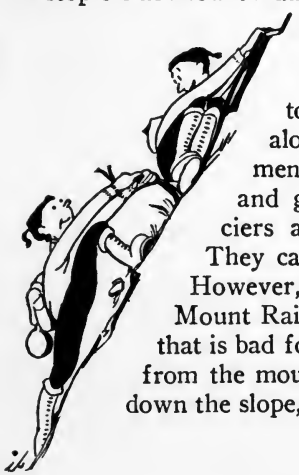
In Yosemite, the whole history of the region from its formation by the ancient upheavals of the earth through the eons of the glacial carvings to its present status, including the living conditions of the Indians, the coming of the whites, and the early stagecoach days, is pictured by means of exhibits in the fine, new fireproof museum, the gift of the Laura Spelman Rockefeller Memorial Foundation. Here in a few hours can be visualized the whole story of Yosemite. Similar museums are to be built in the other parks.

Following the excursion through the museum, the visitor is ready for the walking trips with the ranger naturalists to see and study Nature's notes just as the scientists themselves have found them and from them pieced together what is known of the story of the earth.

Returning, for the moment, to the ranger naturalist and his party at the upper end of Yosemite Valley, one of the party is saying, "I wish I could see a glacier at work!"

"You can do that, ma'am, if you can stay over a few days. Take the trip up to Tuolumne Meadows and join a horseback party up to Lyell Glacier. That is one of our best small living glaciers. It is hardly big enough to tackle a job like carving Yosemite Valley, but it is grinding away at the side of Mount Lyell, the highest peak in the park. You can see the glacier dragging down boulders from the side of the mountain and breaking them up or dumping them into upper Lyell Fork, where the Tuolumne River starts. Of course, you'll have to stay a while up there if you want to see much work done. Lyell Glacier only moves a few feet each summer. If you selected a boulder at the top of the glacier to watch, it would probably take a hundred or so years to get it down to the bottom of the glacier. Glaciers are slow, but they are sure.

"Of course, if you want to see some fast-working glaciers, you might stop off in Mount Rainier National Park. The mountain is farther north and is steeper, also the climate is more severe and much more snow falls in winter. Glaciers move faster because there is more ice behind them to make pressure. Some of those glaciers move along fifty or sixty feet a year. Most of the movement is in the summer time when the ice is cracking and grinding more rapidly. The Mount Rainier glaciers are harder workers than the Yosemite glaciers. They carry so much rock and earth that they are black. However, an industrious glacier has its disadvantages. The Mount Rainier glaciers fill the streams with glacier milk and that is bad for the fishing. You see, the glacier scoops up rocks from the mountain side and scrapes them together as it slides down the slope, grinding them to a fine powder, which the glacier



deposits in the streams. It gives them a gray, milky color and is called glacier milk. Sometimes it is called rock flour. Mount Rainier contains some of the greatest glaciers in the land. You ought to stop off and see that mountain. It's a beauty and one of our most interesting mountains."

"Tell us some more about mountains."

"All right. There are two kinds of mountains, those that are pushed or tilted up, and those that are piled up by successive lava flows from volcanoes. The Sierra Nevada was pushed up. It is tilted, the eastern edge of the uplift being from twelve to fourteen thousand feet above the sea and from five to eight thousand feet above the territory immediately surrounding it. The western edge is buried beneath the silt of the San Joaquin Valley. Its slope on the western side is so gradual that if a highway could be built from the San Joaquin to the summit of Mount Lyell in a direct line, the grade would be but two per cent. Yet the Sierra Nevada is supposed to be a terribly rough and rugged mountain range. It is, as a matter of fact, because of the canyons that have been cut into it by streams and glaciers. On the eastern slope, the tilt is almost perpendicular. It is a formidable barrier. It is explained by scientists that the Sierra Nevada is a single mountain four hundred miles long and eighty miles wide, the biggest mountain in the world. John Muir tells of a terrible earthquake in 1872 which raised the Sierra Nevada thirty-two feet. This was a tremendous upheaval, but you can imagine how puny it must have been compared to the original upheavals which pushed the whole mountain, eighty miles wide and four hundred miles long, out of the earth, making a brand new mountain of solid granite.

"Mount Rainier, on the other hand, is an example of a mountain that was piled up. They say that the whole state of Washington, which Mount Rainier dominates, was a level plain or else it was under the sea. It's hard to tell what was under a mountain originally. A volcano starts blowing out lava and rocks and ashes. It keeps piling up and piling up and piling up some more. I don't know how long. Call it a million years. Finally, Mount Rainier was built up with lava outpourings to a height of almost three miles. Then the volcano quit working. Snow after snow fell on the mountain as it cooled off. It packed into the crater and became ice. The ice expanded and contracted, as the weather changed, cracking off part of the crater. The ice flowed down the mountain side. Surely, ice can flow. It isn't as solid as it looks, and it will flow when there is enough pressure behind it.

"Ever since they started flowing down the sides of Mount Rainier, the glaciers have been grinding down that old mountain. They have probably taken two thousand feet off the top of Mount Rainier in the last million years. In another ten million years there probably won't be much to look at on Mount Rainier. That's what worries the rangers.

But about the only thing that can save the situation is another volcano and the only national park in which we have a steadily working volcano, Mauna Loa, is in the Hawaiian Islands. We have a live volcano in Lassen Volcanic National Park, but it doesn't work very steadily.

"While we are on the subject of mountains, I want to call your attention to Crater Lake. Where the lake now stands, there was once a great mountain which a volcano was piling higher and higher. It finally was piled up so high that it collapsed into itself. The sides of the mountain were not strong enough to sustain the weight of the peak. You never think of a mountain as being hollow, do you? Well, this one was. Mount Mazama, it is called. Nobody ever saw it, of course, because this all happened a million years ago, more or less. It must have been a whopping big mountain, for when that whole peak caved in it left a hole many thousand feet deep. The great depth accounts for the remarkable deep blue color of Crater Lake. A curious feature of Crater Lake is that, though there is no outlet for the water, it is fresh. That is probably because no streams flow into it, the lake being located on a mountain top. Its waters come from rainfall and melting snows that fall into the lake. There is just about enough of this water to counteract the sun's evaporation.

"But we started to talk about mountains, didn't we? It is difficult to stick to the subject. The mountains seem to be connected in some way with everything. Either they supply the water, or the wood, or the coal, or the mineral, or the scenery, or the plants, or the animals. When you stop to think about it, you can understand why we rangers feel there is nothing like the mountains anywhere in the world. And for nice, friendly, busy, obliging mountains, the kind you want to live with day in and day out, there are none like the mountains of the national parks. Every superintendent and every ranger feels that the mountains of his particular park are the best in the world. He would stack his mountains up against any other mountains any day of the year. They might not be so high or so broad or so hard as certain others, but they are superior in some way, and that is what counts."

Build a mountain and then tear it down! That seems to be Nature's whimsical way of working. The Rocky Mountains were once the bottom of a shallow sea. The rangers can take the visitor out in the Yellowstone and show him fossil sea fish and shells. On top of the sea shells he will find a sandstone deposit, the remains of deposits of an ancient lake. On top of that he may

find a forest. The forest may be covered with volcanic mud or ash. Then more sandstone; then gravel, the deposit of a river. In one part of the park they know of twelve forests, buried one on top of the other, volcanic mud deposits between them. Eons passed while these forests were growing, each above the tallest tops of its predecessors.

In Yellowstone are found several of these petrified forest areas. Lava and ashes destroyed the trees, mud covered them up and provided silica, which replaced the wood cells, preserving for all time the grain of the wood. The preservation of the rings of these ancient trees is of the greatest importance in piecing together the story of the earth. For a long time scientists thought that a large, fat ring indicated a moist, warm year, and that a thin ring indicated a year of drought. It is definitely established that these rings do contain the secrets of climatic records in prehistoric years. In the great redwoods of Sequoia and Yosemite parks, some of which have fallen in recent years, naturalists have traced by means of rings the weather records for the past three or four thousand years. Now if they can connect the record of the rings of the sequoias in their ancient youth with that of the petrified big trees in other parks and monuments, it may be possible to trace the weather report back to the time of the Garden of Eden, or beyond.

Nature leaves her notes in unexpected places!

The Carnegie Institution, under that great scientist, teacher, and executive, Dr. John C. Merriam, is conducting extremely interesting investigations of tree rings. Dr. Ellsworth Huntington has traced back climatic conditions for thousands of years already. Other scientists, working with archaeologists and ethnologists, have studied tree rings in wood found in cliff dwellings and other prehistoric structures and have traced human migrations, age of buildings, progress of forgotten people, and other important data.

From the study of the record kept in recent years of the rate of deposit of limestone on the cone of Old Faithful, it has been discovered that it took the geyser at least forty thousand years to build up its cone. Some of the other geysers took much longer. Castle Geyser is estimated to be 250,000 years old. Liberty Cap, that queer cone near Mammoth Hot Springs, took ages to build. No one knows how long it has been extinct, yet for centuries nothing has toppled it over. For all the heat and the weird activity below the earth, the surface has been at rest for many, many years.

Yet it is recorded in the diaries of early hunters and trappers of the Rockies that a volcano was seen to spout brimstone and fire in the Yellowstone area as late as 1811. Unfortunately these early woodsmen kept poor records and the rangers cannot now identify the peak the pioneers saw erupting. Equally unfortunate is the fact that many of these early

mountaineers, finding their stories were considered great lies, made a sporting proposition of it and told whoppers. Jim Bridger told gravely of how his horse walked across a canyon from rim to rim, in mid-air, without descending a foot. He explained this feat by allowing that the force of gravity had become petrified temporarily. Finding that his hearers were as yet unpetrified, he told of finding a petrified forest in which there were petrified birds singing petrified music!

In Yellowstone National Park, because of the variety of the wonders, it has required a widely scattered force of ranger naturalists to answer the questions of the Dudes and the Sagebrushers. Yellowstone Museum, at Mammoth Hot Springs, is the headquarters of the nature-guide service. In it are found mounted examples of some of our bird and animal life, displays of beaver carvings, maps and models illustrating the operation of the geysers and the hot springs, and a fine display of color paintings of Yellowstone wild life, the excellent work of Naturalist E. J. Sawyer. At each of the main campsites in the park are to be found assistant naturalists, some of them regular rangers who have developed a bent for science, some of them naturalists on the force for the specific purpose of answering questions.

Gather around the campfire any summer night and listen to the questions that are asked these ranger naturalists. They run the gamut of the creation and the development of the world, and the resourcefulness the ranger naturalists show in answering some of the hard ones is amazing. Not only have they learned the true answers to most of the questions, but they have also gathered together a fine fund of anecdote and romance with which to enliven their discussions.

"Ranger, where is the mountain of glass?" someone will ask.

"You probably refer to the Obsidian Cliff on the road between Mammoth and Norris Geyser Basin," explains the ranger. "It really is a mountain of black glass thrown up from the interior of the earth by ancient volcanic action. This lava cooled so quickly that it did not crystallize. This hard substance, obsidian, was much prized by the Indians for making arrowheads. Jim Bridger used to tell one of his famous yarns about the Obsidian Cliff. He claimed that when he passed through the valley on which Obsidian Cliff borders, he saw ahead of him a big bull elk. He took careful aim and shot at the animal, which kept on

grazing. Bridger crept closer and fired again. Nothing happened. Three, four, five times he aimed very carefully at the elk and shot, each time creeping closer. He then suddenly found himself face to face with Obsidian Cliff. He had been shooting at the elk, he said, right through the mountain of glass and of course his bullets glanced off the mountain and missed the elk!"

Another curious formation that amazes many people is that of the pentagonal columns which hold up the cliffs on both sides of the Yellowstone River near Tower Falls. These columns are lava that cooled and cracked into remarkably symmetrical geometric figures. There are miles of them and were it not for the many other wonders of the park they would be an outstanding attraction in themselves.

"Ranger, what is the cause of the heat under the park?"

"That is quite a question. The story the geologists tell us is that Yellowstone was once a part of a great shallow sea. There are evidences of fossil shells and sea animals found in parts of the park. The theory is that ages ago there occurred a mighty upheaval of mountain masses, forming the Rockies. This was followed by a long period of volcanic activity. The Yellowstone region included several volcanoes, which, with their lava outpourings, formed the great plateau of the park. Blankets of lava spread out over the area, cooled, were covered with forests. Later, becoming active again, the volcanoes again belched forth, repeating the building-up process.

"The great volcanoes spent their energy, finally, and became quiet, but in many places their furnaces have not yet cooled. They are dying out slowly, but it may take thousands of years for them to cool entirely.

"Why do geysers erupt? Well, you have watched a coffee percolator in action. The geyser works much the same way. The water of geysers and hot springs comes originally from rain and melting snow. Flowing down and coming in contact with lava flows which have but partially cooled, it is heated. The geyser's tube is so long and so narrow that as the water is heated at the bottom it cannot rise to the surface in natural hot springs. Hence it collects at the bottom, the very hot water held down by the pressure of other water on top. Steam is formed below while there is still some water at the upper end of the tube. The steam finally forces its way upward through the water in the tube, emptying the tube through a volcanic eruption. After the steam and hot water are out, the geyser is quiet until enough water and steam gather to repeat the process. In the museum a miniature geyser has been built to illustrate this action."

Everybody wants to know how deep is the fire that heats the water for the geysers. Sometimes the inquiry is made with a note of apprehension in the voice. Authorities can but guess at the answer to this question, but most of them think that the heat is at least a mile below the surface of the earth. In some spots the hot rocks may be even nearer to the surface, so near in fact that vegetation cannot grow. On the other hand, these hot rocks near the surface may be heated by steam from farther down.

"Where is the grasshopper glacier, Ranger?"

Many people have heard of these curiosities, of which there are several in the Yellowstone region. The best-known grasshopper glaciers are in the Beartooth National Forest just outside the northeast corner of Yellowstone. There are countless millions of grasshoppers imbedded in the ice of these glaciers. They have been there for centuries, frozen solid. When the sun melts the ice, the grasshoppers disintegrate and the pools at the base of the walls of ice are dark brown in color from the grasshopper "tobacco juice." How they came to be in these glaciers in such quantities is but surmised. The supposed explanation is that year after year great clouds of grasshoppers, passing like a scourge over these mountains, were caught in snowstorms which forced them down. As the snow froze to ice, the grasshoppers were imbedded in it.

Another mystery that the rangers must clear up often for visitors is that of the "red snow" of the park glaciers. This "red snow" is really not snow at all, but a sort of lichen, scarlet in color, which lives in snow. It is found in several of the parks on glaciers and old snow fields.

Curiosities which rank with the grasshopper glaciers are the nests of ladybug colonies found on the highest peaks of the Sierra Nevada. Climb Mount Lyell in Yosemite National Park at the end of summer, and at the topmost peaks, beneath the rocks, far out of reach of food, you will find millions and millions of ladybugs. Often they are so thick in these mountainous hives that you can scoop them up with your hands.

There are men in California who make a business of going to high Sierra peaks to gather ladybugs by the bag full. They are sold by the pint or quart at fancy prices to farmers and orchardists of the valley, who prize the little bugs for their voracious appetites for certain pests, principally lice, that eat plants and the leaves of trees. But what instinct leads them to fly hundreds of miles to the highest mountains on the continent to pass their winters in zero weather, far from food, is still a mystery.

"Ranger, where is timberline?" That always interests

people. Timberline is something that changes with the latitude. In the Arctic circle, timberline is not far above sea level. At the Equator it is said to be about three miles high. It varies in a very definite ratio between altitude and latitude. One mile straight up in the air is the equivalent of eight hundred miles north or south from the Equator. Of course, exception must be made to the rule to allow for warm or cold currents of the ocean, or other conditions which may change the temperature materially in certain parts of the earth. The angle of a mountain slope is a factor. Timberline is higher on a southern slope which receives the sun's rays than it is on a northern slope which is in the shade.

This can best be illustrated by an unusual condition in Yosemite Valley, where the steep southern wall is constantly in the shade and the north wall is in the sun all winter long. In the valley, the condition of life zones is unique. The south side of the valley is the home of flowers and trees which ordinarily grow a hundred miles or more to the north. The north wall is the home of flowers and trees found far to the south of Yosemite Valley. The equatorial side of the valley is the colder. Incidentally, this condition has given Yosemite Valley a remarkably rich flora and made it the happy hunting ground of the naturalist. To the cold shade of the south wall of Yosemite Valley trees have migrated from the north and from higher altitudes. In the warm sunlight of the north side of the valley, where there is reflected warmth from the cliffs of that side, are found plants which are known to have thrived in regions as far south as Mexico. People enjoy the climate of the north side of the valley as much as the plants do, and they live there in the reflected sunlight and warmth of the valley wall, but they only have to go a short distance into the shadow of the south wall to find arctic conditions, cold snow, winter sports.

Timberline is five hundred feet higher on the south slope of Mount Washburn and other high Yellowstone peaks than it is on the north slope. In Yellowstone, timberline ranges from ninety-five hundred to ten thousand feet. The top of Mount Washburn is in the Arctic-Alpine zone, well above timberline. It is here that one finds the gorgeous gardens of flowers growing right against snow banks. These little plants thrive a while in the intense sunlight unfiltered by the heavy atmosphere of the lower levels. The sun's rays bring them out in gorgeous carpets that blanket the higher peaks of Yellowstone, Rocky Mountain, Glacier, and Rainier National parks.

Life zones are groups of plants and animals living together in agreeable communities. Making a trip from the San Joaquin Valley in California through Sequoia National Park to the summit of Mount Whitney is the equivalent of making a journey from Mexico to the Arctic circle at sea level. As many different kinds of plants and animals would be found on this short trip as on vastly longer trips from south to north.

Most of the national parks, because of their variety of altitude, include several life zones. There are five zones in Yellowstone, for example, reaching from the Alpine zone at the top of Mount Washburn and Electric Peak, through the Sub-Alpine zone, the Hudsonian, the Canadian, and the Transition to the Upper Sonoran zone. These five zones account for the wide range of trees, flowers, birds, and animals in the Yellowstone. Almost equally great is the variety of life zones in many of the other parks, each of which offers a special field of study for the ranger naturalist and his staff before they can answer the questions sure to be put to them by visitors.

"Well, Ranger, how did arctic plants get to Yellowstone from the Arctic circle?"

"That is a question which seems to worry a good many people. Sometimes they ask me if the birds bring the seeds when they migrate. It is very doubtful if they do. The generally accepted explanation is that North America once had a much colder climate than it now enjoys. When the great glaciers spread over the continent, during the Ice Age, the plants of the Arctic circle naturally were pushed south, while the more tropical plants were either killed off or were pushed still farther south. When the ice blanket melted and the climate became warmer, the cold-loving plants in the south died out or slowly crept north, following the glaciers back to the Arctic circle. Some of these plants, instead of migrating northward, worked up the slopes and, having established themselves comfortably on the mountain tops and finding the climate congenial, stayed there when their comrades followed the ice back to the Arctic circle. Other and more tropical plants came in and surrounded these little belts of arctic plants, isolating them on the mountain tops.

"These migrations of the flowers and trees form the most fascinating study in the world, once you get into it. A good place to see the flowers migrating is on Mount Rainier, where the glaciers are still retreating, a few feet each year. Each inch they give up is eagerly swallowed up by the army of the flowers, marching up the mountain side. It is said that

sometime the flowers will swallow up all the mountain side that now belongs to the great ice sheets. Some day, unless there is another ice age, the flowers will capture the mountain."

Of course, present-day Dudes and Sagebrushers will not see the mountain humbled. These migrations of the flowers have taken thousands and thousands of years. In the course of the migrations many species of flowers have been lost entirely. For that matter many new ones have been formed, too, by the flowers and trees adapting themselves to new conditions and climates.

Almost equally interesting is the distribution of animals through the life zones. The migrations of the animals are easier to understand. They are not attached to the earth. They can move about and find new homes quite easily. Yet they were distributed through their zones in much the same manner, each animal following the climate that suited him best. So it is that we find the mountain sheep and the little cony, or rock rabbit, in the Hudsonian and Sub-Alpine zones of all the national parks, isolated from their kind by many miles of warmer climate which they shun and avoid. There are still species of finches and ptarmigan which prefer to raise their young in the rigorous and cold Arctic-Alpine summits of Rocky Mountain and Glacier National parks, close to the glaciers.

"Ranger, why are the colors of these mountain-top flowers so deep and brilliant?"

"Well," answers the ranger, "scientists have never figured that out exactly and we don't know for sure, but a ranger naturalist in one of the parks has ventured the opinion that the reason lies in the fact that there are so few insects on the mountain tops. Insects pollinize the flowers and it would seem natural that they would be attracted to the more brilliantly colored ones, hence these species are pollinized and reproduced, while the poor pale and colorless plants in time disappear or at least are not so numerous as to be conspicuous."

Many are the marvels of life at the snowline! For instance, in many parks little willow trees grow that are only two inches tall. They grow up in the Arctic region, too, and are the winter food of the reindeer. "Red asparagus," or snow plant, is another weird example of life. It is a parasite plant. True flowering plants take their food or manufacture it from the air and water. They have green stems and leaves, green being chlorophyll, an essential to their lives. In the case of the snow plant, it manufactures its food from dead or decayed vegetable matter, hence it does not resemble other plants. It is scarlet in color and to all but close observers its general appearance is that of an unusually large stalk of asparagus, hence the name sometimes used, "red asparagus."

