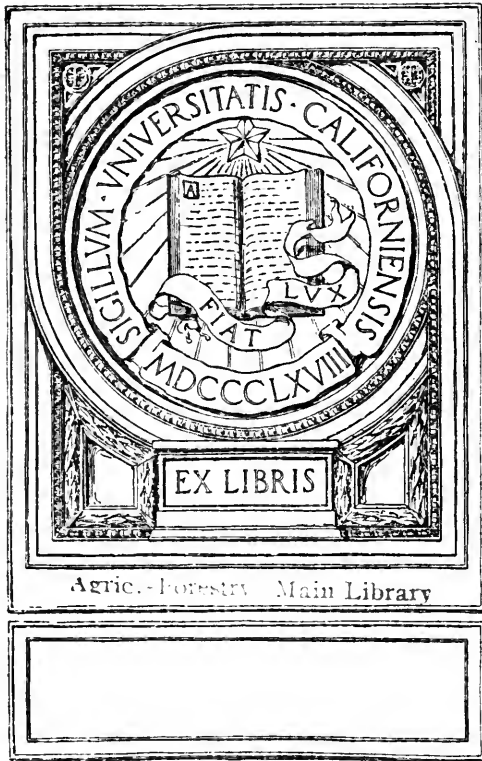


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Glacier National Park.

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✓ Saving the Redwoods. By Madison Grant. Zoological Society Bulletin. Vol. XXII. Number 5. September, 1919.

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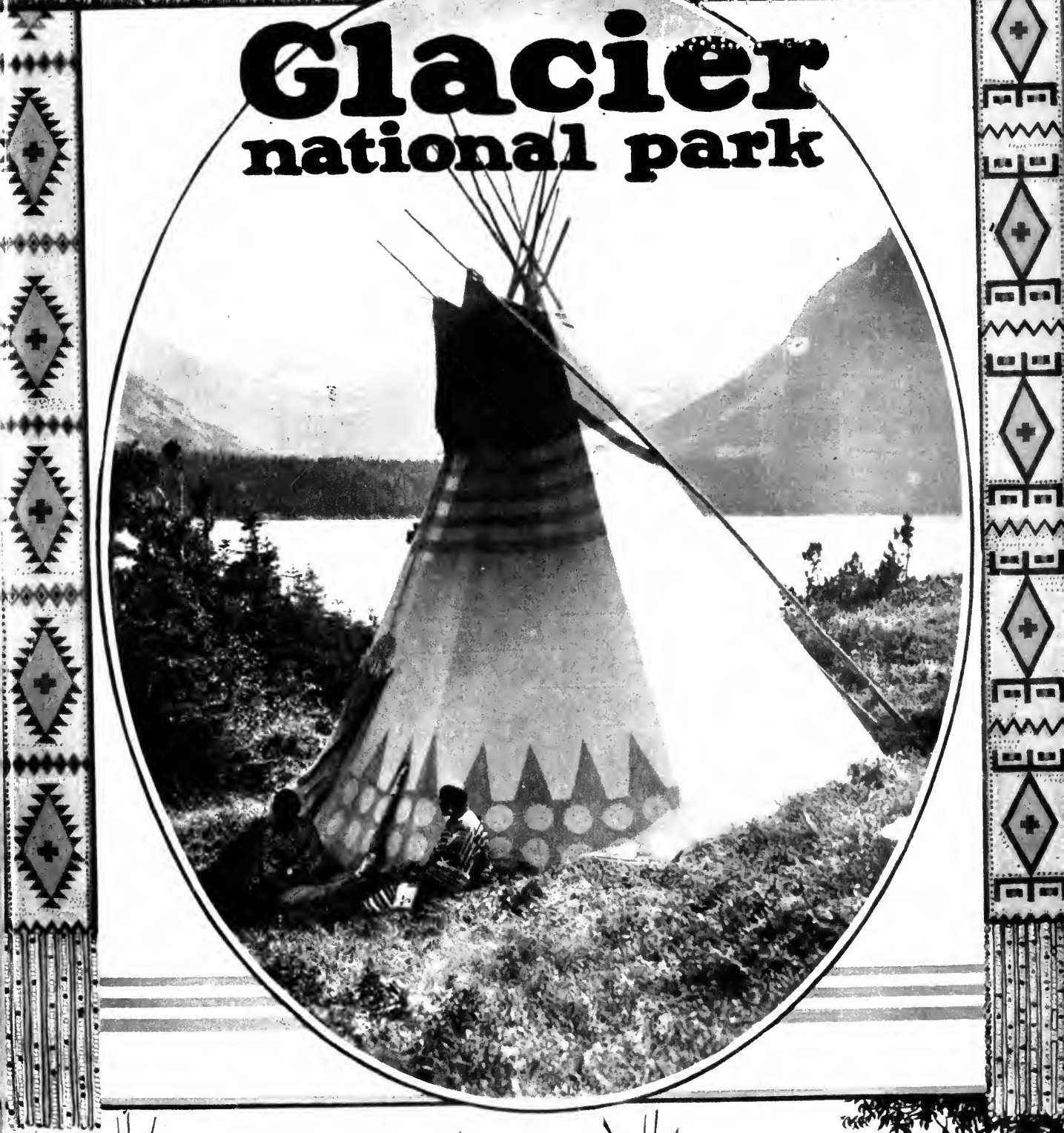
Park Service Bulletin. No. 31. June, 1925.

Park Service Bulletin. No. 33. November, 1925.





Glacier national park





© Hileman, Kalispell, Mont.

HERE the Rocky Mountains tumble and froth like a wind whipped tide, as they careen off to the Northwest. High up on some gale swept crag the mountain goat pauses for a moment and plunges from view.

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FORESTRY
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Glacier National Park

By Mary Roberts Rinehart

Author of "Tenting To-night," "Through Glacier Park," "K", and Other Stories.



IF you are normal and philosophical, if you love your country, if you are willing to learn how little you count in the eternal scheme of things, go ride in the Rocky Mountains and save your soul.

There are no "Keep off the Grass" signs in Glacier National Park. It is the wildest part of America. If the Government had not preserved it, it would have preserved itself but you and I would not have seen it. It is perhaps the most unique of all our parks, as it is undoubtedly the most magnificent. Seen from an automobile or a horse, Glacier National Park is a good place to visit.

Here the Rocky Mountains run northwest and southeast, and in their glacier-carved basins are great spaces; cool shadowy depths in which lie blue lakes; mountain-sides threaded with white, where, from some hidden lake or glacier far above, the overflow falls a thousand feet or more, and over all the great silence of the Rockies. Here nerves that have been tightened for years slowly relax.

Here is the last home of a vanishing race—the Blackfeet Indians. Here is the last stand of the Rocky Mountain sheep and the Rocky Mountain goat; here are elk, deer, black and grizzly bears, and mountain lions. Here are trails that follow the old game trails along the mountain side; here are meadows of June roses, forget-me-not, larkspur, and Indian paintbrush growing beside glaciers, snowfields and trails of a beauty to make you gasp.

Here and there a trail leads through a snowfield; the hot sun seems to make no impression on these glacier-like patches. Flowers grow at their very borders, striped squirrels and whistling marmots run about, quite fearless, or sit up and watch the passing of horses and riders so close they can almost be touched.

The call of the mountains is a real call. Throw off the impedimenta of civilization. Go out to the West and ride the mountain trails. Throw out your chest and breathe—look across green valleys to wild peaks where mountain sheep stand impassive on the edge of space. Then the mountains will get you. You will go back. The call is a real call.

I have traveled a great deal of Europe. The Alps have never held this lure for me. Perhaps it is because these mountains are my own—in my own country. Cities call—I have heard them. But there is no voice in all the world so insistent to me as the wordless call of these mountains. I shall go back. Those who go once always hope to go back. The lure of the great free spaces is in their blood.



Mary Roberts Rinehart

610357

THE ROCKY MOUNTAINS
AND THE MOUNTAIN GOAT



© Hileman, Kalispell, Mont.