As a general rule, flowering Alpine plants, grasses, and lichens will grow for a thousand feet above the line of the last stunted and gnarled

growths of timber. By the trees and flowers he finds about him, the ranger naturalist who knows the life zones of his park can estimate the altitude of any given locality. In the Sierra Nevada, the Old-Timers can tell the altitude very readily by the combinations of trees, the sugar pine refusing to grow below the six-thousand-foot level, the digger pine refusing to advance above the four-thousand-foot level, the juniper, the Jeffrey pine, and the tamarack each choosing its own small sphere on the generous mountain sides.

There is no more fascinating pastime for the Dude or the Sagebrusher from the city than to join the nature-guide parties in Yosemite, in Yellowstone, or in any of the other national parks, and see how Mother Nature's plans are working out before his own eyes, on the mountain side, where each foot of soil is disputed by a silent and persistent army of plants or trees. A week in the parks with a ranger naturalist with whom to talk things over makes a year with books about these same subjects more fascinating than it could ever be otherwise.

# "Hey, Hiker!"

Hello, hiker, how does it go?
How far to camp—a mile or so?

Just a little way farther,
Just around the next corner,
Just this big hump and another,
Just a mile or two more.

How far is a mile, I'd like to know,
When you're hitting the trail on a tramp?
Oh, a mile is as far as you've yet to go
Till you've hoofed it on into camp.

*—Rhymes of the Rangers*

"Ranger, what's the best time to hit the trail?"

The Old-Timer reflected, recalling many seasons in the mountains.

"Well, it all depends," he surmised, finally. "June's when the trails thaw in these parts. June's when the mountain flowers poke their heads through the snow. Some would say June's the time to hit the trail. But then there's July when the trails are drier and the woods are in full leaf and the snow's all melted except on the north slopes of the peaks. On the other hand, by August the bugs are gone and camping is more comfortable. For myself, I like to hit the trail about September, when the season's over and there's a touch of autumn in the air. You can take your choice."

"What kind of a mountaineer are you?" he asked, as if by afterthought.

"Oh, fair to middling, but nothing wonderful."

"Not what I meant," insisted the Old-Timer. "How do you classify? Club mountaineer, free-lance mountain climber, nature lover, trail rider, or just a plain ordinary hiker? There's all kinds on the trails, you know."

"I didn't know it made any difference, but I guess I'm just a plain hiker."

"It makes a difference in what you're trying to do in the mountains," explained the ranger, "and that has something to do with when you'd best hit the trail. F'r instance . . . ."

He went on to explain that club mountaineers come in bevies, pitch their tents near some

mountain they have adopted for the time being, and camp for a long enough time to give everyone in the party a chance to climb the highest peaks in the region. These expeditions include men and women. The organized climbs must be made when climbing is best, for safety's sake, generally in the middle of the summer, which is about the only time a large party can reach the tips of the highest mountains.

Free-lance mountain climbers are hardy souls who make it a hobby to climb every high mountain they can reach, often under the most difficult circumstances, sometimes in the dead of winter. They seldom bother with camps. They operate singly or in twos and threes against the heights. Since they are experienced mountaineers and know enough to come well equipped, the free-lances are as a rule well able to take care of themselves. They hit the trail any time of year and think nothing of blazing new routes up the peaks.

Nature lovers don't care a hang what is up on top of the mountain. The trail lures them not because it leads to the earth's high spots but because it winds through woods and meadows and dells and across carpets of flowers. The nature lovers are looking for butterflies and animals and wild things that blossom of their own free will. They meander over the trails at leisure, fluttering about some ranger naturalist like so many disciples about an apostle. The flower lovers are on the trails as long as Dame Nature holds open house in the great out-of-doors.

Trail riders are a breed to themselves. The old hands at the sport love the smell of the saddle, and the tenderfoot is thrilled by the adventure of it all. You would think that a narrow ledge, flanked by a high granite wall on the one side and a hundred-foot drop on the other, would be the last place in the world to learn to ride. But the trail ponies know their stuff, and if the trail rider but gives his mount the rein he will follow the guide's horse to the end of the trail. Trail-riding is fun in itself, and the time of year makes not much difference—in fact, they trail-ride the snowdrifts in some parks.

The plain and lowly hiker, with his camera in his hand and perspiration on his brow, outnumbers all the aforementioned gentry of the trails something like four to one. The hikers are the ordinary folks, sick of the sight of old brick walls, longing for a look at the wilderness, hoofing it along the winding path for no other

reason than the fun of it. All the hiker asks is a well-marked trail, leading somewhere at the end of day. All the service he wants is an extra pair of socks, a big bite of lunch, and a camera with which to shoot the stag that stares pop-eyed from the azaleas. The national park trails just fill the bill for the hiker, for he can leave cares behind and be sure of a meal and a bed at the end of the day for almost as little as it costs to stay at home.

"You can rate yourself, brother, and take your choice," concluded the Old-Timer. "I reckon the time for you city fellers to hit the trail is any time you can get away from four walls and a roof."

No one who has tasted the freedom of the trail will argue about that.

Every so often someone bewails what the automobile is doing to the American's ability to walk. Well, it is enabling millions of them to find out where to hike, as a few days on any of the thousands of miles of trails in the national parks or the national forests will prove. The call of the trail is irresistible. Some lingering spark from the days when our ancestors were trail-blazing flares up in each of us once or twice or thrice a year, and there burns the longing for the winding trail that leads now over mountain passes, now through fragrant forests, now by rushing waters or past ramparts of rock. Then a million at a time take to the trail during some months, yet so great is the magic of the wilderness that many multitudes can be swallowed without disturbing its serenity.

The legions of stay-at-homes who know the trail but vicariously, some because of apprehensions of the rigors of the wilderness, some because it is too much work, others because of queer notions of the dangers involved, have some queer ideas about the trail. To answer a few of the questions that are asked of the rangers:

Nope, you don't meet wild Indians in the Western woods any more. You may see some tame ones working on the trails, but they won't molest you.

Yes, you might meet a bear. Just give him a chance and he will amble into the woods. No, you needn't fear wolves, or mountain lions, or tigers, or wild elephants!

Altitude? Yes, it affects some people. Those with weak hearts should avoid trails that lead into the high mountains.

Yes, carry a compass, if you wish, but in the high western mountains you don't need it as much as in the eastern woods, because in the Rockies or the Sierra or the Cascades you can always see some high

peak for a landmark. Yes, sir, the trails are well blazed, with diamond-shaped slashings on trees, and small piles of rocks, known as ducks, and junctions are marked, but it's a fact that some hikers can't read or won't, and some of them do get lost.

Yes, ma'am, women can do it. Thousands of them do hit the national park trails without male escorts. In fact, more women are seen on the park trails than men.

No, you don't need a guide to hike the park trails, but sometimes it adds to the fun to join a party under the leadership of a ranger naturalist, who conducts hiking expeditions without charge.

Guns are out, friend. No shooting, except with a camera. In fact, guns are forbidden in the parks.

Shoes? They're the most important item of your costume. When you hit the trail, the shoes do the hitting all the way. Cheap, poorly made shoes are no economy. Good shoes, with strong soles, are essential. High ones are preferable, large enough so that you can wear two pairs of socks, silk or cotton next to the feet, wool next the shoes.

Clothes? Well, something tough and warm. Khaki knickers stand the gaff. Women as well as men wear them. A light raincoat is useful in occasional showers. A warm woolen sweater is needed for the cool mountain evenings, when the campfire warms only one side of you at a time.

Yes, bring a knapsack, one that rides comfortably on the back. It will hold the raincoat, sweater, the extra pair of socks, the flashlight, the toothbrush, and the lunch. The hands should carry nothing, unless a walking stick.

A camera? By all means. Preferably a small one that straps on the belt or hangs from the shoulder. Bring plenty of films.

A first-aid kit of the Boy Scout type is useful. You probably will never use it, but if you need it at all you need it a lot.

No, speed isn't the thing on the trail. The race is to the tortoise, with the slow but steady "poison oaker" stride. They seem to be just barely moving along, but they keep going while the speed-burners have to rest.

Oh, yes, put in a few ounces of discretion.

Trouble? Forget it, unless trouble troubles you. Then have someone call up the rangers on the nearest trail telephone and they will arrange a "drag out."

The "drag out" is the emergency service maintained day and night by the national park rangers for hikers in distress. Maybe night falls on a hiker who neglected to bring a flashlight. Maybe he loses his nerve on a steep down stretch of the Ledge Trail. Maybe she has missed the trail and is lost. Maybe it's a turned ankle, or a more serious accident.

Maybe it's morning, noon, or past midnight—a ranger is always on duty at headquarters to make the "drag out" if need be. Most of them are unnecessary, but the rangers must always respond to the call for help for the sake of one in ten who actually needs it.

One day the "drag out" call came to headquarters in Sequoia National Park.

"Fat man stuck in a cave," said the voice on the telephone. "Send a ranger—better send two or three rangers."

Arriving at the cave, the rangers found a hiker of great avoirdupois who had left his discretion at home and who had tried to push his way between two great boulders into a cave much visited by hikers in that park. The boulders weighed many tons and could not be budged. Other hikers had pressed their weight against the broad expanse of the fat man's trousers and had tried to push him into the cave, with no luck. Then they tried to pull him out, but failed equally dismally. Two courses lay before the rangers. They could dynamite the rocks and loosen the fat man, but that would destroy a scenic asset and it might injure the prisoner. They could allow him to fast until he reduced sufficiently to be released. The latter course was adopted. It took three days to make that "drag out."

In Yosemite the call for help came from a trail rider. The rangers hurried up the trail and found that a San Francisco sports writer had been riding a mule, when the animal shied at something and jumped, scraping the rider's head on an overhanging boulder. He was scalped as neatly as if a redskin had done it, except that no self-respecting Indian would waste time scalping a bald-headed man like this sports writer. He was a pitiful figure, and was rushed to the hospital, where his scalp was sewn back on his head by the surgeon in attendance. His scalp healed, and shortly thereafter his hair began to grow. Today he boasts the finest locks of any sports writer in San Francisco, which may not be saying much; but anybody wishing to take this cure for baldness may have the man's name on application.

One day last summer three ambitious youngsters from Iowa arrived in Rocky Mountain Park in an old car, and without delay or preparation set out to climb Longs Peak. They reached the peak by late afternoon, and started down by what they thought to be a short cut. The route became increasingly steep and their shoes, without hobnails, slipped on the granite. The lads threw discretion to the wind and two of them tossed their shoes ahead of them, hoping to find them below. One boy stuffed

his shoes inside his shirt and his ounce of judgment undoubtedly saved the lives of all three, for it was but a short time until they were trapped on a narrow ledge, with bruised feet, unable to proceed. The boy with the shoes made his way perilously back to the peak and down the regular trail to call the rangers. It was night when he reached the ranger station. Darkness, broken by lightning storms, delayed the "drag out" until the next day, when the two barefoot boys were found on their precipitous ledge, almost frozen.

Foolhardy recklessness causes practically all of the distress on the trails. Youngsters insist on blazing their own trails, against warnings of old-timers of the mountains. Two youths made their way into the Grand Canyon of the Yellowstone, below the falls, and were unable to climb out up the steep walls. They were seen by another hiker, or they might have been there yet, for no human call for help could carry above the din of the falls. It was one of the most difficult "drag outs" ever accomplished by the national park rangers, and it required many hours, during which the three men who did the rescue work were in constant danger of slipping into the raging torrent below—all because two hikers forgot to pack a little discretion in the old kit bag when they hit the trail for a holiday.

The world's record for "drag outs" is held by the rangers of Grand Canyon National Park, where the approaches to the park are at a high elevation. From the rim of the Canyon trails wind down to the river, and many people undertake the hike down into the Canyon. It is down hill all the way, and as the hiker continues to a lower elevation, respiration becomes unconsciously easier, until by the time the visitor has reached the river, he feels fine and not the least tired and considers himself something of a hiker. Where they drop out is on the way back, up hill all the way, with altitude against them. It is exactly the reverse of the average hike. The "drag out" mules earn their keep at Grand Canyon, and the saying is that, though it's the same identical trail up or down, "it's seven miles down and seventy-seven miles back."

It should be added here that the hiker who keeps himself in trim by frequent walks about his home, who plans his trips and knows where he is going and about how long it will take, who understands his own physical condition and knows what he is equal to, almost never is humiliated by having to submit to a "drag out." The rash ones, the blundering ones, those who start out for a little walk and can never turn back

as long as there is another bend in the trail, are the kind who make work for the "drag out" crew.

Of course, the confirmed hiker is not satisfied to hit the trail once or twice or three times a year when he can get away for a trip into the high mountains. He seeks out kindred spirits in his own neighborhood and together they explore the trails or country roads near by, and the first thing you know a new trail club has been born. The growth of these trail or mountaineering clubs until every city of importance has at least one and sometimes several would indicate that, the automobile to the contrary notwithstanding, Americans are using their legs for other purposes than to step on the gas. Trail clubs are not new to this generation, of course. The forerunner of them all in America, the Appalachian Club, celebrated its golden anniversary not long ago.

When you form a club, you've got to have a purpose, with a capital P, as the politicians say. All these trail clubs that dot the United States felt that need, one by one, as they were born. The ideal purpose for a club, as anybody knows who ever started a club, is to save something. It is a happy circumstance that one and all of the trail clubs, looking about, settled upon some bit of wilderness to save. Each club adopted a mountain and mothered it, as it were, with all of its glaciers, forests, streams, and meadows. Thus it has come about that most of the more worth-while mountains of the land have been adopted and saved for posterity. There are those who don't belong to any trail club and who think that the mountains might have been saved anyway, but this is a matter of doubt and there is no questioning the fact that the various mountaineering and trail clubs have played an important part in crystallizing public sentiment so that much of our wonderful wilderness could be saved from civilization before it was too late.

When the Appalachian Club was formed half a century ago by a handful of trail enthusiasts in Boston, it seemed as if the wilderness known as the West never could be swallowed up. Yet within a man's lifetime that almost happened. The Appalachians first turned their attention to the White Mountains, which were then an impenetrable wilderness known to but a few trappers and timber prospectors. The Appalachians mapped the White Mountains and found no connected trail system by which they could tramp for days on end, though there were many short trails leading off from resorts or stations. It was then that the idea of the "Long, Long Trail" was evolved.

The Appalachians, being both naïve and enthusiastic, dug down into their own pockets to pay for the building of a considerable number of connecting trails, joining the short by-paths of the White Mountains into more extensive routes. The public liked the idea and soon many feet were plodding over the trails that were built for the discriminating

few. After that the Appalachians, and the trail clubs that were to follow, concluded that the way to build trails was to have the state or the national government do it. The trail clubs concentrated their activities upon the erection of camps and shelters and upon focusing public attention on the recreational possibilities of publicly built trails.

Today the Appalachian Club numbers its members by more than four thousand. It has a notable clubhouse in Boston and chapters in New York and several other eastern cities. Its leaders conduct weekly walking trips in the country about these population centers and head annual expeditions into the more remote wilderness. The club operates a chain of lodges and camps along the main trails of New England, capable of accommodating several hundred members each night. It was sponsor of a trail conference at which representatives of state governments and of trail clubs met and planned a great interstate continuous trail system extending from Georgia up the backbone of the eastern mountain range all the way to the northernmost tip of Maine. When this system of trails is connected, the eastern hiker can hit the trail anywhere along the "Long, Long Trail" and keep going for weeks on end without leaving the wilderness, yet all the time be within a hundred miles of a metropolis.

After the Appalachians had demonstrated what trails could do for the White Mountains, a group of trail lovers in Rutland, Vermont, assembled, organized, and adopted the Green Mountains as their particular orphan. The goal of the Green Mountain Club was the building of two hundred miles of trails in their mountains. This was achieved and met with such general approval that the club grew into a widespread organization with chapters in half a dozen cities, including New York, which strangely enough, is more or less a hot-bed of trail clubs. It is the headquarters of the Tramp and Trail Club, the Inkowa Club, the Fresh Air Club, the Wild Life Council, the Camp Fire Club, the Boone and Crockett Club, and various other similar societies.

When it comes to doing something big, the Boy Scout badge goes to the Sierra Club of California. Casting about for some bit of wilderness to which to be big brother and big sister, this trail society, founded in 1892 under the leadership of John Muir, the noted naturalist and sage of the mountains, adopted the biggest mountain in the world, the Sierra Nevada. According to scientists, there are only two kinds of mountains on this earth, those that are piled up by volcanoes and those that are pushed up by Nature through eons of internal earthly convulsion. The Sierra Nevada is one of the latter, being a great block of granite four hundred miles long and almost a hundred miles wide, pushed out of the earth until its crest averages an altitude of more than two miles above sea level. As if size were not enough, this giant mountain is head-

quarters for numerous living glaciers, the world's oldest and largest trees, the highest waterfalls, and the tallest peak in the United States. Next to this peak, strangely enough, lies the country's lowest region, Death Valley, four hundred feet below sea level.

It goes without saying that looking after this vast area has kept the club busy. At least once each year the club pitches its official tent as near the timberline as possible, somewhere along the long John Muir Trail skirting the skyline of the Sierra, and literally hundreds of Sierrans, men and women alike, undertake personal inspections of the great Sierra peaks. It is the practice of the Sierrans to do things right, which can be interpreted as meaning that when the commissary pack train pitches camp there is plenty of food and blankets for an army of trail trekkers. The Sierrans hold that camp comfort adds to the joy of mountain climbing. It likewise is the practice of this organization to scour California for the best camp cook in the world, it being assumed that this dignitary will be found somewhere in that fair state, and his presence adds to the zest of mountaineering.

This annual outing of the Sierra Club is a momentous affair, and the Sierrans take no chance of being incapacitated. To keep fit for the big hike each summer, they organize trail trips each week-end from San Francisco and Los Angeles, into the near-by mountains with which those favored cities are blessed. For all its enormous size, there probably is no mountain in the world so well explored, so thoroughly trailed, and so easily accessible as the Sierra Nevada. Six months of the year its higher regions are locked in the arms of winter, but during the arid California summers Sierra trails are dry and safe and the atmosphere is perfect for hiking. Four great national parks, Sequoia, Yosemite, General Grant, and Lassen, lie in this fastness, and half a dozen national forests. All are centers for expeditions each summer.

You've heard of the Mazamas. Well, they live in Oregon. Their name they share with a mythical mountain said by geologists to have been the highest in the United States. It stood sixteen thousand feet high at one time, and belched forth from its volcano until so much of its interior had been blown out that the whole peak caved in, forming what is now Crater Lake. Too late the Mazamas organized to protect this mountain. It is a matter of opinion what they might have done about it had they been on the job at the time. Nevertheless, they are the patrons of the defunct mountain and the more practical minded of the Mazamas have turned their attention to Mount Hood, not so high but probably as beautiful—at least to the eyes of a Mazama. Every time some engineer proposes to build an incline up Mount Hood, the Mazamas set up a terrific protest, with the result that all such ideas have failed. Mount Hood is reserved for those who travel by trail,

as the Mazamas do, not only on its slopes, but in the verdant forests of Oregon.

The trail devotees of Washington found themselves well supplied with noble mountains, what with Rainier, Olympus, Baker, and others. Their society is called the Mountaineers, with headquarters in Seattle and chapters in Tacoma and Everett, while on the other side of the Cascades they are assisted in mothering the mountains by the Mountain Club of Spokane, independent but devoted to the same forests and trails.

There are numerous other trail clubs, each active in its sphere. The largest of the Rocky Mountain trail clubs is the Colorado Mountain Club, with headquarters in Denver. The annual summer outings of this club are spent high on the trails of Yellowstone, Glacier, or Rocky Mountain National parks. The winter outings of the Colorado Mountain Club are held at Fern Lake in Rocky Mountain National Park, where for several days each February its members revel in snow sports at zero temperatures.

Nor is it necessary to have near-by mountains to adopt to justify a trail club. Chicago has a Prairie Club, with many hundreds of members, devoted to the cause of saving a little of the wilderness in the Great Lakes region. The Prairie Club turns to both the Rocky Mountains and the Appalachians for annual outings on the trails. The Pennsylvania Alpine Club, with chapters in several cities, musters several thousand trail enthusiasts pledged to the protection of the forests, the mountains, and the wild birds and animals of that state. And there are numerous other societies, among them the Izaak Walton League, the rolls of which include the names of 150,000 fishermen, hunters, and lovers of the out-of-doors interested in the conservation of the wilderness.

# The Story of the National Park Service

The national park idea was born in 1870 around a campfire near the junction of the Firehole and the Gibbon rivers in what is now Yellowstone National Park. At that time, Yellowstone was a wilderness more popularly known as "Colter's Hell," so named from the stories told about the area by the intrepid trapper and hunter, John Colter. The remarkable features of the Yellowstone were first described by David E. Folsom and C. W. Cook of Montana, who explored part of what is now the park in 1869.

It was in 1870 that the now famous Washburn-Langford exploring party, assisted by Lieutenant Gustavus C. Doane and five cavalrymen, undertook the complete exploration of the Yellowstone. The party consisted of General H. D. Washburn, commander; Samuel T. Hauser, Cornelius Hedges, W. C. Gillette, Walter Trumbull, Truman C. Everts, Benjamin Stickney, Jacob Smith, and N. P. Langford, all residents of Helena, Montana, then a frontier settlement.

This party was tremendously impressed with the geysers, the hot springs, the boiling mud pots, the lake, the canyon, and the waterfalls, and because one of their number, Truman C. Everts, became lost, the explorers lingered long in the vicinity of Yellowstone Lake, hoping to find Everts. Giving him up as lost (he was later found by searchers after enduring almost unbelievable hardships), the party pushed on toward Virginia City, Montana, hoping to avoid the early snowfall. The birth of the national park idea has been described by Nathaniel P. Langford, who afterward served as first superintendent of the park.

"It was the first camp we made after leaving the lower geyser basin," he wrote. "We were seated around the campfire, and one of our number suggested that a quarter-section of land opposite the great falls of the Yellowstone would be a source of profit to its owner. Another member of the party thought that the upper geyser basin would furnish greater attraction for pleasure seekers.

"Mr. Hedges then said that there ought to be no private ownership of any portion of that region, but that the whole of it ought to be set apart as a great national park. The suggestion met with a quick and favorable response from other members of the party, and, to quote from a recent letter of Mr. Hedges to me, 'The idea found favor with all, and from that time we never lost sight of it.'

"On our return, Mr. Hedges advocated the project in the public press. . . . . All this was several months prior to any government exploration."

Less than two years later, on March 1, 1872, Congress created Yellowstone National Park, setting aside an area approximately 62 miles long and 54 miles wide, consisting of 3,348 square miles, or 2,142,720 acres, "for the benefit and enjoyment of the people forever."

It is true that the area which is now Hot Springs National Park had been set aside for the public benefit forty years before, but a national park was not created at that time. Likewise, in 1864 Congress had passed an act turning over to the state of California the areas that are in Yosemite Valley and the Mariposa Grove of Big Trees, but the Yosemite National Park was not created until 1890 when another act of Congress set aside the great area of high mountain peaks, glaciers, forests, valleys, and waterfalls of the Sierra Nevada, approximately the present area of Yosemite Park. Curiously enough, by that time the federal government had lost control of Yosemite Valley and the Mariposa Grove of Big Trees, the two outstanding attractions of Yosemite Park. They had been ceded to the state and were administered by state officials. This division led to many disputes, culminating in a disagreement over which group of authorities should fight a forest fire on the wall of Yosemite Valley halfway between Yosemite Valley, the state's domain, and the rim, under control of federal authorities. While the dispute continued, the fire raged, doing considerable damage, and rousing public indignation. This led to the popular demand for one authority in Yosemite, and in 1906 the state ceded the valley back to the federal government.

Sequoia and General Grant National parks were established by Congress in 1890 to preserve the choice groves of big trees, among them the General Sherman Tree, generally conceded to be the largest in the world. Mount Rainier National Park was formed in 1899, Crater Lake in 1902, Platt Park in 1903, Wind Cave in 1903, Sullys Hill in 1904, Mesa Verde in 1906, Glacier Park in 1910, Rocky Mountain in 1915, Hawaii and Lassen Volcanic parks in 1916, Mount McKinley in 1917, and Grand Canyon, Lafayette (now Acadia), and Zion in 1919. Bryce Canyon became a national park in September, 1928, and Grand Teton National Park was established on February 26, 1929. The other proposed national parks, indorsed by the National Park Service, include the National Park of the Cliff Cities in New Mexico, the Great Smoky National Park in North Carolina and Tennessee, and the Shenandoah Park in western Virginia. A Redwood National Park in northern California is also a possibility, although the redwood park areas may all be preserved as part of the California state park system. As a general policy, the National Park Service encourages and assists state authorities in any way possible in the development of state parks, though the federal government has no jurisdiction over them.

It will be seen that in the early days national parks were created from time to time by Congress without any particular policy governing their establishment. Some of the parks were established as a part of local activities of the states. It was many years before the idea evolved that the greatest of these scenic wonders should be gathered together by the federal government under one management guided by a broad policy. There was no bureau in Washington to govern the parks according to a comprehensive plan and policy until 1916. Previous to that time the parks were looked after by the Secretary of the Interior as a part of the miscellaneous activities of his department. To keep order in the parks, the Secretary of the Interior called upon the War Department for troops, which were stationed in Yellowstone, Yosemite, General Grant, and Sequoia parks each summer.

In the parks where the troops were on patrol, the acting superintendent was a military officer, usually changed each year. He reported to the Secretary of the Interior as well as to the War Department. In Yellowstone there was still further division of authority in that all improvements were under the army engineering corps and of course no engineer officer would be required to report to the superintendent, who was a cavalry officer. Consequently, there were times when the park roads were not available to the public because the engineers would not take instructions from the superintendent who was chiefly responsible for provisions for the traveling public. On the other hand, it is only fair to say that there were some remarkably able army officers in charge of the parks from time to time, men deeply interested in their work and eager to render every possible service to the public.

A superintendent who deserves special mention was Nathaniel P. Langford, who had charge of Yellowstone during the first five years after the creation of the park. Mr. Langford not only served without remuneration, but paid all his own expenses as well. He had no assistance and lacked adequate authority, and in his constant struggle to protect the park from depredations he had little to aid him except persuasion and discussion. Yet he was able to do much to protect the park in those early days and kept visitors from carrying away valuable exhibits.

In parks not placed under military control, the superintendents were often political appointees, chosen because of favors to their parties rather than because of particular qualification for their work. Fortunately, some of these men were very good executives. In some cases, they made miserable failures of their tasks of preserving the park wonders for the future. Appropriations were small, and with the exception of the Yellowstone, Crater Lake, and Mount Rainier National parks, where road systems were built by the army engineers, very little

road building was done at all. There was little money for the maintenance and protection of the parks. In the early days, following Mr. Langford's administration and preceding the coming of the military, protectors of the Yellowstone received little compensation and their earnings came principally from dividing fines and fees with justices of the peace who were appointed for the territories in which the park lay. This system was particularly vicious because the visitors to the parks were harassed and fined for minor infractions of the rules or for no breach of conduct at all, in order that the justice of the peace and the arresting officer might increase their incomes.

The politicians who followed the public-spirited Langford and his successor, Colonel P. W. Norris, in Yellowstone, were so careless and inefficient in the performance of their duties that employment of troops was necessary to preserve the park from despoliation. Fort Yellowstone was built at Mammoth Hot Springs, not so much to combat redskins, as was commonly supposed, as to keep the "white Indians," the grafters, and exploiters out of the nation's playground.

When Yosemite and Sequoia parks were created in 1890, troops were assigned to them at once. These parks never had civilian administrations the year around until 1914, when troops were removed and National Park Service officials assumed their duties. In Yellowstone, the cavalry stayed until 1918; likewise the army engineers.

As a rule, it took from three to seven years after the creation of a national park before funds for its care and upkeep were provided, and up to 1910 there was little that a non-military park superintendent could do. In that year, following the formation of Glacier National Park, the American Civic Association, led by its vigorous and able president, Dr. J. Horace McFarland, who had carefully watched the growth of the national park idea for years, launched a campaign for the creation of a national park bureau. The Secretary of the Interior, Walter L. Fisher, and President Taft himself, urged Congress to set up a central bureau for the administration of the parks. The President sent a special message to Congress on the subject. Senator Reed Smoot of Utah and Congressman John E. Raker of California introduced identical bills in the Senate and the House creating such a bureau.

That was the situation when Franklin K. Lane became Secretary of the Interior in 1913 upon the inauguration of President Wilson. The parks were the orphans of the federal government. They were nobody's charge and anybody's worry. Officials looked after them in odd moments as best they could. Fortunately, in spite of the many political wires pulled for the private exploitation of the parks, the various secretaries and their assistants frowned upon all commercial development, thus establishing a precedent and a policy. Credit for this

goes largely to W. B. Acker, chief clerk of the Department of the Interior and an able official and astute attorney.

In 1913, Secretary Lane called Dr. Adolph C. Miller of the University of California to become his assistant, devoting his particular attention to the national parks. However, he was soon drafted by the President to work on banking problems and Secretary Lane was again looking for a man to adopt the national parks. This time he called upon his old college friend, Stephen T. Mather, a Californian, living at the time in Illinois, a man familiar with the great out-of-doors and the West, and a lover of the mountains. Mr. Mather became assistant secretary, and when by Act of Congress of August 25, 1916, the National Park Service was established, he became the first director. Mr. Mather held that position until January 12, 1929, under three administrations, two of them Republican and one Democratic, serving under five different secretaries of the Department of the Interior.

The act creating the National Park Service gave its officers authority to "promote and regulate the federal areas known as the national parks, monuments, and reservations," and enunciated the fundamental purpose of the parks: "To conserve the scenery and the natural and historic objects and the wild life therein, and to provide for the enjoyment of the same in such manner and by such means as will leave them unimpaired for the enjoyment of future generations."

Those were broad and comprehensive powers. Exercising them, however, was another matter. For years private interests had advanced schemes for the commercialization of the parks, the using of park lands for cattle and sheep grazing, the diversion of waters for irrigation and power, the invasion of the mountains by ugly mining shafts. One of these schemes was successful, the plan of the city of San Francisco to dam the Hetch Hetchy Valley, a miniature Yosemite, flooding the valley with a lake. Another persistent proposal was the draining of water from Yellowstone Lake for power purposes and the elimination of parts of the southwestern area of the park for reservoir sites.

The first job of the new National Park Service was to save the parks from the exploitation schemes already undertaken. In the case of Hetch Hetchy, the building of the dam was already authorized by Congress, and nothing could be done. Under Mr. Mather's administration the National Park Service has taken the position that if the natural features of a park are sufficiently important and valuable to be placed within a national park by an act of Congress, they should forever remain there, regardless of their value from a commercial point of view, and if they are not of national park caliber, they should be eliminated from the park by appropriate legislation. The National Park Service has opposed the creation of parks in certain areas because they did not

measure up to the standard of the other parks. Likewise, the service hopes to see certain areas added to some of the parks, notably a section of the Kings country bordering on Sequoia National Park, Mount Banner and Mount Ritter, The Devil Postpile, and Thousand Island Lake southeast of Yosemite Park, the Never Summer Range and the glaciers and peaks south of Rocky Mountain Park, and possibly a section of fine California coast redwoods to preserve the primeval splendor of these great trees. Since most of these areas are now federal lands, their addition to the parks involves merely transfer from one government department to another.

The National Park Service since its establishment has never had any political standing. Appointments are made on a merit basis, in accordance with civil service rules and regulations. Even the director is a civil service employe. Secretaries of the Interior, since the creation of the park service, have taken so great an interest in its development and welfare that they have resisted efforts to inject politics into the handling of the parks or the appointment of park officials.

It is the policy of the National Park Service to keep its organization small. It has no ambition to be the biggest bureau in the government service. It does not seek to build up a corps of experts in every activity which touches national park operations. It has a small engineering organization for planning purposes and to execute certain lines of construction. It has a landscape engineering department which supervises all building plans, approves plans and layouts for hotel and other concessioner developments, and has charge of all planting work, modification of scenic areas through installation of roads, trails, and telephone lines. It has an educational division which supervises the work of interpreting the parks to their visitors, has general oversight of museums, natural history activities, research, and so on. For all specialized scientific service, the National Park Service calls on other bureaus. For insect control work in the forests, the Bureau of Entomology is our adviser. Road construction is under the Bureau of Public Roads. The United States Public Health Service designs all water and sewer systems and oversees their construction. It also keeps a sharp oversight of conditions of health in the parks, but at our request. The parks are exceptionally healthy places and epidemics are almost unknown. Streams and lakes are stocked with fish through co-operation with the Bureau of Fisheries. The Biological Survey, the Geological Survey, the Forest Service, are other bureaus that co-operate closely with us.

The administration of some of the parks is complicated by the fact that before they were established as parks, private and state holdings existed in them. For example, in Yosemite National Park there are large timber and land holdings. Many of these grants have been bought

up, or the owners have been persuaded to exchange their lands for other public lands. Some have refused to do this. In Yosemite, and in Glacier, too, the National Park Service is exchanging timber away from the roads for important stands held by the private timber companies along the roads leading into the parks. The park service has been much criticized for permitting the cutting of timber in Yosemite. As a matter of fact, there is nothing the service can do about it. The timber came into the hands of the private owners before the national park was created. The best the service can do is to trade timber in remote areas for timber that borders on the roads, so that the visitor will not have to pass through barren areas of cut-over forests en route to Yosemite Valley.

Practically every one of the national parks except Yellowstone has the problem of private holdings with which to contend. In some of the parks the holdings are in remote places where they do not interfere with park operations. Others, such as Rocky Mountain, Yosemite, Glacier, and Hawaii National parks, are invaded by relatively large holdings. In 1927 Congress appropriated a fund of $50,000 to be used in the purchase of private lands within the parks, provided that in such acquisitions the government funds were matched dollar for dollar with funds privately contributed. This policy of appropriation, if continued, will result in practically all private holdings in the national parks being returned to the public.

In some of the parks, proposed revisions of the park boundaries will eliminate many private holdings. Revision of the Rocky Mountain Park line has eliminated already more than eighteen thousand acres. When such revision can be accomplished without losing important features, or without complicating park operations, it is the policy of the service to make the change.

A similar condition in Yosemite obtained with respect to roads. Prior to the creation of the National Park Service, all of the roads built into Yosemite Valley were privately constructed and owned. The Wawona Road was constructed by a turnpike company which at first transported passengers by horseback, then by horse-drawn stage, and finally by automobile. One of the first problems of the new park service was to persuade this company to turn the road over to the public in exchange for a grant for the exclusive use of the road for stagecoaches during a certain number of years under government maintenance.

An even more interesting situation prevailed with respect to the Tioga Pass Road, one of the most spectacular scenic drives in any of the parks. This road was built by a mining company across the heart of territory that is now Yosemite Park, before the creation of the park service. Fortunately, the mines did not pay and they were abandoned.

The company still owned the road. Government funds were lacking to purchase it, and Director Mather, with some friends, bought it privately and deeded it to the federal government, thus providing Yosemite with a route into the high Sierra country.

In Grand Canyon there have been some delicate administrative problems that have hampered the superintendents and the rangers in their efforts to serve the public. Most of them arose from private ownership of holdings in the park. Local Arizona politicians, through control of affairs in a county adjoining Grand Canyon National Park, tried to block government access to the Bright Angel Trail, the main route into the Grand Canyon. It was this situation which roused President Roosevelt to declare the Grand Canyon a national monument in 1908. That checked privateering, and in 1919 Congress made the area a national park. However, it was not until 1926 that the last mining claim was canceled by the courts, after it was proved that minerals did not exist in sufficient quantities to justify the claims.

In the meantime, other trails have been built into the Grand Canyon, and the original offer of the federal government to the county in question has been reopened; namely, that in exchange for government ownership of the Bright Angel Trail the United States will build an approved approach road to the park through that county. Sometimes it is impossible to "do business" with the local owners of roads and trails. The instance of the Coulterville Road into Yosemite Valley is an interesting example. Failing in their efforts to persuade the owners of this road to make it public property, the park superintendent ceased to maintain the road within the park. The public traveled the roads which were improved and kept up. Today the Coulterville Road has almost reverted to Nature.

In one corner of Yosemite Park an old privately owned homestead has been cut up into summer homesites and put on the market. Fortunately, it is so located that it does not interfere with the activities of the park. But, unfortunately for the victims, many of whom undoubtedly buy lots in Yosemite expecting to be within sight of Yosemite Falls, the mere fact that this homestead is within the boundaries leads "suckers" to believe that the enterprise has government approval. Quite the reverse is true and the public should realize that any scheme to exploit lands within the parks has strong government disapproval upon it.

Before the boundaries of Rocky Mountain National Park were revised, visitors often were obliged to go miles to find a place to camp, for the reason that the roads ran through private lands plastered with "No Trespassing" signs. This often stirred Sagebrushers to anger and criticism of the National Park Service. Of course, this situation was

inherited by the service when Rocky Mountain Park was created, and as soon as funds were available private lands were purchased to make public campsites.

It is the policy of the Department of the Interior to secure, whenever possible, the exclusive jurisdiction of national park territory for the federal government. Yellowstone Park, being older than the states in which it lies, has been completely under jurisdiction of federal authorities. The same is true in Hawaii and Alaska. In the other parks, the states have certain civil and criminal jurisdiction, though some of them have ceded this authority to the federal government, withholding only the right to tax private property and sometimes to collect fishing license fees. Some states, notably Arizona and Utah, have thus far not given up jurisdiction, thus compelling the park service rangers to go about the protection of park property just as a private property owner would remove a trespasser from his own home. This complicates administration somewhat and is one of the problems that remains to be smoothed out by federal and local officials.

It is the policy of the National Park Service to keep vast areas of the parks in an absolutely natural condition, and for that reason road-building plans contemplate making accessible only the most unusual and distinctive features of the parks. As a rule, one main highway across a park is enough, and as a matter of fact to build one such highway according to modern standards will take all funds available for many years to come. To care for the enormous number of Sagebrushers who come to the parks each year, it is necessary to hard-surface all roads and make them dustproof, else the beauties of the parks are destroyed by those who want to enjoy them.

Leading off from the roads are trails over which the wilderness lover can find the solitude he craves. Some sections of the parks are denied even to the trail rider. They are remote areas reserved for Nature exclusively and for future scientific study. About the only wilderness areas remaining in the United States are found in the national parks. Vast areas, including more than half of the territory of the parks, are so far off the beaten paths that they are visited by but few parties a year. It is hoped that they will never become civilized, even when the airplane makes all spots of the earth accessible, that they will remain as wild, as unblazed and untouched as were the mountains of the West when Jim Bridger and Kit Carson and other pioneer scouts first pushed into them.

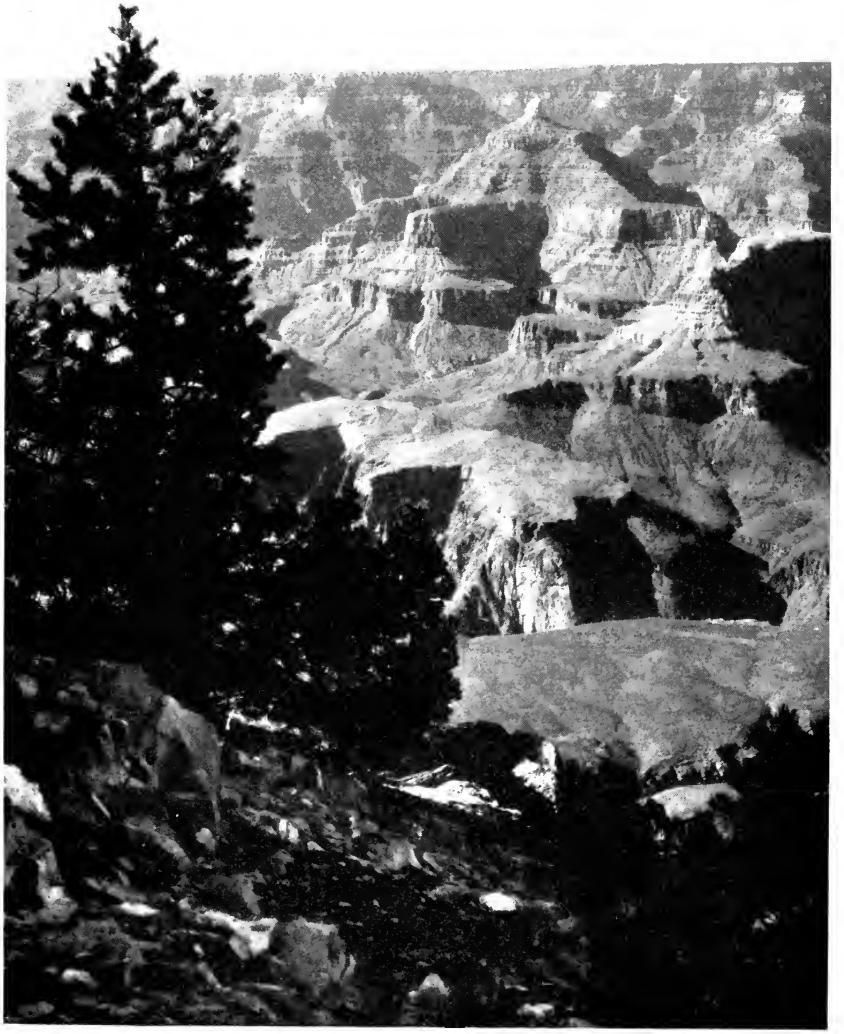
The northern half of Yosemite Park is a wilderness area of more than a quarter of a million acres. Nearly all of Glacier Park, fully two-thirds of Yellowstone's great area, the vast Kern River extension of Sequoia Park, are all untouched, unblazed wilderness. The same is true

of much of the Grand Canyon below the rims, that part of Zion above and beyond the rims, a very large part of Rocky Mountain Park, and over three-fourths of Mount Rainier Park. All these areas are accessible only to the person who so sincerely desires to get away from civilization that he will ride the trails for days on end with only guides, wild animals, mountain peaks, turbulent rivers, forests, and glaciers for company. In the vast areas colloquially known among the rangers as "the back country," the nature lover can find solitude enough. This is the realm of Nature. It will never be touched by the road builder, it will never hear the thrum of the motor, if the wishes of the National Park Service officials are respected.