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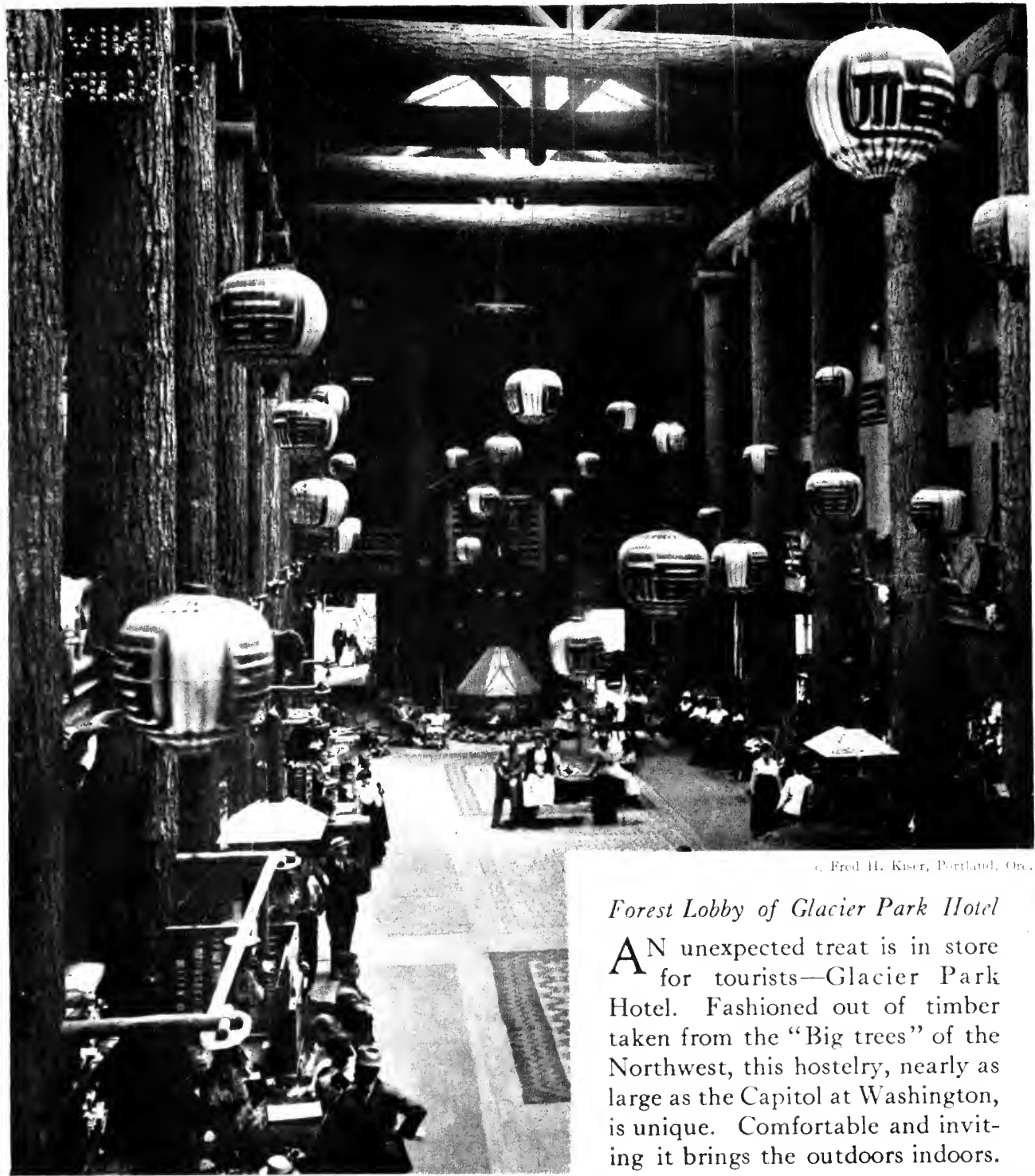
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Mary Roberts Rinehart

610357



By Fred H. Kiser, Portland, Ore.

Forest Lobby of Glacier Park Hotel

AN unexpected treat is in store for tourists—Glacier Park Hotel. Fashioned out of timber taken from the “Big trees” of the Northwest, this hostelry, nearly as large as the Capitol at Washington, is unique. Comfortable and inviting it brings the outdoors indoors.