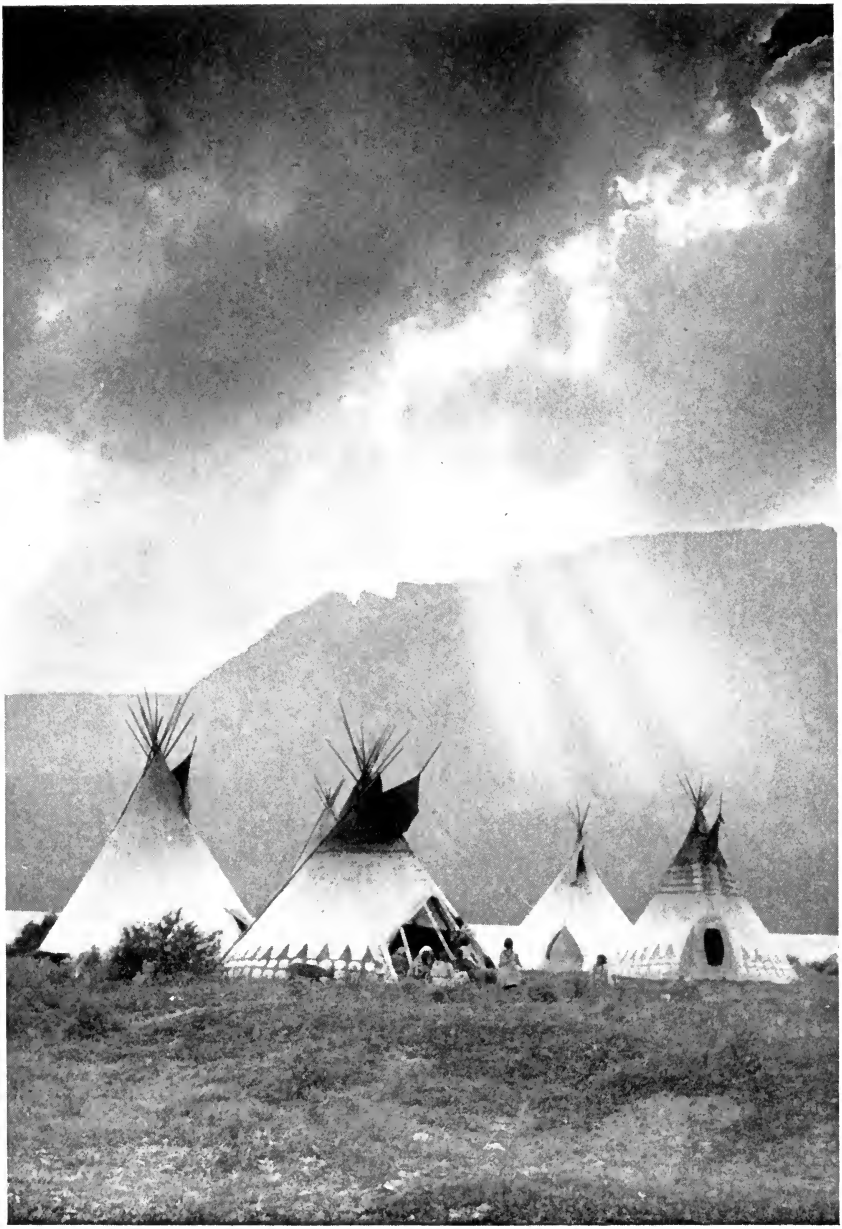
Of course, it is necessary that there be housing and transportation facilities in order that the parks may be visited and enjoyed by the public. In the earliest acts of Congress relating to the parks, provision was made for the granting of concessions under franchise for private concerns to erect hotels, transportation lines, and other service facilities. This policy, still fixed by Congress, continues. The Secretary of the Interior is authorized to grant franchises for terms not exceeding twenty years for the construction and operation of facilities in the parks. The secretary approves the franchises, which are specific grants of privileges to be exercised within the park boundaries. These privileges must be exercised in accordance with the law and the rules and regulations governing the parks. Service must be rendered according to standards laid down by the secretary and his representatives and at rates prescribed by the secretary.

It is the policy of the secretary not to grant more than one franchise for the furnishing of a certain type of service as long as the service rendered is in accordance with the standards laid down by him. If any extensions of service are necessary, the secretary calls upon his franchise holder to furnish the additional service. If the operator refuses to comply, the secretary may cancel the franchise or he may let another operator furnish the needed service. In other words, the franchise holder has the preferential right to furnish additional service when need arises. The franchises are not monopolistic or exclusive and the secretary never at any time ties his hands in such a way as to make impossible the granting of new privileges, should they be necessary in order to furnish adequate facilities or to meet new demands of the public.

In the early days of the parks, no one was able to furnish sufficient capital to build hotels and to establish transportation lines except the railroads. In the case of several of the parks, all of the early facilities were established by interested railroads in order that they might offer proper accommodations for their passengers. Even today this condition

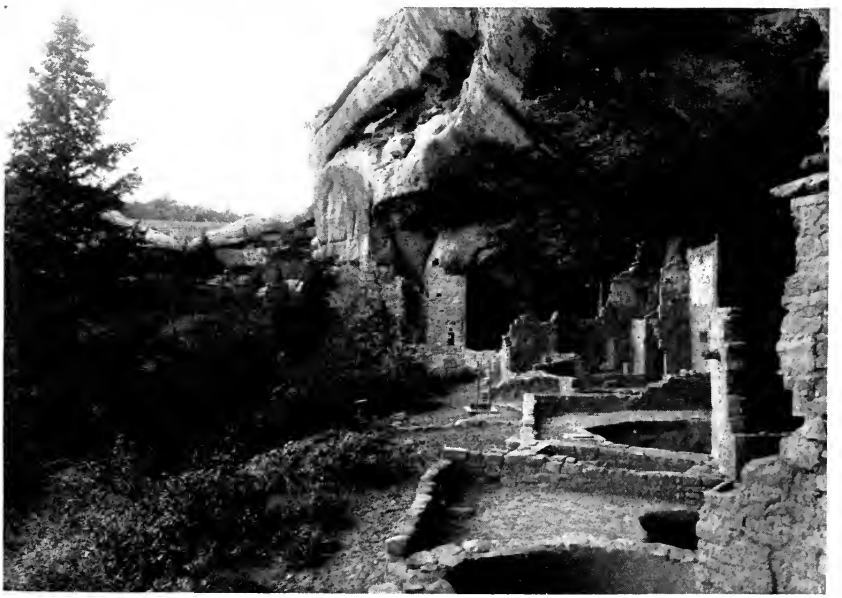


*Looking north from Yavapai Point in Grand Canyon National Park*

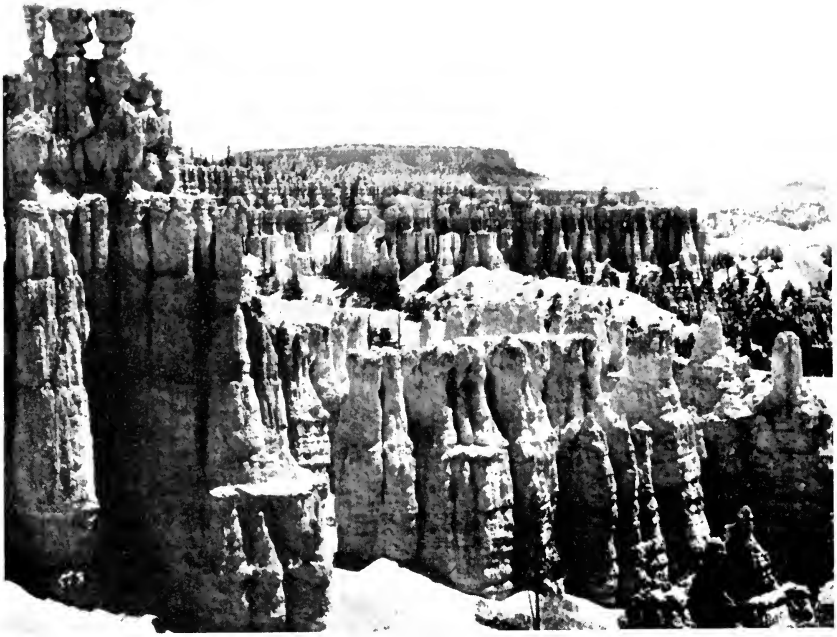


*A Blackfoot Indian camp on the shore of St. Mary Lake, Glacier National Park*

*Hopi House reproduced at Grand Canyon*



*Spruce Tree House, Mesa Verde National Park*



*Temple of Osiris, Bryce Canyon National Park*

*Lassen Peak, Lassen Volcanic National Park*

still prevails in some of the parks, notably Zion and Bryce Canyon National parks and the North Rim of the Grand Canyon, where the Union Pacific has financed improvements valued at two million dollars, and the South Rim of the Grand Canyon, where the Santa Fe Railroad and Fred Harvey have constructed facilities at the cost of several million dollars. Also in Glacier Park the Great Northern built a magnificent chain of hotels and chalets. In Yellowstone, the hotels were built originally by the Northern Pacific Railroad. Later they were taken over by another company, which operates both the chain of hotels and the extensive motor transportation system. In Mount Rainier National Park the hotel was originally financed by the Chicago, Milwaukee & St. Paul Railroad, and later was taken over by a group of citizens of Seattle and Tacoma, interested in developing travel to the Northwest. Public-spirited citizens of Portland financed the establishment of facilities in Crater Lake Park.

In Yosemite the history of the operators in the park has been a varied and an interesting one. The first inns in the valley were little more than bars, and greater emphasis was laid on this phase of hospitality than on comforts. Californians were quick to appreciate the business possibilities of travel, even in the early days, and within three years after the first party of tourists, led by J. M. Hutchings, visited Yosemite Valley in 1855 two inns had been built in the wilderness. The first of these was a saloon, built in the fall of 1856, to accommodate those early travelers who demanded their whisky and their game of cards even in the shadow of El Capitan. The next year it became apparent that visitors wanted to eat as well as to drink in Yosemite, and the restaurant feature was added as an afterthought. This building later became Black's Hotel, famed mainly as the home of John Muir after his rupture with Hutchings.

The second of these inns was a blue canvas structure erected by a man named Beardsley and later torn down to make way for a wooden structure which Hutchings bought. For years Hutchings' House was one of the landmarks of Yosemite and one of California's famous hostelries. It achieved its personality more through the geniality of its host than because of its comforts, which were notoriously lacking. For some time Hutchings' House consisted of two rooms, one upstairs, one down. The women were herded upstairs to sleep. The men stayed down. Visiting notables, often nobles from abroad, slept side by side with nobodies from anywhere. Later, Hutchings improvised rooms of paper walls, with curtains for doors, and gentlemen were allowed to sleep with their wives in Hutchings' House, though even whispers were heard all through the house and the shadows made lively pantomimes on the

partitions. These little discomforts, for the most part, were taken good-naturedly by the guests and laughed off as the shortcomings of a host who recited poetry as he served breakfast in the morning.

A part of the old Hutchings' House still stands, near the Sentinel Hotel, known today as Cedar Cottage. Another old inn, popular in its day, was Leidig's Hotel at the foot of Sentinel Rock. The old Stoneman House was built by the state of California to attract visitors to the leading wonder of the Golden State. It was destroyed by fire. Another picturesque inn was Snow's House at the foot of Nevada Falls, crude in its accommodations but warm in its hospitality. Another show place was John Smith's Cosmopolitan House, a place of simple exterior, but equipped with a barber shop, a pool hall, a writing-room, and—wonder of wonders—bathtubs with hot and cold water. Smith packed in on horseback the furnishings for his hotel, including bathtubs, full-length mirrors, elaborate glass goblets, and an amazing array of luxurious equipment.

The originator of the permanent camp idea in the national parks and probably in the United States as well was W. W. Wylie, who in the early 'nineties began taking parties through Yellowstone National Park with covered wagons, saddle horses, and other movable equipment and stock. For years he took ever increasing numbers of people through the Yellowstone, making camp each night, putting up cook tent, sleeping tents, canvas shelters for horses and wagons. The melodian furnished music for community singing around campfires in the evening, and Professor Wylie lectured for a while each evening on the features of the park. After a while his parties grew so large that he had to have several outfits. He purchased comfortable stages for his guests. Soon he found that he could not keep on moving these big parties with equipment that had to be taken down each morning and set up each night. He arranged finally to leave his camps standing at several points in the park. His application was resisted by the railroad owning the big hotels, which were not paying interest on their cost, and with which the camps were competing. Mr. Wylie won his case, however, on the ground that there was a demand for cheaper service than the hotels furnished. Meanwhile, the railroad established a policy of rate-making which provided that reduced summer excursion fares should apply only to the park hotels and should be sold only in connection with hotel tickets. This came near ruining the camp business, but Mr. Wylie fought the company before the Interstate Commerce Commission and won the right to have all excursion tickets read either via the hotels or camps. Afterward the railroad sold the hotels and so did Mr. Wylie sell the camps, which are now known as the lodges of Yellowstone.

One summer in the 'nineties, Mr. and Mrs. David A. Curry, at that

time teachers from Indiana, took a party of people through the Yellowstone via the Wylie Camps, or "Wylie Way," as they were known for years. When the Currys came to California a year or two later, they started business in Yosemite Park along the lines of Mr. Wylie's camps in Yellowstone. The Curry Camping trips eventually grew into Camp Curry, one of the most successful undertakings in any of the parks.

Many years later, in 1917, Mr. Wylie, then an old man, pioneered in establishing camps in Zion Park and on the North Rim of the Grand Canyon of the Colorado. The last Wylie Camp was purchased in 1927 by the Utah Parks Company, a subsidiary of the Union Pacific system, to be operated as part of its utilities on the North Rim. Mr. Wylie, in retirement, looks back with great pleasure on the progress of the camping idea that he originated years ago in the Yellowstone.

Most of the other park concessions had equally humble beginnings. The Longmire family and John Reese pioneered in Mount Rainier Park. Will G. Steel and Alfred L. Parkhurst first developed service at Crater Lake. Visitors to Grand Canyon for many years camped out overnight on the long trip overland from Flagstaff to the Canyon at crude lodges built by W. W. Bass and Captain Hanse. Improvements in automobiles and the building of new roads and railroads have brought new thousands demanding accommodations. Many of the pioneers in the business of entertaining guests at the parks have had to sell out to great companies with sufficient capital to meet present-day demands. Whenever difficulties have forced the retirement of these pioneers, the National Park Service has insisted that they be paid fair value for their properties, though failure to render service under terms of the franchises meant forfeiture of concessions. These pioneers labored against great natural difficulties, short seasons, remote distances, and uncertain travel, and they deserve both sympathy and praise.

Present-day operators likewise have their problems. In Grand Canyon Park, for instance, the operators of El Tovar Hotel must haul water for hotel use, gardening, and other purposes in tank cars for one hundred miles by rail at a cost of three dollars per thousand gallons. On the North Rim, water is pumped thirty-five hundred feet, more than half a mile, from a stream in the Canyon. This stream first generates the electric power which operates the pumps to force the water to the rim. Many of the hotels and lodges are great distances from railroads. Hauling perishable foodstuffs to these establishments was extremely difficult in the days of horse-drawn vehicles. It is still costly, even with motor trucks, and must be taken into consideration in the fixing of rates for service at the park hotels and lodges. In many of the more remote camps, supplies must be packed in on mules over high mountain trails—a process which naturally runs up expense.

In practically all of the parks the main concessions are now in the control of one company, charged with offering the visitor every service he needs whether it is profitable to the concessioner or not; but this company rarely has privileges in more than one park. Large companies can do this, compensating for temporary losses in one branch of the service by profits in other branches. Each year the concessioner must submit a plan for his operations during the ensuing year, together with a schedule of rates, to the superintendent of the park, who in turn submits it to the Secretary of the Interior at Washington. In this way, the public is assured of the services that are needed at fair and reasonable rates, and the citizens who invest their capital in the expensive hotels, lodges, and stage lines, needed to give good service, are assured that they will make a fair return on their investment. It is the aim of the National Park Service to have a type of service in every park to suit every taste, ranging from simple housekeeping camps up to luxurious hotels.

It is part of the work of the superintendent and his rangers to see that the visitor to the park receives the type of service he wants. Sagebrusher Jones arrives in his Super-Four, loaded with Mrs. Jones, all the little Sagebrusher Joneses, sundry bedding, camp stools, pots and pans, and food. He wants to see the park as inexpensively as possible, and intends to establish his own household with his own equipment, plus whatever the park can supply.

"All right," says the ranger, "there's a fine camp for you, right over there. It costs you nothing. If you want a tent already put up, you can get it for a dollar a day from the housekeeping camp headquarters. There's a store over here and a cafeteria. Help yourself to wood from this pile. If you don't find everything all right, let us know. Baths? You can get hot or cold showers in that little building for twenty-five cents apiece."

The Simplex Sixes arrive in the park in their new car. They are Sagebrushing it de luxe, as it were. They want to wear their sweaters, knickers, and rough clothes.

"Well, you'd better stay away from the hotel, then," says the ranger. "You girls can get into the dining room in any old clothes, but the old gentleman there can't get in without his coat on. I don't care if his chamois jacket did cost a hundred bucks. The dining room isn't open to anyone without his coat. You'd better go to the camps. There's more life there, the cabins are just as comfortable as hotel rooms, and you can wear your jacket if you want to. That's the way I would go, if I were here for fun."

Along come the Strait-Aights, with their liveried chauffeur. They have the money and the clothes (in the big trunk on the back) and they

want all the service that money can buy. They consult the ranger at the ranger station.

"Yes, sir, there certainly is a good hotel in this park," he tells them, "you can have all the comforts of home, including a bath. Meals are fine, American plan, yes, sir. That's where you want to go."

Probably the ranger has never had a meal at the fine hotel, but he knows the kind of people who do have them there. That is his business. Then there are the Dudes. The New York Dudes, you know, with the trunk full of hiking clothes, riding clothes, morning clothes, afternoon clothes, lounging clothes, and evening clothes. They are headed for the hotel. The Dude from Oshkosh who had been teaching school all winter to save up a couple of hundred dollars for a vacation in a national park is something else again. She wants good value for her money. She goes to the camps. But everybody gets what he wants. That is the national park policy.

And where does the ranger live?

He has a bunk in a cabin, or a rangers' clubhouse, but he doesn't use it much except when he is asleep. After the Dudes and Sagebrushers have been directed to the camps, lodges, or hotels, the ranger has to see that the water supply is plentiful and pure, that the electric light plant is going, that the wild animals are protected, that the telephone and telegraph lines are working, that the vandals are rounded up and brought to justice, that the roads and the bridges are kept in repair, that the forest fires are put out, that the sanitary system is working, that the fish are planted in the lakes and streams, that the trails are rebuilt, that nobody is lost in the mountains anywhere, that the geysers are working, that nobody carves his initials on the big trees, that the museum is kept open, that the stages run on time, that the traffic moves in the right direction, and after that—well, there isn't much of anything to do until tomorrow.

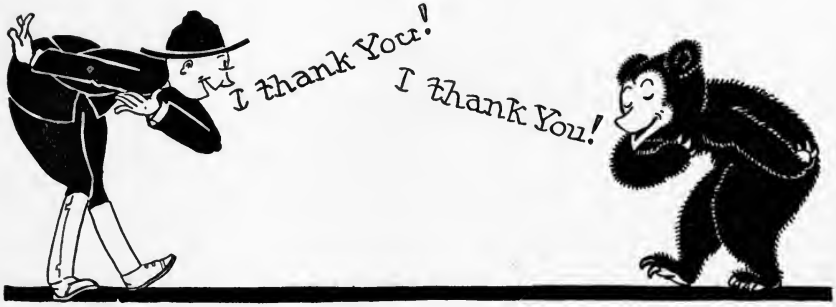
"What do rangers do all winter?" Dudes and Sagebrushers are always asking that question. There seems to be an idea that rangers must pine away for want of something to do. As a matter of fact, the rangers have plenty of work all winter long. In the evenings they are ready for rest. They are great readers, not merely of popular magazines alone, but of the so-called quality magazines. Many of them are good writers, and contribute frequently to magazines and Sunday newspapers. Some of them are studying, through correspondence courses. Ranger James V. Lloyd of Yosemite has completed an education interrupted when he was obliged to go to work as a boy, finishing courses in forestry, writing, photography, and various other subjects. He has become the most frequent ranger contributor of articles and photographs on the national parks to the newspapers and magazines of the West.

But even with the opportunity winter brings to the rangers, each to pursue his hobby, they are glad to see the spring, for—if spring comes, can Dudes be far behind? In the rhyme of Ranger Dan Anderson:

There's a bunch of spoutin' geysers blowin' steam for all they're worth,
And the waterfalls are makin' quite a din,
And the fragrance of the flowers wastes upon the empty air
While waitin' for the season to begin.

The ranger's gettin' ready for the comin' of the Dudes,
For in winter they are lonesome as all sin,
And the bears are growlin' hungry 'round the empty garbage dumps
While waitin' for the season to begin.

Soon the folks will ask fool questions 'bout everything in sight,
And the 'jammers claim the tips are extra thin,
But in spite of all the cussin' one and all we're mighty glad
To be waitin' for the season to begin.



# The National Parks and Monuments

# Glimpses of the National Parks and Monuments

"Oh, Ranger! I have just time enough to see one national park. Which one has the best scenery?" Now that is a hard question. It is also one often asked by those who have yet to see their first national park and who have a vague idea that a national park is "something like a city park, only larger." Actually, the national parks bear little resemblance to most city parks. Where the city parks are cultivated areas, the national parks are regions where Nature is permitted to take her own wild course with trees, flowers, animals, hills, and dales. The National Park Service seeks to keep the parks in as wild a state as possible. Only such roads, trails, and buildings are allowed as are absolutely essential to the comfort of travelers. Each of the fifteen major national parks is supreme in its own way, and each is different. Each was formed to preserve to posterity some striking and outstanding wonder.

Mount Rainier, for example, is a beautiful, stately, snow-covered mountain, an extinct volcano, down the sides of which flow twenty-eight glaciers or rivers of ice. Yellowstone National Park contains more hot-water geysers than can be found in all the rest of the world put together. Nowhere else in the world will the traveler find granite walls so stupendous as in Yosemite, nowhere else will he find waterfalls so high and astounding, or cliffs so precipitous. Sequoia National Park is the home of the finest groves of giant sequoias, including the largest and oldest living thing on earth, the General Sherman Tree. Crater Lake fills, with a deep blue, the cavity left when the top of Mount Mazama, one of America's greatest volcanoes, caved in and disappeared into its own depths, ages ago. Mount McKinley National Park contains the highest peak on the American continent, rearing its crest twenty thousand feet above the sea. Grand Canyon National Park, in Arizona, exhibits the mightiest and most colorful chasm in the world. Mesa Verde National Park preserves the ruins of a remarkable ancient American civilization. Hawaii National Park offers stupendous exhibits of volcanic activity, and much of the time a lake of boiling lava. And so on, through the whole list of the national parks.

Besides the national parks there are thirty-three national monuments under the direction of the National Park Service. National parks are reserved and dedicated by act of Congress, and, as a rule, they have been carved out of the public domain and set apart as national parks because they contain scenery or other natural phenomena so unusual and distinctive as to make their preservation in essentially their primal condition of national importance. Originally it was believed that only areas of considerable size should be included in national parks, but long since the element of size has been dropped as an essential factor in creating parks.

National monuments are set aside by order of the President under the Act of Congress of June 8, 1906, which is known as the "Antiquities Act." It authorizes the Chief Executive to "declare by public proclamation historic

landmarks, historic and prehistoric structures, and other objects of historic and scientific interest that are situated upon lands owned or controlled by the Government of the United States to be national monuments." Another section of this law permitted the President to accept donations of land which might be established as national monuments. It sometimes happens, as in the case of Acadia National Park, that Congress elevates a national monument to the status of a national park, and it is not unlikely that one or two of the smaller national parks will be reduced eventually to the status of monuments.

In the beginning, the Antiquities or National Monument Act was interpreted to authorize only the reservation of small areas including landmarks, historic structures such as old missions, prehistoric buildings such as cliff dwellings, and unusual features of scientific interest such as the Petrified Forest in Arizona, certain fine caves, Muir Woods, et cetera. In 1908 President Roosevelt, in order to stop exploitation of the Grand Canyon of the Colorado through mining claims and other filings on land which had no legal basis, ordered a national monument created nearly a thousand square miles in area on the ground that the Grand Canyon possessed "scientific interest." His power to do this was questioned in the courts, but he was sustained by them.

Theoretically, on the precedent of the Grand Canyon case, any president could make a national monument include any area that the nation might want or that should be preserved for all time, but, practically, Congress would not permit such a general usurpation of its powers and could control the reserving of such monuments by refusing to appropriate funds for their upkeep.

As a matter of fact, were it not for this question of funds for upkeep and operation, the national monuments and national parks would be almost on the same basis, for the National Park Service Act of 1916 authorizes both parks and monuments to be administered in the same manner and under identical policies. Today, Carlsbad Cave National Monument in New Mexico, Petrified Forest and Casa Grande National monuments in Arizona, and Pinnacles and Muir Woods monuments in California are operated exactly like national parks, while Sullys Hill National Park in North Dakota is handled like a monument, owing to lack of funds.

In spite of this seeming confusion between parks and monuments, no one will deny that Congress, in declaring the establishment of parks and in providing for them, has properly distinguished between the various reservations on a basis of merit, giving the great outstanding features, historic, scientific, and scenic, national park status, the lesser features being left to presidential reservation as monuments. And as monuments, because of public interest or because of discovery of more important features, claim national park status, Congress elevates them. It is likely that Carlsbad Cave National Monument, under the National Park Service, and the Bandelier National Monument, under the Department of Agriculture, both in New Mexico, may become national parks, the latter the National Park of the Cliff Cities near Santa Fe.

It should be noted here that there are fifteen monuments under the Department of Agriculture and eleven under the War Department, because

they lie within national forests or military reservations. It is more economical to protect these monuments with forces of these other departments, but it is believed that the policies governing them will ultimately be those of the National Park Service. As a matter of fact, the War Department has taken the position that the National Park Service should take over not only its national monuments but also the national military parks, which include Gettysburg in Pennsylvania, Shiloh in Tennessee, Vicksburg in Mississippi, Chickamauga and Chattanooga in Georgia and Tennessee, and Antietam in Maryland, all battlefields of the Civil War, but most of them also very scenic and otherwise possessed of park characteristics.

There are also two other national military parks, Guilford Courthouse in North Carolina, a Revolutionary War battleground, and Lincoln's birthplace in Kentucky, containing the log cabin and part of the farm where Abraham Lincoln was born. This latter park, it seems, should have been under the National Park Service from its establishment, as there never has been any military significance to its creation and maintenance. So it appears that there will be ultimately a consolidation of national parks, national monuments, and national military parks under the National Park Service, which is equipped by experience, personnel, legal authority, and general policies to administer and protect them all in the interest of the nation.

Of the national monuments now under the National Park Service, two are in California, eight are in Arizona, six in New Mexico, one in Nebraska, three in Colorado, four in Utah, two in Wyoming, one in South Dakota, one in North Dakota, one in Montana, one in Idaho, and three in Alaska.

All of the monuments in Arizona, New Mexico, and Utah, with the exception of the Carlsbad Cave and the Dinosaur monuments, are under the administration of one superintendent with headquarters at Casa Grande, Arizona.

Following is a brief description of each of the national parks and monuments, together with suggestions for seeing them.

## YELLOWSTONE NATIONAL PARK

Yellowstone National Park lies principally in Wyoming, but extends over the borders of Idaho and Montana. It is probably the most celebrated of all the national parks because it contains more and greater geysers than all the rest of the world together, the only other great geyser fields in the world being those in Iceland and New Zealand.

Geysers are, roughly speaking, water volcanoes. They occur only at places where the internal heat of the earth approaches close to the surface. Their action, for so many years unexplained and even now regarded with wonder by so many, is simple. Water from the surface trickling through cracks in the rocks, or water from subterranean springs, collecting in the bottom of the geyser's crater down among the strata of intense heat, becomes itself intensely heated and gives off steam, which expands and forces upward the cooler water that lies above it. It is then that the water at the surface of the geyser begins to bubble and give off clouds of steam, the sign to the watchers above that the geyser is about to play. When the water in

the bottom reaches so great an expansion under continued heat that the less heated water above it can no longer weigh it down, it bursts upward with great violence, rising many feet in the air and continuing to play until practically all the water in the crater has been expelled. Spring water, or the same water cooled after falling on the ground again, seeps through to repeat this process. The length of time before the geyser spouts again depends upon the time it takes for the water to seep back and to become re-heated.

The celebrated Old Faithful Geyser plays with great regularity at intervals of about sixty-three minutes. It has never failed any visitor with an hour to spare and patience to wait that long. Some of the largest geysers play at irregular intervals of days, weeks, or months. Some very small ones play every few minutes. Many bubbling hot springs which throw water a few feet into the air once or twice a minute are in reality but small, imperfectly formed geysers.

Nearly the entire Yellowstone region, covering an area of 3,426 square miles, so large that two or three of our smaller states could be dropped into it with room to spare, is remarkable for its hot-water phenomena. The geysers are confined to six basins known as the Upper, Lower, Norris, Shoshone, Heart Lake, and West Thumb geyser basins, lying in the middle-western and southern portions of the park, but the other hot-water manifestations occur at widely separated points. Marvelously colored hot springs, mud volcanoes, and other phenomena are frequent. Yet the geysers and hot-water formations are by no means the only wonders in the Yellowstone. Indeed, the entire park is a wonderland. The Grand Canyon of the Yellowstone is renowned for its marvelously variegated volcanic coloring, a dazzling spectacle that fairly takes the visitor's breath with its beauty. Far below the rim and the coloring, one sees the foaming Yellowstone River winding down the canyon, following its plunge over a waterfall of 308 feet, nearly twice the height of Niagara. From Inspiration Point one can stand on the rim and gaze at two miles of kaleidoscopic coloring in the steep slopes that drop more than a thousand feet down to the river. Here and there jagged rocky needles rise perpendicularly for hundreds of feet like groups of Gothic spires, and on the topmost pinnacles of some of them may be seen the nests of the osprey, sometimes with young.

Every shade of almost every color can be found in this daring and spectacular canyon: deepest orange, faintest yellow, reds ranging from the softest pink to the most vivid crimson, blacks and grays and pearls and glistening white. Greens are furnished by the dark pines, or the lighter shades of the leafy shrubs, or the foaming emerald of the plunging river, while above are the ever changing blues of the Rocky Mountain sky, perforated by the fleeting, fleecy clouds. The canyon is a spectacle which one gazes upon in silence. The favorite practice of the rangers is to blindfold their friends who have not yet seen the canyon, take them to Artist Point or Grand View, and then suddenly remove the handkerchief from their eyes.

Yellowstone National Park is the greatest wild game sanctuary in the country. No rifle has been fired at the animals of the park, except to destroy

certain predatory beasts, for more than thirty years, and the creatures—particularly the bears, the deer, and the buffaloes—have become so tame that they can be seen at any time. The animals, the birds, and the fish of the park have been described already in detail in special chapters devoted to them.

One peculiarly fascinating glimpse of Yellowstone's tempestuous past is afforded in the petrified forest of the Specimen Ridge country, where many levels of upright petrified trunks may be found alternating, like the layers of a cake, with the levels of volcanic mud flows. That plainly shows that after the first forest grew on the volcano's slope and was engulfed by a fresh run of mud enough time elapsed for a second forest to grow upon that level, and that this in turn was engulfed with a new mud flow to make the level for another forest, and so on. There is one cliff two thousand feet high composed wholly of these alternate levels of forests and the mud flows which engulfed them.

The Yellowstone travel season is June, July, August, and September. The park is practically snow-bound during the rest of the year. There are five gateways to the Yellowstone for the Sagebrusher arriving in his own motor: the Gardiner Gateway on the north; the West Yellowstone and Gallatin gateways from which the motorist enters on the west boundary; the Jackson Hole Gateway reached from Lander or Rock Springs, Wyoming, or from Victor, Idaho; and the Cody Gateway through which one enters the park at Sylvan Pass after passing the remarkable Shoshone Canyon and Lake and the other wonders of the Buffalo Bill country. Several transcontinental railroad lines serve the Yellowstone: the Union Pacific via West Yellowstone, the Northern Pacific via Gardiner and Gallatin gateways, the Milwaukee via Gallatin Gateway, the Burlington via the Cody or eastern entrance, and the Chicago & Northwestern Railway via Lander and the Jackson Hole Gateway on the south. Railroad passengers travel through the park in motor stages, requiring five days to make the circuit. They have the choice of accommodations at the Yellowstone lodges, with wooden cabins for sleeping quarters, or at the modern hotels, the hotels being slightly more expensive than the lodges. In either case, the visitor's itinerary is worked out by the railroads or the transportation company and his reservations are made without bother on his part.

## GRAND TETON NATIONAL PARK

In magnificent contrast to the volcanic Yellowstone and its border of volcanic mountains, there rises to the south one of the most abrupt and stupendous outcroppings of granite in the Western Hemisphere, the Tetons. From the western shore of Jackson Lake the Teton Mountains lift their spired peaks 7,000 feet in apparent perpendicular. The master of them all is the Grand Teton, whose altitude is 13,747 feet. Many glaciers rest upon their slopes. At their feet nestles Jackson Hole, a region rich in romance, once the favorite hiding place of the robber and bad man, but now a center for the "dude wrangling" industry. The Grand Teton National Park was established February 26, 1929.

## YOSEMITE NATIONAL PARK

Yosemite National Park, 1,125 square miles in extent, or about the size of the state of Rhode Island, lies directly east of San Francisco on the west slope of the Sierra Nevada. It ranges in altitude from 2,000 feet at its western entrance to 9,400 feet at its eastern gateway, and in it are found peaks well over 13,000 feet high. The famed Yosemite Valley is but a small part of this enormous area.

The irregular eastern boundary is the crest of the Sierra, a rampart of tremendous granite peaks, spattered by snow fields and glaciers, steep, domineering, impassable by road except at one point, the lofty Tioga Pass at the head of spectacular Leevining Canyon. Westward from this crestline of the Sierra flow almost countless streams, many of which converge into two river systems, the Tuolumne River, a turbulent, rushing fury of water plunging into Hetch Hetchy Lake and on through a steep and almost inaccessible gorge to the plains below, and the Merced River, placid, meandering in quiet valleys, then roaring in great waterfalls and cataracts through canyons. It is the Merced River which, aided by glaciers in the distant Ice Age, carved the notable Yosemite Valley. Just above Yosemite Valley the Merced forms two of Yosemite's most distinctive waterfalls, Nevada Falls, 594 feet high, and Vernal Falls, a drop of 317 feet.

Yosemite Valley is well known the world over for its great falls and cliffs. The Yosemite Falls plunge in three drops, the upper and higher fall being 1,430 feet, equal to nine Niagaras piled one on top of the other, the lower fall a plunge of 320 feet, while between the two is a cascade in which the water drops an additional 600 feet. The well-loved Bridal Veil Falls is 620 feet high, while Ribbon Falls, highest of all, drops 1,612 feet sheer. Nowhere else in the world may there be seen such spectacles of waterfalls as these.

Yet the waterfalls are not, by any means, Yosemite Valley's only attractions. When the falls dry up, as is sometimes the case in late summer when the snows have melted, the great granite cliffs of the valley more than justify the visit. Half Dome rises in majestic dignity 4,892 feet above the floor of the sylvan valley, El Capitan 3,604 feet, Sentinel Dome 4,157 feet, Clouds Rest 5,964 feet, Cathedral Rocks 2,591 feet, Eagle Peak 3,712 feet, and dozens of other points soar to similar heights. Off from the camps and hotels and roads of Yosemite Valley wind numerous trails where the visitor can lose himself in the solitude of the virgin forest.

Dominating Yosemite Valley and offering a commanding panorama of literally scores of peaks of the Sierra Nevada is Glacier Point, rising 3,200 feet above the floor of the valley. A hotel and campsite on the rim offer the visitor accommodations. One's first visit to Yosemite is a series of vast and breath-taking views of the mountains in their splendor, and no scene is more amazing than the one from Glacier Point. From the Overhanging Rock at this point the embers of a great bonfire are pushed, tinkling over the cliff each night to form the Firefall, one of Yosemite's most beautiful and interesting customs.

To the south of Yosemite Valley is the Mariposa Grove of Big Trees, the largest of the park's three groves of giant sequoias. The Wawona Tree, so large that the automobile road passes through a tunnel in its trunk, is said to be the most famous tree in the world. Its picture is in the school geographies of many nations, and it is one of the first objects that visitors want to see. The largest tree of the grove is the Grizzly Giant, ninety-three feet in circumference, said by naturalists to be almost five thousand years old. The Mariposa Grove contains many other venerable giants. Among them are the Mark Twain Tree, 314 feet tall, the Washington Tree, slightly smaller than the Grizzly Giant, the Telescope Tree, living though hollowed by ancient fires so that one can gaze through its trunk to the sky, and the Fallen Monarch, so huge that a troop of cavalry found room to gather mounted on its trunk.

The vast high-country area of Yosemite National Park, the greater part of it from six to twelve thousand feet in elevation, is not seen by most visitors. Through the acquisition and repair of the old Tioga Road, a mining road crossing the heart of the Yosemite high country and winding over the ridge of the Sierra from Yosemite to Lake Tahoe, the traveler is offered two hundred miles of magnificent high mountain scenery. A lodge in Tuolumne Meadows, with a store and motor supply station, now serve the motorist, who finds in the Tioga Road an easily accessible route to the fastnesses of the High Sierra. High Sierra camps, operated to serve the hiker and the trail rider, are connected by safe and well-marked trails. These camps are at Glen Aulin on the Tuolumne River, Tenaya Lake on the Tioga Road, Tuolumne Meadows, Boothe Lake, ten thousand feet above sea level, Merced Lake, headwaters of the Merced River, and Little Yosemite, a halfway point to Yosemite Valley. As a summer-time vacation region, rich in scenery and plentiful in fishing opportunities, this Yosemite high-country trip is strongly recommended.

Yosemite Valley is easily accessible the year around, either by motor or by motor stage connecting with trains both at Merced and El Portal. Two railroad lines serve Yosemite National Park, the Southern Pacific at the Merced Gateway and at the Lake Tahoe end of the Tioga Pass, and the Santa Fe at the Merced Gateway alone. From Merced the train traveler can reach Yosemite via the Yosemite Valley Railroad to El Portal and thence by motor stage, or by motor stage direct from Merced. During the summer months motorists may enter Yosemite Valley via the Wawona Road, passing near the Mariposa Grove of Big Trees, or the Big Oak Flat Road, traversing the Bret Harte country and passing through the Tuolumne Grove of Big Trees. These roads are closed by snow during the winter months, but the Merced River route is open all year long.

In Yosemite Valley are two hotels, two lodges (operated only in the summer months), and housekeeping camps. There are excellent campsites for the motorists who prefer to camp out. They are equipped with running water and toilet facilities. Stores and cafeterias operate the year around in Yosemite Valley, and at Glacier Point and the Mariposa Grove of Big Trees during the summer months.

## GRAND CANYON NATIONAL PARK

The feature of Grand Canyon National Park is a magnificent and breath-taking canyon, highly colored, a mile deep, thirteen miles wide, and many miles long, flanked on both sides by spires, minarets, mesas, cliffs, in fantastic designs—the whimsical carvings of the most tumultuous of the world's great rivers, the Colorado. Pushing its way across the great plain between the Rocky Mountains and the Gulf of California, the Colorado has carved its channel deep into the plateau, which ranges from four to eight thousand feet in elevation.

The Grand Canyon of Arizona, or of the Colorado, as it is more generally called, is the world's supreme example of erosion. Happy it is that the Canyon is a thing of rare beauty as well as a geological wonder. Its slopes are tinted many colors, the tones of which change chameleon-like with the movement of the sun and the clouds. The wanderer upon the rim looks down upon miles and miles of pyramids and minarets carved from painted depths. Miles away, and a mile below, he sees the tiny silver thread which he knows is the giant in strength, the Colorado River.

There are two trails down the cliffs to the river from the South Rim and they can be negotiated safely on foot or on horse. They connect over a long suspension bridge with trails leading to the North Rim, which is a thousand feet higher. Unless he goes by trail from rim to rim the traveler must take a long train or motor trip, going hundreds of miles to reach a point thirteen miles away as the crow flies. These trail trips of Grand Canyon Park are memorable adventures, and every visitor who can do so should take one or more of them. Hundreds of mules are used daily down the Bright Angel or Kaibab trails to the Colorado River, across a long suspension bridge, and up to the opposite rim.

The South Rim is most easily reached by motor or via the Santa Fe Railroad, which reaches the site of the El Tovar Hotel, situated right on the rim of the Canyon. Here are seen in colorful costumes Hopi, Navaho, and Havasupai Indians displaying their tempting wares—baskets, bowls, bead work, and other articles. Stores, campsites, and the headquarters for the park are located here, in addition to the picturesque El Tovar Hotel. The Phantom Ranch, a unique camp operated in the Canyon near the river for the convenience of visitors, is most easily reached by trail from the South Rim—a great adventure to the visitor.