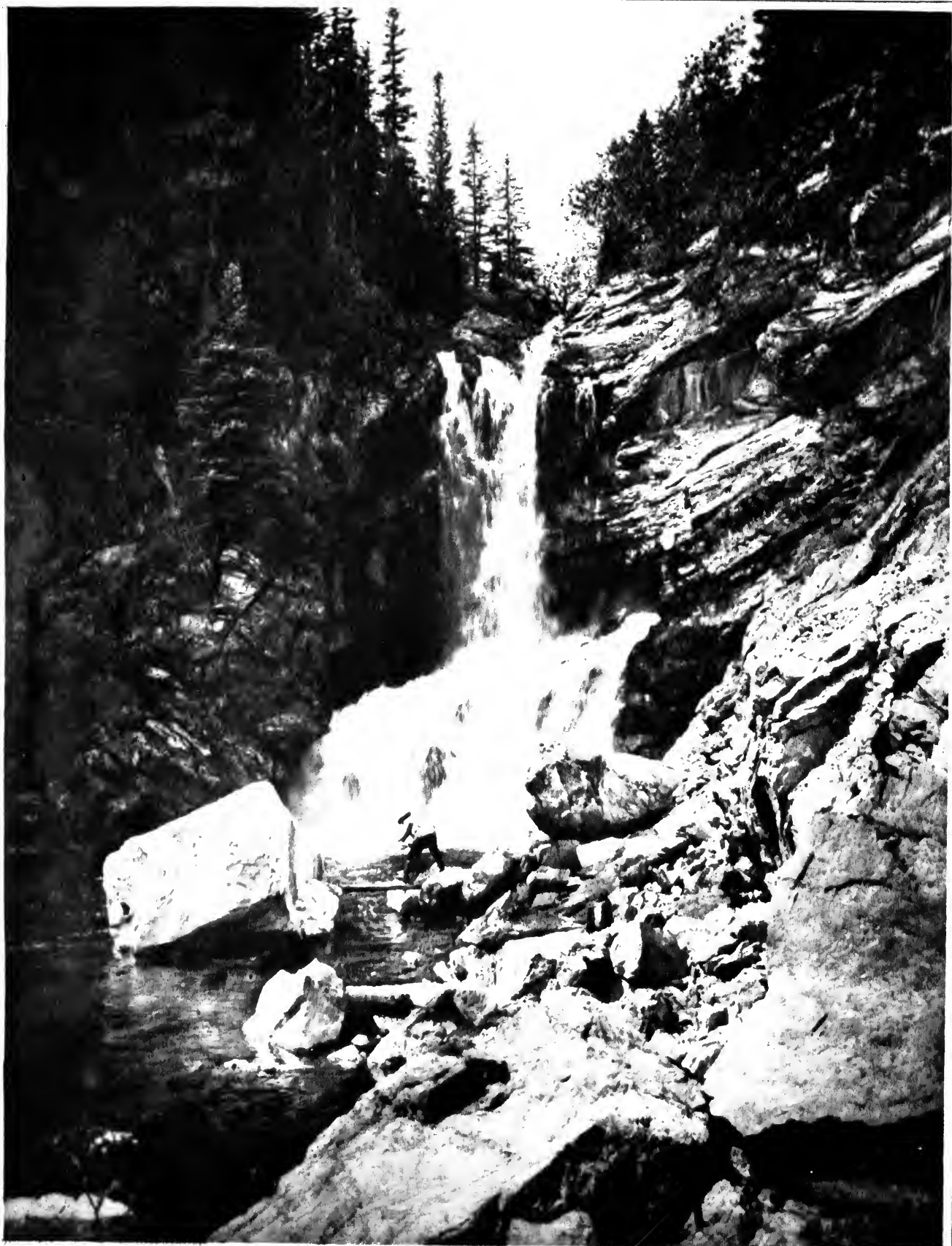


© Fred H. Kiser, Portland, Ore.

TWO Medicine Lake is particularly scenic. Mount Rockwell lifting its pyramid-like peak more than three thousand feet above the water. Two Medicine chalets are tucked away amid the serried peaks on the shore of Two Medicine Lake.