The North Rim is accessible by motor or via a motor-stage line connecting with the Union Pacific system terminal at Cedar City, Utah. A distinctive modern lodge, operated by the railroad, is perched high on the North Rim, offering a marvelous vista. The visit to the North Rim is often made in conjunction with trips to Zion and Bryce National parks, described elsewhere and served by the same railroad connections. En route to the North Rim, travelers pass through the Kaibab Forest, the largest virgin forest in the United States, on a plateau 7,500 to 9,300 feet above sea level. Vast herds of deer roam this area. In recent years they have become so numerous that the problem of feeding them in the snowy season is a serious one.

## GLACIER NATIONAL PARK

Glacier National Park is so named because in the hollow of its rugged mountain tops lie more than sixty small glaciers, the remainders of the ancient monsters which once covered all but the highest mountain peaks of this park. It is located in northwestern Montana right up against the Canadian boundary. It is a richly colored land of ruggedly modeled mountains, enormous, twisting glacier-scooped valleys, precipices thousands of feet high, innumerable rushing streams, and hundreds of lakes of rare beauty. Though all the other parks possess these general features in addition to others which differentiate them each from the other, Glacier Park possesses them in such unusual abundance and happy combination that it is an area of marked individuality. There is no other scenic region with which to compare it, except the less colorful, colder, and less accessible Canadian Rockies. In richness of beauty it stands alone.

The fantastic carving of Glacier National Park was the work of the glaciers in the soft rock. From the continental divide descend nineteen principal valleys, seven on the east side and twelve on the west, each of them with many smaller tributary valleys each with its streams, lakes, and glaciers. Many of them have never been explored, unless perchance they were entered by the Indians on their hunting expeditions. There are 250 known lakes in the park, and probably many smaller ones in the wilderness that have never yet been seen.

Bordering on the park is the reservation of the Blackfoot Indians. The eastern half of Glacier National Park was once included in the Blackfoot reservation, and was purchased from them by the government. The Blackfeet, perhaps the finest and most picturesque tribe of Indians in the country today, are seen in the park in their striking costumes and their gaily colored tepees. They are probably the outstanding attraction of the park to many visitors. Over eight hundred saddle horses and pack animals are used in Glacier National Park, as it can be seen adequately only by trips over the mountain trails. Glacier is pre-eminently the trail park of the system, and it is the settled policy of the government not to gridiron it with roads.

There are several excellent hotels and chalets for the accommodation of visitors to the park, which is reached most directly by the Great Northern Railroad. Motorists will find good roads leading to the park from both the east and the west, and within the park they will have available good campsites as well as the hotels and lodges.

## MOUNT RAINIER NATIONAL PARK

Mount Rainier, towering 14,408 feet above Puget Sound, is the greatest of a group of mountains, remnants of extinct volcanoes, that once played an important part in building the continent out of the ancient seas. These mountains, counting them from north to south, included Mount Baker, Mount Rainier, Mount Adams, Mount St. Helens, Mount Hood, Mount Shasta, and Lassen Peak. In the distant past, when the continent was in the making, these great volcanoes belched forth millions of tons of lava and ashes, forming not

only much of the Cascade Range but very probably a large part of the Pacific Northwest. Today, with their fires quenched, they are great ice-covered peaks, landmarks dominating the forests, plains, and cities of the region. Mount Rainier can be seen for 150 miles in clear weather. It rises more than two miles above the mountains at its base, unique, alone, unchallenged, comparable only to Fujiyama, Japan's great volcanic peak. Mount Rainier once rose to a sharp peak, according to geologists, attaining a height then of some sixteen thousand feet; but some ancient catastrophe caused this peak to be blown or broken off.

The national park of which Mount Rainier is the center and the main feature is about eighteen miles square. It includes some of the finest forest stands of the Northwest, beautiful mountain meadows, waterfalls, and is a great sanctuary for wild game. Paradise Valley, lying between the Paradise and Nisqually glaciers, is the great gathering place for both summer and winter sports, winter sports being enjoyed on the mountain slopes during the summer time as well. From this valley a number of trails lead to the glaciers, ice caves, and forests, and to other valleys. Here one may study the action of the glaciers, see them move slowly, a few inches per day, toward their destination. Here one may find perhaps the greatest collection of alpine flowers in any of the national parks, magic carpets of blossoms, miles in extent, vivid in color, some of them so impatient for the sunshine that they push their heads through the melting snows.

Mount Rainier National Park is reached by the Milwaukee Railroad to Ashford, or by motor stage from both Tacoma and Seattle, a half-day ride from either city. Hotels are operated the year around at Longmire Springs and in summer at Paradise Valley, near the snowline. Motorists will find a highway leading from Seattle and Tacoma to Longmire Springs and Paradise Valley, and good roads extending to the two northern corners of the park as well. Campsites are awaiting them along these roads, but hotels and lodges are operated at present only en route to Paradise Valley. Stores and gasoline supply stations offer commodities at reasonable prices.

## ROCKY MOUNTAIN NATIONAL PARK

Rocky Mountain National Park is unique for its record of glacial action. Situated at the tiptop of the Rockies, this park offers unusual opportunities to see easily the struggles of Nature and the elements at timberline, about 11,000 feet above sea level. While other parks have higher peaks within their boundaries, Rocky Mountain Park has the highest average elevation. The little valley of Estes Park, where is located the group of summer hotels, is at 8,000 feet elevation, twice as high as Yosemite Valley. Above this valley the mountains rise precipitously for more than a mile, reaching up to Longs Peak, dominating them all, 14,255 feet above sea level. Several other peaks are almost as high as Longs.

The valleys on both sides of the range of which these peaks are a part are dotted with lovely glades clothed in a profusion of wild flowers and watered by streams flowing down from the snows and the glaciers. Forests

of pine and aspen grow in the valleys. Timberline in Rocky Mountain Park is particularly interesting. The fierce, icy winds make it impossible for trees to grow tall. The spruces lie flat on the ground like vines, and finally give place to low birches, which give place in turn to small pine growths, succeeded finally by tough, straggling grasses, hardy mosses, and tiny alpine flowers. Grass grows in sheltered spots even on the highest peaks, a fortunate circumstance for the great horned mountain sheep which seek these high places. Even at the highest altitudes, gorgeously colored wild flowers grow in profusion in the sheltered gorges.

Above timberline, the bare mountain masses rise from one to three thousand feet, often in sheer cliffs. Covered with snow in fall, winter, and spring, and plentifully spattered with snow all summer long, the great granite masses at the top of the Rockies are beautiful indeed. At sunrise and at sunset they are rose-colored, during fair sunny days they are gray and mauve and blue, in storms they shove their heads into the clouds, often to emerge snow-crowned. Frequently, the visitor sees a thunderstorm born on Longs Peak. Out of the blue sky, a slight mist will gather, becoming a cloud, growing rapidly, swelling, sweeping the sky until, in fifteen minutes, it is thundering and raining down into the valley below. Half an hour more and it is sunshine again.

The easy accessibility of these mountain tops makes Rocky Mountain Park a popular one. The park is reached by a seventy-mile rail and motor trip, or by motor only, from Denver, Colorado. At the little village of Estes Park, just outside the park on the east, and at Grand Lake on the west are to be found hotels, lodges, camps, stores, and other accommodations for the traveler, whether he comes by train or by motor. The summer season is from June 15 to October 1, but the park is open all the year, the balance of the time for those seeking winter sports.

## SEQUOIA NATIONAL PARK

Located near the southern end of the Sierra Nevada is Sequoia National Park, home of the largest group of giant sequoias in the world. These great trees once were common to much of North America. They were saved from extinction by the shelter offered by the pockets and the protected slopes of the Sierra. Near Sequoia National Park, and under the same direction, is General Grant National Park, a smaller area, but the site of one of the finest of the sequoia groves.

The General Sherman Tree, with a diameter of 36.5 feet and a height of 280 feet, is counted as the largest and oldest living thing on earth. It is possibly more than 5,000 years of age. Around it are scores of other venerable sequoias, almost as large and as old, while in General Grant Park is found the General Grant Tree, 35 feet in diameter and 264 feet high. It, too, was standing probably when the pyramids of Egypt were being constructed, more than 2,000 years before the birth of Christ.

There are sequoia trees in several localities in the Sierra Nevada, notably in Yosemite National Park with three distinct groves; but the

greatest stand of them all is the Giant Forest, the largest group in Sequoia Park. In this park, the sequoias are on the increase. The great giants are surrounded by their offspring, mere striplings one or two thousand years old, and still younger ones ranging in age down to the tiny trees a year or two old, of which there are now countless thousands. The sequoias are the glory, as they were the cause, of the Sequoia and General Grant National parks. Scattered here and there over a large area, they cluster in thirteen separate groves.

The sequoias are by no means the only attractions of Sequoia National Park. The park is generously endowed with great cliffs, mountains, other forests, streams, waterfalls, and other attractions which are dwarfed by the glory of the Big Trees. Within the boundaries of Sequoia National Park is a great stretch of High Sierra country, including Mount Whitney, the highest peak in the United States, 14,496 feet high. Trails from the park lead to Tehipite Valley in the middle fork of the Kings River, considered by many another Yosemite, and to the main Kings River Canyon, a region of stupendous ruggedness and of wild beauty, comparable only to Yosemite.

Sequoia and General Grant National parks are easily reached by motorists from the San Joaquin Valley State Highway. Both parks are accessible the year around. Travelers arriving by train are met by motor stages at Exeter, California, on the Southern Pacific and Santa Fe railroads. Accommodations at Sequoia Park include both a lodge and housekeeping camps, while campsites for those who wish to camp out await the Sagebrusher at both Sequoia and General Grant.

## CRATER LAKE NATIONAL PARK

In the heart of the Cascade Mountains of Oregon there lies, jewel-like in a setting of lava, a lake of unbelievable blue. The visitor who comes upon it suddenly stands silent with emotion, overcome by its extraordinary beauty and by a strange sense of mystery which increases rather than decreases with familiarity. This is Crater Lake. Once, where this lake nestles in a cavity on the mountain top, there stood a great volcano, Mount Mazama, perhaps the highest peak in the region. Certainly it was as high as Mount Shasta. That was ages ago. Human eyes never saw Mount Mazama. Long before the coming of man to this continent, some great cataclysm caused the peak of Mount Mazama to crash inward and the mountain disappeared as if swallowed up by itself. In its place was left a crater-like abyss, the awful depth of which no man can guess.

The volcano was not quenched. It burst out anew through the collapsed lava in three places, forming new and smaller cones. These cones are the islands now seen in Crater Lake, which gradually grew as the volcano died down, and as the snows piled on the mountain top and melted into the crater with no outlet. There is no inlet nor outlet, curiously enough, for Crater Lake, yet the water is pure and fresh. It is supposed that the water escapes by underground channels to reappear in the Klamath River, some miles away.

Geologists find Crater Lake of special interest because of the way Nature made it. Many volcanoes have had their peaks blown off. Mount Rainier was one of these. But no other in the United States has fallen into itself as did Mount Mazama. The evidence of this curious and titanic event is quite conclusive, and the visitor to the park can see it for himself. The slopes of the mountain were made of lava that ran, hot and fluid, from a crater many thousands of feet higher. The pitch of these outward slopes enables the scientist to tell with reasonable accuracy the probable height of the volcano when the catastrophe took place.

Crater Lake National Park is reached by train on the Southern Pacific Railroad lines into Medford and Klamath Falls, at which stops motor stages make the short trip to the park. A hotel on the rim of the lake offers accommodations. For the motorist, the visit to the park is a short side trip from the Pacific and Dalles-California highways. He will find, in addition to the hotel, campsites, stores, filling stations. The park is open to travel from late June or July 1 for as long as snow does not block the roads, generally until October.

## MESA VERDE NATIONAL PARK

The Mesa Verde National Park was created to preserve the ruins of the highest form of ancient American civilization found in the United States, that of a nation of Indians resembling the modern Pueblos in characteristics, whose homes still stand on the cliffs that line the Mancos River in southern Colorado. The Indians who lived here have disappeared entirely. No trace of their fate has been found by archaeologists. Their civilization, as indicated by the relics they left and by their cliff cities, was comparable in many ways to that of the Aztecs in Mexico and the Incas of Peru.

The Mesa Verde is fifteen miles long and eight miles wide. The Mancos River flows along it, its banks forming narrow plains above which rise walls of rock three to five hundred feet above the river. In these walls are small canyons in which the ancient cliff dwellers built their homes, after the manner of modern tenements. Apparently they sought safety from their enemies. It is thought that their cliff cities were built about 1300 A.D.

There are many ruins in Mesa Verde yet unexplored, awaiting the pioneer who can experience anew the thrill of Richard and Alfred Wetherell, who, while hunting in 1888, discovered, explored, and named the Cliff Palace, one of the important ruins of the park. That is an unfortunate name, for it is not the ruin of a palace at all, but the remains of a village with two hundred rooms for family living and twenty-two sacred rooms for worship. The Spruce Tree House, so called because of a great spruce growing out of the remains, is a village that sheltered 350 inhabitants, high in the cliff.

Antiquities are not the only attractions of Mesa Verde National Park. Its natural beauties are many. In winter the park is inaccessible, due to the heavy fall of snow; in the autumn the region is dry and parched; but in June and July, when the rains come, the grasses grow and the flowers are in full bloom. Then it is a beautiful country.

Mesa Verde National Park is reached by rail travelers via the Denver & Rio Grande Western Railroad from Mancos or Durango stations, or via the Santa Fe Railroad from Gallup, New Mexico. Stage lines connect between these stations and the park. At least three days should be allowed for the side trip, including the time required to travel by stage to the park. Motorists will find roads leading to the park in good condition during the summer months from Denver and Pueblo, Colorado, from Gallup, New Mexico, or from Utah points. Accommodations in the park include tents and cabins at Spruce Tree Camp near the ruins of the Spruce Tree House. Campers will find excellent campsites available.

## ZION AND BRYCE NATIONAL PARKS

Zion National Park was formed to preserve the vividly colored and fantastically carved sandstone cliffs bordering the deep valley of the Mukuntuweap River, which has carved three thousand feet into the mountains north of the Grand Canyon of the Colorado and south of the Great Salt Lake. The canyon was given the name of Zion by the Mormons who discovered it.

This chasm is similar in size and shape to Yosemite Valley, yet it resembles in its vivid coloring the Grand Canyon of the Colorado. Extraordinary as are the sandstone carvings, it is the coloring that is most amazing. The gorgeous red of the Vermillion Cliffs is the prevailing tint. For two-thirds of their height 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. Other colors are many and brilliant.

This gorgeously colored valley is reached by a seventy-mile motor trip from Cedar City, Utah, which is on the Union Pacific Railroad. Many travelers take a round trip which includes the visit to the North Rim of the Grand Canyon and to Bryce Canyon, a new national park, smaller than Zion but brilliantly colored and fantastically carved. Bryce and Zion are totally different in every respect. Motorists find both parks easily accessible over roads through southwestern Utah. At both Zion and Bryce canyons are lodges, campsites, and stores offering the usual accommodations found in the parks. A third beautiful canyon, more accurately described as an amphitheater, lying between Bryce and Zion canyons, is Cedar Breaks, which is also developed with adequate tourist accommodations.

## LASSEN VOLCANIC NATIONAL PARK

In Lassen Volcanic National Park is preserved for public enjoyment the only aggressive and active volcano within the borders of the United States. Here may be studied the phenomena of volcanic activity which played so important a part in the formation of this continent. Lassen Peak is the most southerly of the chain of volcanoes which once dominated the Pacific Northwest. It is located in northern California near the Nevada boundary.

From time to time this great peak resumes its rumbling and belches forth smoke and ashes and pours out rivers of lava and hot mud, sweeping down

over the forests that cloak its slopes. Its first recent explosion was in May of 1914. Previously, it had been quiescent for two hundred years. Since 1914 it has from time to time threatened eruption, to the great interest of travelers in this area.

In addition to the volcano, this national park, one of the newest and least developed and known, has other charms. It is a region of fine forests, streams, lakes, and other mountain scenery, the heart of a popular vacation area. One of its attractions is a boiling lake with a circumference of approximately two thousand feet. Within the park area are numerous fissures from which issue gases, steam, and rumblings, similar to those of Yellowstone.

Lassen Volcanic Park may be reached by the Southern Pacific Railroad from the west or by the Western Pacific from the south. By automobile it is reached from Red Bluff, California, on the Pacific Highway, or Reno, Nevada, on the Lincoln Highway. Hotel accommodations are available at points near the park, and camping is permitted within the park.

## MOUNT McKINLEY NATIONAL PARK

The highest mountain in North America, Mount McKinley, forms the basis for creation of Mount McKinley National Park in Alaska. This enormous peak rises 20,300 feet, nearly four miles, above sea level. It is snow-capped the year around and down its slopes push many great glaciers, some of them among the largest in the world. At its base are forests, meadows, and valleys, above which the mountain towers for 17,000 feet, a magnificent spectacle. A view of this monster two-headed mountain is one of the reasons for a visit to Alaska.

In addition to Mount McKinley, the park is a great wild game retreat, being the natural home of the caribou, the grizzly, and Alaskan brown bears, fiercest and largest of the bruins, moose, the beautiful white Dall sheep, a species of bighorn, and numerous other animals, as well as many varieties of bird life.

Mount McKinley is reached by train which connects with boats to Alaska at Cordova and Seward. As yet, it is a great undeveloped wilderness, but a road is being pushed farther each year into its interior fastnesses and seven camps have been established within the boundaries. From these, saddle-horse trips are possible.

## HAWAII NATIONAL PARK

Within Hawaii National Park are found three volcanoes of world renown: Haleakala on the island of Maui, and Mauna Loa and Kilauea on the island of Hawaii. Haleakala has been inactive for centuries, but its summit is a crater of size and beauty that makes it one of the world's show places. This crater is eight miles long and three miles wide. Its surrounding walls rise two thousand feet. Its broad, rolling, rainless, sandy floor is decorated with plants famous under the name of silver swords, yucca-like shrubs three to four feet high, whose drooping leaves gleam like polished stilettos. From

this great reddish floor, within the lava rim, rise thirteen volcanic cones to a height of several hundred feet. The crater was left in this state intact by reason of the fact that side vents drained the fires below. Hence, Haleakala is one volcano that did not destroy its crater.

Mauna Loa is known as the greatest of living volcanoes. Kilauea is celebrated for its lake of fire. These two volcanoes are on the same mountain range. Mauna Loa is the younger and stronger, and it has grown so high that it has almost absorbed Kilauea. Mauna Loa soars 13,675 feet above the not far distant sea. It is active every five or ten years. Its slopes are covered with forests of native mahogany or koa and tangles of giant tree ferns.

The most spectacular exhibit of Hawaii National Park is Kilauea's Lake of Fire. In the middle of a plateau 4,000 feet high, drops a pit with vertical sides in which Kilauea boils its lava. Occasionally lava geysers spout 150 feet in the air. At other times the lake simply boils, a seething mass of fire, which can be photographed on the darkest night. Sometimes the lava disappears entirely for several years at a stretch.

These volcanoes are reached by motor from the ships that ply to Hilo, on the island of Hawaii. Visitors can approach surprisingly near the Lake of Fire. On the rim of Kilauea is a hotel known as the Volcano House. Other accommodations on the order of the lodges of other parks are also available at reasonable rates.

Throughout this park are found wonderful examples of rich tropical plant growth, giant tree ferns as high as houses, mahogany forests, numerous interesting trees found nowhere outside the tropics, and an abundance of wild flowers. The forests and wild flower gardens are made the more colorful by the gaily colored birds of the Hawaiian Islands.

## ACADIA NATIONAL PARK

Acadia National Park occupies a considerable portion of the Mount Desert Island, off the Maine Coast at the mouth of Penobscot Bay. It is a region of rugged granite mountains, bays, promontories, woods, and lakes, renowned for its exquisite beauty since the date of its discovery in 1604 by the French navigator, Champlain. It figured prominently in the early colonization activities of the French, but was not settled until the English obtained possession of Canada.

Acadia Park is unique in several ways. Its territory for a century was in private hands. It has been ceded to the government piece by piece, and the park is being increased in size from time to time by new contributions of land. Within the modest boundaries of the park there is a wonderful overlapping of species of plant life, from both the north and the south along the Atlantic Coast. It is also a wild life sanctuary of importance.

Acadia Park is the most easterly of the national parks and is reached by the Maine Central Railroad or by motor from Bar Harbor, Maine, where the superintendent of the park maintains his office. Good roads of great scenic beauty traverse the park. Motor-boat trips along the shoreline of the island are an additional attraction.

## HOT SPRINGS NATIONAL PARK

Oldest of all the national parks is Hot Springs, located in the Ozark Mountains of Arkansas. Even before the coming of the white man this region was known for the healing qualities of its waters, which flowed in warm springs, much appreciated by the Indians. As early as 1832 the federal government, to make these waters available to all persons at nominal cost, established this national park. The area comprises 912 acres, including in all 46 hot springs.

A handsome and prosperous city has grown up at the site of the springs. There are nine bathhouses on the government reservation, and ten more in the city, supplied with water from the park springs. The government analysis of the waters shows them to be of mineral qualities comparable to the famous waters of Spa, in Europe.

This interesting and useful park is reached via the Rock Island and Missouri Pacific lines or by automobile over some of the best highways in the South. Hot Springs has several famous resort hotels which are operated on high standards of service.

## PLATT NATIONAL PARK

Platt National Park was created to preserve sulphur and other beneficent springs, both hot and cold, which gush from an area of one and one-half square miles in southern Oklahoma.

## WIND CAVE NATIONAL PARK

Wind Cave National Park includes a remarkable limestone cavern in the Black Hills of southwestern South Dakota. The park has an area of sixteen square miles.

## SULLYS HILL NATIONAL PARK

Sullys Hill National Park in North Dakota is a picturesque forested region bordering on a lake. It is a wild animal preserve and has historic associations.

## MUIR WOODS NATIONAL MONUMENT

Named in honor of John Muir, explorer, naturalist, and writer, Muir Woods National Monument was established by a presidential proclamation on January 9, 1908. The monument preserves a remarkable grove of redwoods nestling on the south slope of Mount Tamalpais, in a secluded valley less than two hours' ride from San Francisco. It comprises 128 acres and was the gift of the Honorable William Kent and his wife, Elizabeth Thatcher Kent, and has been described as "one of the most friendly, easily approachable woods, centuries old, permanently preserved for the benefit and enjoyment of the people."

These tall and noble trees narrowly escaped being cut into shingles and

railroad ties just before they were purchased by Mr. Kent in 1905. Even then they were not safe. Commercial interests sought to declare the valley in which they were located condemned to make a reservoir site, and only the timely proclamation of the Muir Woods National Monument by President Roosevelt saved them. The President, a great conservationist, wished to name the grove Kent Monument. The correspondence between him and Congressman Kent is indicative of the ideals, not only of the donor but of the National Park Service as well. The President wrote:

"My Dear Mr. Kent: I thank you most heartily for this singularly generous and public-spirited action on your part. All Americans who prize the natural beauties of the country and wish to see them preserved and undamaged, and especially those who realize the literally unique value of the groves of giant trees, must feel that you have conferred a great and lasting benefit upon the whole country.

"I have a very great admiration for John Muir; but after all, my dear sir, this is your gift. No other land than that which you give is included in this tract of nearly 300 acres, and I should greatly like to name the monument the Kent Monument, if you will permit it.

"Sincerely yours,

"Theodore Roosevelt"

*"To the President, Washington*

"My Dear Mr. President: I thank you from the bottom of my heart for your message of appreciation and hope and believe that it will strengthen me to go on in an attempt to save more of the precious and vanishing glories of Nature for a people too slow of perception.

"Your kind suggestion of a change in name is not one that I can accept. So many millions of better people have died forgotten that to stencil one's own name on a benefaction seems to carry with it an implication of mundane immortality as being somewhat purchasable.

"I have five good, husky boys that I am trying to bring up to a knowledge of democracy and to a realizing sense of the rights of 'the other fellow,' doctrines which you, sir, taught with more vigor and effect than any other man in my time. If these boys cannot keep the name of Kent alive, I am willing it should be forgotten.

"I have this day sent you by mail a few photographs of Muir Woods, and trust that you will believe, before you see the real thing (which I hope will be soon), that our nation has acquired something worth while.

"Yours truly,

"William Kent"

"The White House, Washington

"My Dear Mr. Kent: By George! You are right. It is enough to do the deed and not to desire, as you say, to 'stencil one's own name on the benefaction.'

"Good for you, and for the five boys who are to keep the name of Kent alive! I have four who I hope will do the same thing by the name of Roosevelt. Those are awfully good photos.

"Sincerely yours,

"THEODORE ROOSEVELT"

## PINNACLES NATIONAL MONUMENT

The spires, domes, caves, and subterranean passages of this extraordinary area in California, about one hundred miles south of San Francisco, are awe-inspiring and colorful. The spire-like forms which rise six hundred to a thousand feet above the floor of the canyons give the monument its name. In addition to its geological interest, the monument, comprising twenty-three hundred acres, is a wild life sanctuary. In it are found a species of black-tail deer, and it is one of the last homes of that now almost extinct species, the condor, the largest bird found on the continent.

Pinnacles Monument is easily reached by motor from Hollister or Soledad on the Pacific Highway, and good campsites are available for the camper, particularly in Bear Gulch where there is a fine stream. By rail, it is reached from Hollister on the Southern Pacific coast line.

## CASA GRANDE MONUMENT

Casa Grande National Monument, in the heart of Arizona about halfway between Tucson and Phoenix, preserves the "Great House," a prehistoric ruin of the pueblo type. These ruins were discovered in 1694 by Father Kino, the Jesuit priest and the founder of Tumacacori Mission. In addition to the Great House there are ruins of a considerable city built by the ancient Americans in the heart of the desert. Students think that these people, who attained a fair degree of civilization, left the Casa Grande ruins at least seven hundred years ago, and that their civilization may have flourished twelve hundred years, as indicated by the improvements made in their masonry. It is possible that their city antedated Christianity.

Casa Grande is one of the most easily seen of the old pueblo ruins. It is near the Old Spanish Trail and the Bankhead Highway between Phoenix and Tucson, not far from the town of Florence. It can also be reached from the Casa Grande station of the Southern Pacific Railroad. Winter and springtime are the most desirable times to visit Casa Grande, because of the heat on the desert at other times of the year. Motorists who enjoy camping are urged to pitch their camps in the desert, under the open skies, a rare and enjoyable experience on the Arizona desert.

## TUMACACORI MISSION

Tumacacori Mission, located forty-nine miles south of Tucson, Arizona, on the road to Nogales, was constructed by the Papago Indians about 1691 under the direction of the Jesuit padre, Eusebio Francisco Kino. It antedated the California missions by a century. After prospering for almost 150

years, first under the Jesuits and later under the Franciscans, the mission was attacked by the Apache Indians who drove the padres away, disbanded the Papago Indians, and looted the mission. It was in a state of decay when discovered by the American explorers, following acquisition of the territory from Mexico in 1850. The mission is being reconstructed along its original lines as rapidly as funds will permit. It is unique among the missions in that it is built of burned brick. It is one of the most interesting of the chain of missions in the Southwest, and historically important because of its great age. During one of the Indian uprisings, the famous bells of the mission were buried in the sands of the desert. They are still lost, though thousands of visitors have joined in the hunt for them.

Tumacacori is near the Tucson-Nogales Highway, and is reached from Nogales on a branch line, or from Tucson on the main line of the Southern Pacific Railroad.

## PETRIFIED FORESTS OF ARIZONA

The Petrified Forests of Arizona extend over a wide area. In them are found fossil remains of great trees which fell thousands of years ago. Erosion has brought them to the surface of the soil again, after being buried for ages. An area of one hundred square miles, containing three distinct petrified forests, has been set aside in this monument. The most remarkable of these forests from the visitor's point of view is the Rainbow Forest, where the silica which replaced the original grain of the trees has assumed many and brilliant colors. The ground about these logs is literally paved with chips of agate, onyx, carnelian, and jasper.

A visit to the Petrified Forest National Monument is one of the real experiences of a trip through the Southwest, and one that travelers in the region should not overlook. The monument is reached by motor from Holbrook, Arizona, on the National Old Trails Road, while railroad travelers approach the area from either Adamana or Holbrook on the Santa Fe Railroad.

## MONTEZUMA CASTLE

Situated in a cavity in the face of a vertical cliff eighty feet above the plain at its base, Montezuma Castle is a most remarkable cliff dwelling. It takes three enormous ladders to reach the lower entrance to this fortress home, and the pueblo builders who lived here in ancient times undoubtedly chose the site for security. The prodigious amount of work necessary to construct this great house on the cliff and to transport supplies to it bespeak the untiring energy of these people. The Castle accommodated about three hundred people. In it have been found pottery of a fair character and implements of warfare, hunting, and agriculture. Below, along Beaver Creek at the foot of the cliff, were the communal farms.

Montezuma Castle is in Yavapai County, Arizona, reached from Flagstaff on the Santa Fe Railroad, or by motor over the National Old Trails Road, or via the Jerome-Prescott Road.

## WUPATKI NATIONAL MONUMENT

When the Snake families of the Hopi Indians journeyed east out of the Colorado River Canyon, where as their legend has it their ancestors came up out of the underworld, they stopped at Wupatki on the Little Colorado River, thirty-two miles northeast of Flagstaff, and built a temporary city. The ruins of this pueblo now constitute the attraction of the Wupatki National Monument. The Indians deserted their red sandstone houses many generations ago and went to live with the rest of the People of Peace, as the Hopis call themselves. They are one of the most picturesque tribes of the Southwest. Their famous annual snake dances, dedicated to the rain gods, have made them famous the world over. The ruins of Wupatki Monument are an important link in the chain of evidence by which the story of these ancient people of the desert is being gathered. Motorists may reach them on the Tuba City Road from Flagstaff, which is the nearest railway station, being on the Santa Fe Railroad.

## NAVAHO NATIONAL MONUMENT

The Navaho National Monument is in northeastern Arizona, within the Navaho Indian reservation. It contains ruins of prehistoric dwellings, pueblos built in natural caves by the fortunate discoverers. They are in a good state of preservation. Betatakin, one of these caves, is 450 feet long and 150 feet deep, carved in the red sandstone of a beautiful canyon. Within the cave was a never failing spring of pure water, supplying the needs of the inhabitants, who lived in 120 rooms constructed in the cave. Kitsil is another cave pueblo, even larger, with 148 rooms in it. A riot of color greets the visitor to these caves, the surrounding walls resembling the Grand Canyon in texture. The Navaho Monument is reached by motor stage from Grand Canyon or from Flagstaff, both on the Santa Fe Railroad, or by motor from either of these points over the National Old Trails Road to Kayenta, where pack and saddle animals and Indian guides are engaged for the trip up the canyon to the monument.

## PAPAGO SAGUARO MONUMENT

Nothing that the visitor to the Southwest sees makes a greater impression on him than does the giant saguaro cactus of Arizona and neighboring states. These enormous cacti grow into veritable trees, while around them, less huge but equally novel, are the barrel cactus from which candy is made, the cholla, more popularly known as "jumping cactus" from its habit of connecting itself with any passing object, and various other species of cacti. With the increase in irrigation, many of the finer stands of the giant saguaro cactus are being cleared off to make way for farms.

The Papago Saguaro Monument preserves one of the most picturesque of these stands of giant saguaro, not far from Phoenix, on the Tempe Road. It also contains other cacti plants of the desert, as well as certain birds that are found nowhere except in the vicinity of the giant saguaro. The monument area of nineteen hundred acres includes Hole-in-the-Rock Mountain, a

curious purple rock mountain with a tunnel through it, projecting out of the desert sands. The Papago Monument is reached by a short drive from Phoenix which is on both the Southern Pacific and the Santa Fe railroads.

## PIPE SPRING NATIONAL MONUMENT

In 1858 Brigham Young, the Mormon chief, sent Jacob Hamblin, famous scout and crack shot, to call upon the Hopi Indians in northern Arizona. The party camped one night at a marvelous spring in the midst of a desert and an argument arose as to whether Hamblin could shoot a hole through a handkerchief at twenty yards. Hamblin hit the square of silk, but the force of the bullet only swept the handkerchief away. Chagrined by the laugh that followed at his failure, Hamblin challenged one of the party to stick up his pipe. Hamblin shot the bottom out of it like a flash without breaking the bowl. That was the origin of the name given to the old Mormon fort which was built soon thereafter at the site of this remarkable spring. The fort was an important outpost against marauding Indians, and was the center of a cattle industry established by the Mormons. The spring still flows at the rate of a hundred thousand gallons of pure, cold water a day, a refreshing oasis as well as a scenic attraction to the traveler over the main road from Zion National Park to the North Rim of the Grand Canyon of Arizona.

## CARLSBAD CAVE NATIONAL MONUMENT

Located in the Guadalupe Mountains in southeastern New Mexico is one of the most beautiful and remarkable natural caves in the country, the Carlsbad Cave. This cave was once known as Bat Cave because of the thousands of bats which inhabited it. At dusk each evening these little mammals poured forth for three hours through a large natural opening in such enormous numbers that it was said they looked like smoke from a chimney. In the early morning they returned and with incredible swiftness folded their wings in mid-air and darted into the opening.

The exploration of the cave was not undertaken seriously until 1923, when a party searched for six months without penetrating all of the lofty, spacious chambers, connecting corridors, and alcoves, many of them of remarkable beauty and form. The Big Room is more than half a mile long, is 400 feet wide in places, and is 348 feet high at one place. Here the stalactites are of infinite variety and shape, ranging from almost needle-like proportions to massive pendants. The stalagmites rising from the floor are equally interesting, one group resembling the tall and graceful totem poles of the Alaska Indians. In some places they rise to the ceiling, like cathedral columns. Another remarkable room is the Music Room, with its formations resembling huge organ pipes. Here the stalactites, when lightly tapped, give off musical sounds. Others resemble curtains.

The reservation includes 719 acres, but the extent of the caves is not known, many of them being as yet unpenetrated. They await the explorer. Paths, stairways, and railings make the main rooms safe for the visitor, while

flood lights are installed in some of the rooms. The cave is twenty-six miles from Carlsbad, New Mexico, on the Ozark Trails and on a branch line of the Santa Fe Railroad.

## CHACO CANYON

As skilful architects the prehistoric builders who lived in Chaco Canyon, New Mexico, between Albuquerque and Gallup, were without equals in the whole of the United States. No written word is left of these people whose cultural material, recovered from abandoned rooms, reveals greater variety, technique, and beauty of design than that of any other of the ancient peoples of the Southwest.

Pueblo Bonito, "Beautiful Village," the largest of the ruins, is a great semicircular structure, originally five stories high. It was 667 feet long and 315 feet deep, an enormous building, and it has been characterized as the largest apartment house built anywhere in the world prior to 1887, housing 1,300 people. This structure is but one of eighteen villages in the Chaco Canyon, several of the others being almost equally remarkable in construction, though not as large. Near some of the ruins evidences of ancient irrigation engineering are plainly traceable.

Chaco Canyon is one of the larger national monuments, comprising 20,629 acres. The ruins are most easily reached from Thoreau, on the Santa Fe Railroad, or by motor over the Old Trails Highway from either Albuquerque or Gallup, New Mexico. There is a small store at Chaco Canyon and limited accommodations are available. Motorists should be prepared to camp, sites being plentiful.

## EL MORRO

Ordinarily, carving upon the walls of monuments is an act frowned upon and punished by fine, but in the case of El Morro the carving upon the sandstone wall was the occasion for making a national monument. On the smooth walls of this sandstone cliff, in west central New Mexico, the early Spanish explorers carved records of their exploits and of their expeditions against the Indians. The earliest of these Spanish records is that of Don Juan de Onate, governor and colonizer of New Mexico, and founder of the city of Santa Fe, the oldest city in the country, who rested by this cliff on his return from a trip to the head of the Gulf of California in 1606, fourteen years before the Pilgrim Fathers landed at Plymouth. Don Juan records that the Indians "gave their obedience" and that he granted them favor "with clemency, zeal, and prudence." Other and succeeding Spanish conquistadores left their records beside those of Don Juan.

It should be added that the idea of recording exploits upon these rocks was not original with Don Juan. He carved his record over those of prehistoric Indians who left their thoughts in pictographs, many of which are not destroyed by the Spanish records. The Indian records may play an important part in piecing together the history of the Southwest Indians.

The visit to El Morro is an interesting side trip for motorists over the National Old Trails Highway. El Morro is reached by rail from Gallup, New Mexico, on the Santa Fe Railroad.

## AZTEC RUIN NATIONAL MONUMENT

Situated near the town of Aztec, New Mexico, and reached by the National Park-to-Park Highway, is the Aztec Ruin National Monument, a large E-shaped structure of the pueblo type containing approximately five hundred rooms. The Aztec Ruin is the largest of a group of ruins, and is the most striking and best preserved. Relics, including a hafted axe, potsherds, and other objects, indicate that the inhabitants of this ruin may have been of the same peoples as the Mesa Verde Indians. It may prove an important link in piecing together the story of these early Americans. Excavations are being conducted by the American Museum of Natural History, which deeded the ruin to the government in 1923 through the courtesy of a trustee, Mr. Archer M. Huntington.

## GRAN QUIVIRA

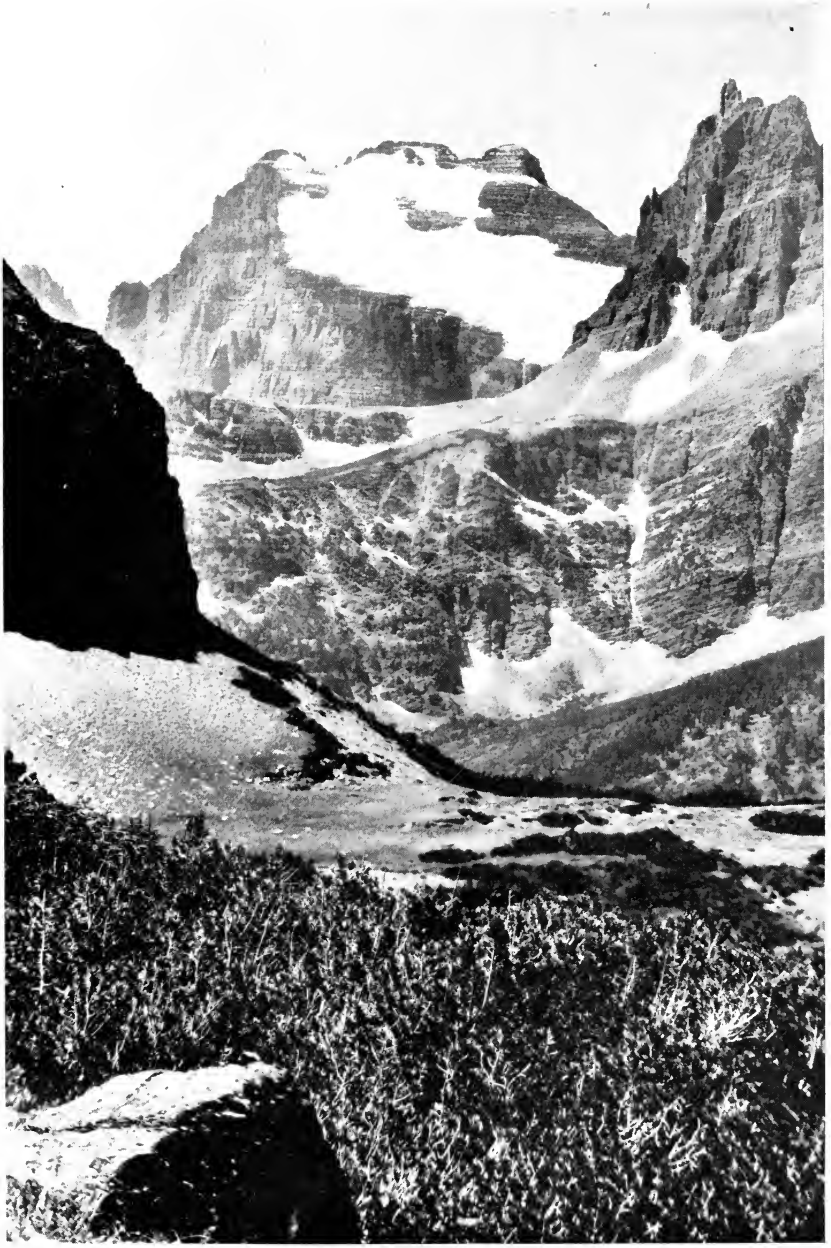
The Gran Quivira is the ruins of one of the important links in the chain of Spanish missions of the Southwest. It is near Mountainair, New Mexico, on the Santa Fe Railroad, or can be reached on the National Old Trails Highway from Socorro, New Mexico. There are numerous Indian pueblo ruins near by which will be preserved when excavated. Both the mission and the pueblos are said to have been built by women and children of the Piro tribe of Indians.

## CAPULIN MOUNTAIN NATIONAL MONUMENT

Capulin Mountain, New Mexico, is a magnificent example of a recently extinct volcano. It rises to an altitude of 8,000 feet above sea level, and the cone stands 1,500 feet above the general level of the surrounding plain. This steep cinder cone is surrounded by the mesas, peculiar to New Mexico. The whole formation offers an interesting study in volcanic activity, the mesas as well as the cone having been formed by successive lava flows. At the top of the mountain the crater can be studied with ease. This monument covers an area of 680 acres. It is reached via the Colorado-to-Gulf Highway or via a branch line of the Santa Fe Railroad from the town of Dedman, or from the town of Folsom on the Colorado Southern Railroad.

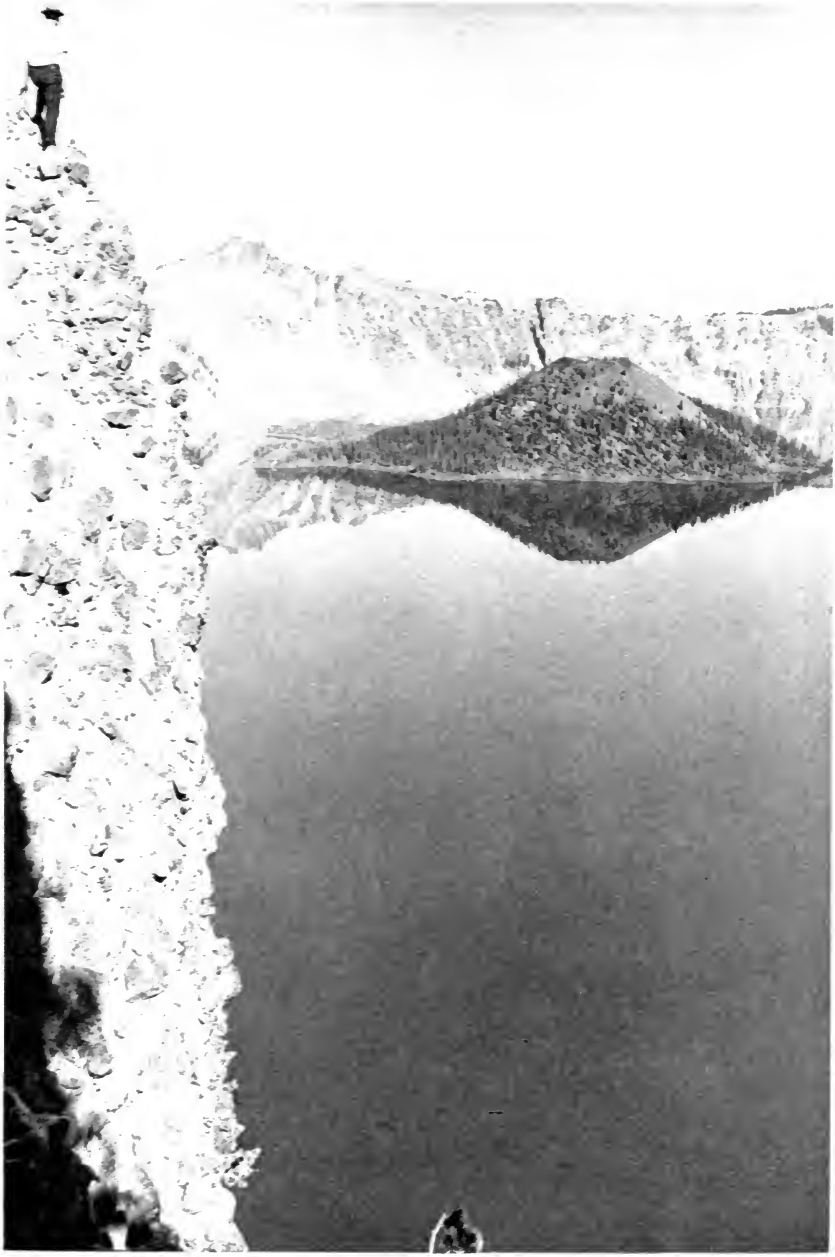
## RAINBOW BRIDGE

The most remarkable natural bridge yet discovered in the world is the Rainbow Bridge in southern Utah. This colorful bridge is not only perfect in its symmetry, both top and bottom, but it is so huge that the dome of the Capitol Building in Washington could stand under it without touching the span, which is 309 feet high and 278 feet from pier to pier. The Rainbow Bridge is now easily reached over new trails from Kayenta, Arizona, which is also the starting point for trail trips to the Navaho National Monument.



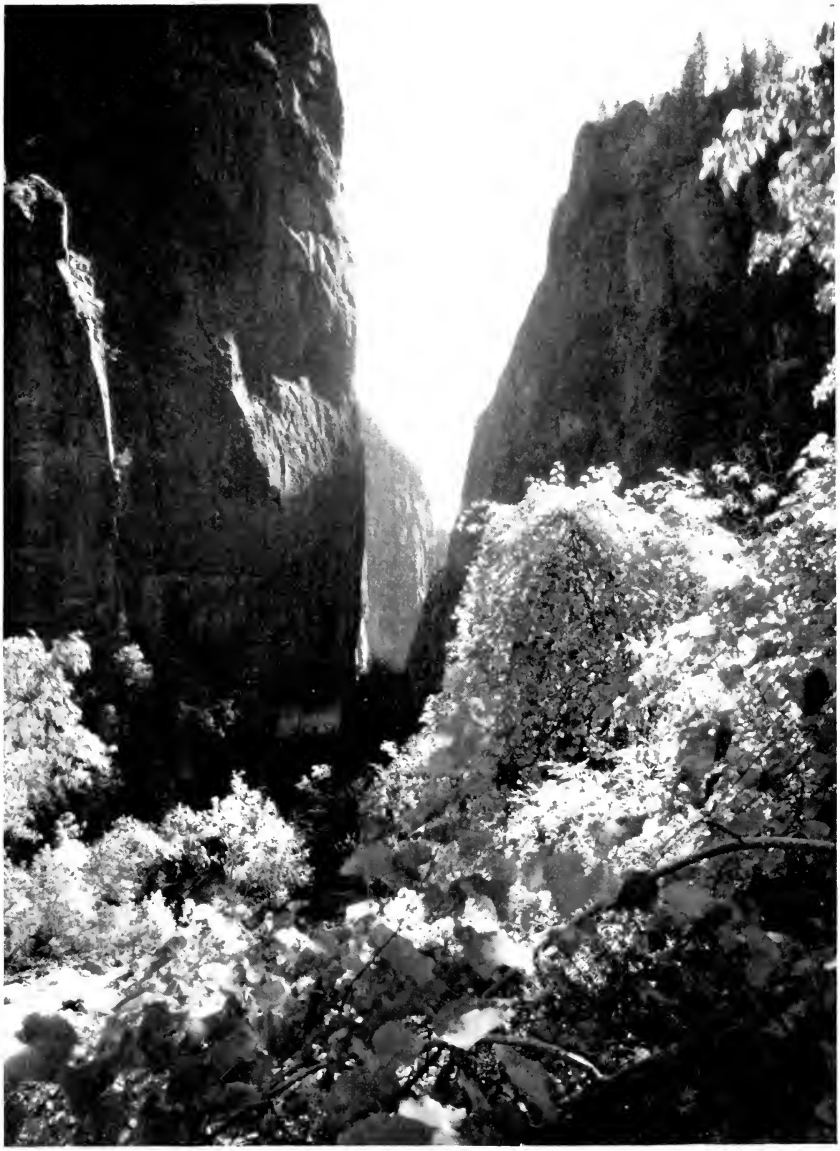


***Mount Merritt from Red Gap Pass in Glacier National Park***



*Crater Lake, in Crater Lake National Park*

*General Sherman Tree, Sequoia National Park, the oldest and largest living thing on earth*



*In Zion Canyon, Zion National Park*

## THE NATURAL BRIDGES OF UTAH

Three natural bridges of great size and beauty are included in the Natural Bridges Monument of San Juan County, Utah, containing 2,740 acres. Owanchomo Bridge, the smallest of the three, has a span of 194 feet and is 108 feet above the stream bed. The Caroline Bridge, three miles down stream, is the most massive, having a span of 186 feet and a height of 205 feet above the stream bed. A short distance away is the Augusta Bridge, the largest, its span extending 261 feet and rising 222 feet above the stream bed. This great natural bridge is 28 feet wide and 65 feet thick at its smallest part. It is truly an enormous structure. On the Caroline Bridge are carvings of the symbols of the Hopi dancers, while near by are ruins of cliff dwellings. The natural bridges were formed by stream erosion which washed out the canyons below them. These objects of great interest are reached by trail parties, a fifty-mile trip from Blanding, Utah, on the Rio Grande Railroad and on the Pikes Peak Ocean-to-Ocean Highway.

## DINOSAUR NATIONAL MONUMENT

The greatest collection in the world of fossil remains of dinosaurs and other prehistoric reptiles is in Dinosaur National Park in northeastern Utah. In some ancient time this area was probably a sand bar, in which great reptiles, floating down some prehistoric river, were mired and trapped. Many species of the strange creatures who inhabited the earth in the dim past were caught in these bogs. Already four hundred thousand pounds of material, including bones and matrix, have been taken from the quarry, now the walls of a beautiful mountain canyon.

The greatest prize of all was a skeleton of the largest brontesaurus known to science, a creature which measured one hundred feet long and twenty feet high, and probably weighed twenty tons in life, so huge that beside him a full-grown elephant would appear as a dog is to a horse. There are thousands of other skeletons in these walls, awaiting excavation. The monument is reached by motor from Jensen, Utah, on the Victory Highway, or from Watson, Utah, on the narrow-guage Uintah Railroad, connecting with the Denver & Rio Grande Western at Mack, Colorado.

## SCOTTS BLUFF MONUMENT

Thousands of pioneers, headed for the Pacific over the old Oregon Trail, marked their course by a great promontory known as Scotts Bluff in the northern part of Nebraska. As far back as 1812, trail blazers noted this point of sandstone, towering four thousand feet above the neighboring Platte Valley. Hiram Scott, for whom the point was named, was one of three trappers separated from a large party that was to rendezvous by the bluff. Scott was deserted by his two companions when he was stricken with mountain fever. He crawled seventy miles, hoping to rejoin the larger party; but he was too late. Beneath the bluff which now bears his name Scott died. His remains were found the next year.

Scotts Bluff was a guide for the pioneers en route to Oregon and California. It guided the missionaries in their trips among the Indians. It was a station on the Pony Express. It figured in Indian wars. In 1847, Fort Fontanelle was established at its base. In more recent years, a tunnel has been bored through its base, and through it flows a great flood of water to irrigate thousands of acres of land on the North Platte project. It is visited by thousands each year, being one of the most popular of the monuments. Scotts Bluff is reached by the Lincoln Highway through the North Platte Valley or by rail from Gering on the Union Pacific and from Scottsbluff on the Burlington Route.

## HOVENWEEP MONUMENT

Hovenweep Monument preserves some unusual prehistoric towers, pueblos, and cliff dwellings, not far from Mesa Verde National Park on the Colorado and Utah boundary line. They represent a special architectural type peculiar to this region, and are important in the study of the ancient life of the Southwest. The ruins are reached from Mesa Verde National Park, or via the Denver & Rio Grande Western Railroad to Dolores, Colorado.

## COLORADO NATIONAL MONUMENT

Five miles from Grand Junction, Colorado, on the Denver & Rio Grande Railroad, is the Colorado National Monument, a beautiful and picturesque collection of monoliths and other examples of erosion, all highly colored. The reservation is 13,883 acres in extent, is plentifully supplied with springs, and is a veritable forest of monoliths. It is reached by the Pikes Peak Ocean-to-Ocean Highway and the National Roosevelt Midland Trail. It is a fine camping spot for motorists.

## YUCCA HOUSE MONUMENT

Yucca House Monument, so named because of the quantity of yuccas growing in the vicinity, is in southwestern Colorado. The area contains the ruins of a prehistoric Indian village yet to be excavated. It is apparently a house of great size, built on the gentle slope of Sleeping Ute, a mountain so named because when seen from certain points it resembles the form of a sleeping Indian. The monument is near the road from Shiprock, New Mexico, to Cortez, Colorado, about fifteen miles from the latter town.

## THE DEVILS TOWER

The alleged works of His Satanic Majesty figure prominently in the choice of national monuments, but nowhere is there an object of greater wonder than the Devils Tower in the Black Hills region of Wyoming. This great group of pentagonal volcanic columns rises six hundred feet, or higher than the Washington Monument, perpendicularly from the surrounding plain. The diameter at the base is seventeen hundred feet. It is one of the strangest freaks of Nature, a spectacle never to be forgotten.

The Devils Tower played an important part in the lives of the Indians, not only as a landmark, but also in their legends. The origin of the rock is explained by the Indians very easily. One day, so the legend goes, three Sioux maidens, gathering wild flowers, were beset by three bears. The maidens took refuge on a rock, but the bears, having sharp claws, also began climbing the rock. The Great Spirit, seeing the predicament of the maidens, caused the rock to grow higher and higher out of the ground. The bears climbed and climbed until they were exhausted, and then fell hundreds of feet to their death on the ground below. Saved from the ferocious animals, the Indian maidens made a rope of their flowers and safely lowered themselves to the ground below.

Believe it or not, it appears as though that, or a phenomenon of similar nature, must have happened to project this great rock so high above the plain. The Indians also claimed that the Thunder God beat his tom-tom on the top of the tower, thus causing thunder. The tower also served the white pioneers in their Indian wars, being a direction point. The reservation is 1,152 acres in extent and is reached by the Custer Battlefield Highway and the Black and Yellow Trail, or by the Burlington Railroad from Moorcroft station. A fine campsite is available for motorists.

## SHOSHONE CAVERN

The Shoshone Cavern is a regular story-book robbers' cave, its secret entrance located high up a mountain cliff among the trees. The cavern is about four miles from Cody and on the Cody Road, one of the main entrances to Yellowstone Park. The entrance is about twenty feet wide and six feet high. Once inside, the cave—a large fault in the mountains—extends back for more than half a mile. Off it are numerous side caverns, many of which are not yet explored. Guides are needed to find the entrance of the cave, reached after a trail climb of a mile, and a further climb up precipitous ladders. Inside the cavern are interesting and beautiful formations.

## FOSSIL CYCAD MONUMENT

In a picturesque part of the Black Hills of South Dakota is found the Fossil Cycad National Monument, an area of 320 acres wherein are found deposits of ancient fern-like plants of the Mesozoic period. It is the most interesting fossil-plant bed yet discovered. In it have been unearthed plants of enormous size, some with unexpanded buds, enabling scientists to piece together models of ancient flowers and fruits. This monument is reached from the Denver-Deadwood Highway, or via the Chicago & Northwestern Railroad from Hot Springs, South Dakota, or the Burlington Route from Minnekahta or Edgemont.

## VERENDRYE MONUMENT

Verendrye National Monument commemorates the explorations of the celebrated French explorer and his sons, who first pushed into the Montana

territory in 1742 and who continued their pioneering during the following years, dreaming of a great trapping and hunting empire which was to be the possession of France. Their dreams failed, but their ideals are commemorated by this monument, the most conspicuous feature of which is Crowhigh Butte, towering above the upper Missouri River.

## LEWIS AND CLARK CAVERN

So named because it overlooks the Lewis and Clark Trail for fifty miles, the Lewis and Clark Cavern Monument is located in Montana about forty-five miles northeast of Butte. It is near the highway known as the Yellowstone Trail and is not far from Whitehall on the Northern Pacific Railroad. The cave contains many beautiful stalagmites and stalactites, and curious drip formations in its various chambers add to its interest and beauty. It is a very large cave and is one of the finest caverns of the West.

## CRATERS OF THE MOON

Nowhere else in the United States can so many features of volcanic activity be found in a small area as in the thirty-nine square miles that make up the Craters of the Moon National Monument in central Idaho at the foot of the White Komb Mountains. The monument takes its name from the fact that it resembles the moon as seen through a high-powered telescope. The profusion of cinder cones, craters, hornitos, black lava floods, and lava caves indicate that this section is of comparatively recent volcanic activity. The region is rich in geologic interest. The nearest railroad station is Arco on the Oregon Short Line. Comfortable accommodations are available here. The monument is reached by motorists over the Idaho Central Highway from Boise or from Yellowstone.

## SITKA NATIONAL MONUMENT

Sitka National Monument, fifty-seven acres on Sitka Bay, commemorates the "Battle of Alaska" in 1804, when the Russians finally established their supremacy over the warlike Indian tribes of the northwest territory. It is likewise the site of a fine collection of totem poles, sixteen in number, among the finest in Alaska. These totem poles record the genealogy of the old Alaska Indian tribes, each family having as its emblem an animal, which figures prominently in the carvings of the totem pole. Each pole tells the exploits of the family it represents. The Indians were bound by tradition to offer shelter to traveling members of the same family, and the totem pole in the front of a hut told the traveler whether or not he could find welcome in that particular hut. The Sitka Monument totem poles are from two different tribes, the Thlingits and the Hycahs. The former hollowed out their totem poles and deposited in them the charred bones of their dead. The monument also contains some unusual forest growth, including a "witch tree" much feared even by the present generation of Indians, because in olden times

witch trials were held under this tree and victims were hanged from its limbs. The monument is easily reached from the town of Sitka, a regular port of call for the steamers from Seattle.

## GLACIER BAY

Glacier Bay National Monument, containing 1,820 square miles, includes a number of tidewater glaciers of first rank in a magnificent setting of lofty peaks. These glaciers are higher than the masts of ships and offer unique opportunities for the study of glacial action. The monument must be reached by water from Alaska or British Columbia.

## KATMAI NATIONAL MONUMENT

Katmai Monument is more widely known as the "Valley of Ten Thousand Smokes." It is a volcanic belt of extraordinary recent activity in southern Alaska. It is the largest of the monuments, with an area of more than a million acres. As recently as 1912, Mount Katmai on the reservation erupted, belching forth several cubic miles of volcanic materials. In the "Valley of Ten Thousand Smokes" there are literally millions of miniature volcanoes jetting steam or vapor into the air. They are so hot that explorers cooked their meals over this natural steam heat. It is said that this valley is now an example of what Yellowstone was like many, many years ago, when the Yellowstone volcanoes were just ceasing their activity. Some scientists predict that the "Valley of Ten Thousand Smokes" will in some future age be another great new geyser basin.

In addition, Katmai Monument is a valuable game preserve with a plentiful animal and bird life. At present the monument is almost inaccessible except to organized exploring parties, but in time a harbor can be developed and a thirty-mile road will make it easily reached by visitors. It was thoroughly explored, mapped, photographed, and described by parties sent out by the National Geographic Society, and its magazine told the world of the wonders of the region.

## ARCHES NATIONAL MONUMENT

This monument, established by President Hoover on April 12, 1929, consists of two areas in Grand County, Utah, known locally as the "Devil's Garden" and the "Windows," containing approximately 2,600 and 1,920 acres, respectively. Within these areas are extraordinary examples of wind erosion, formed into gigantic arches, natural bridges, "windows," spires, balanced rocks, and other unique wind-worn formations of sandstone.

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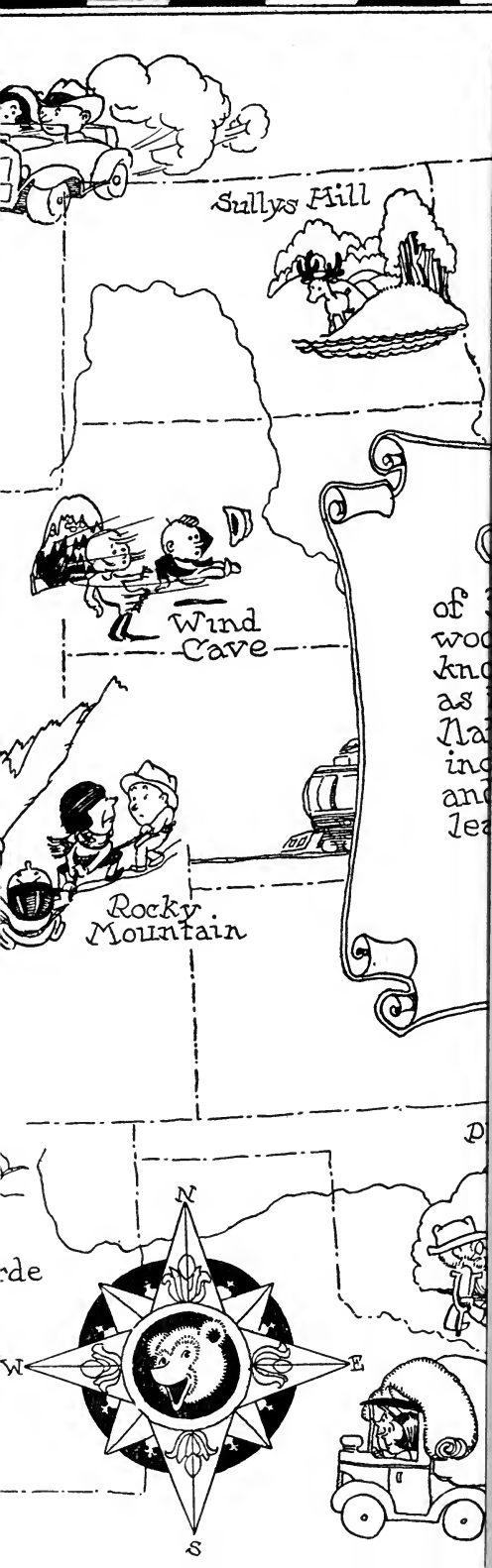


# A Word about the Authors

Stephen T. Mather, who has ten the introduction to "OH, RANG says of the authors:

"It is a happy circumstance these two men, who themselves the genuine spirit of the ran and who are so intimately infor in the affairs of the parks and people, should have collaborate produce this book."

Horace Albright has served parks since the Service was organized, and was for nearly years Superintendent of Yellows Park. He is now Director of National Park Service.

Frank Taylor has for years a close friend of the national p in the related fields of news publicity. Both of them know appreciate thoroughly the satis tions of life within the park which they write.

The collaboration of these tw "OH, RANGER!" has provided us w book which will interest until last line is read—the last fish ca —the last peak scaled.


Ruth
Taylor
White