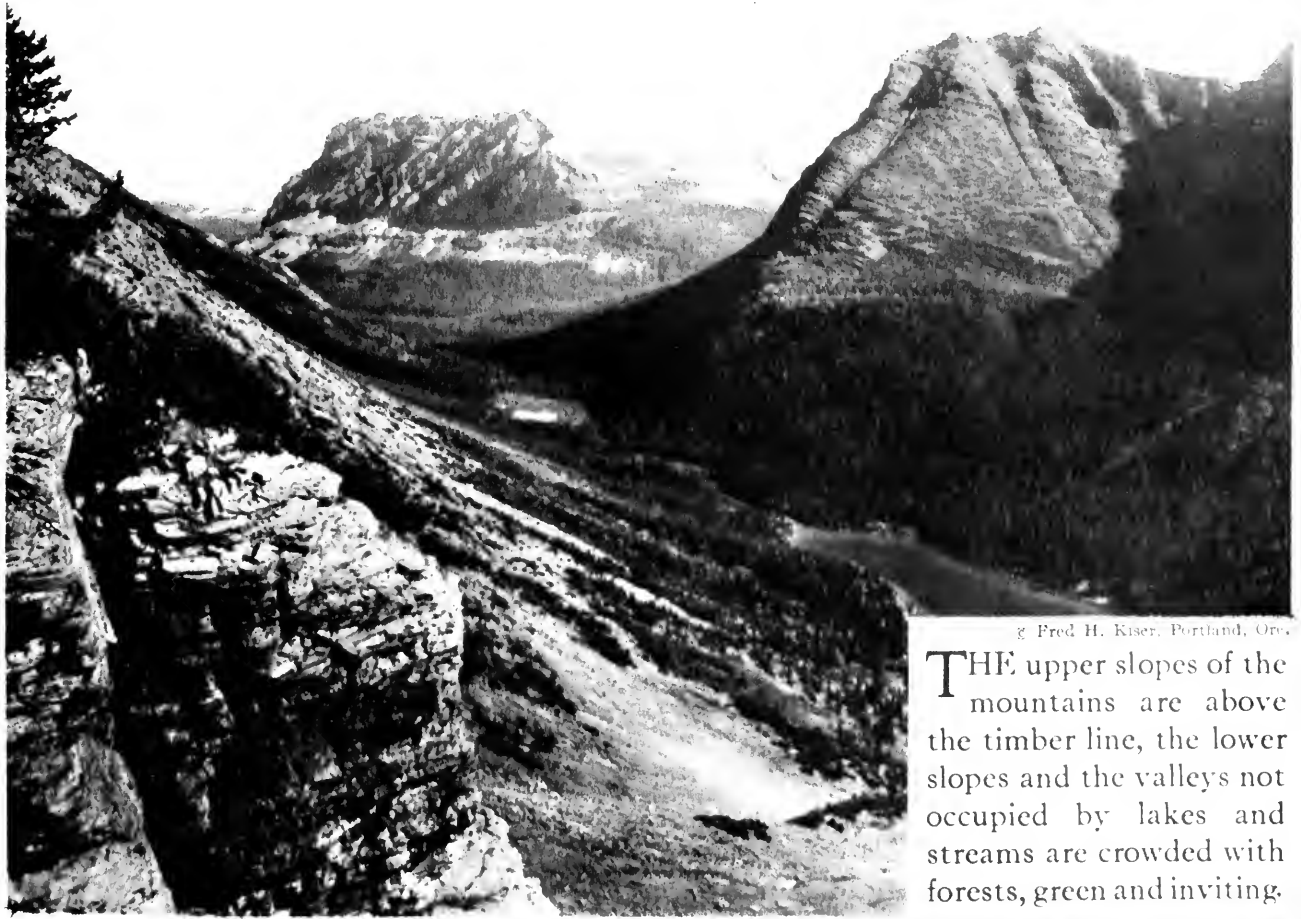


APPISTOKI FALLS nearby is well worth a visit, or enjoyment can be had in boating and fishing on Two Medicine Lake.



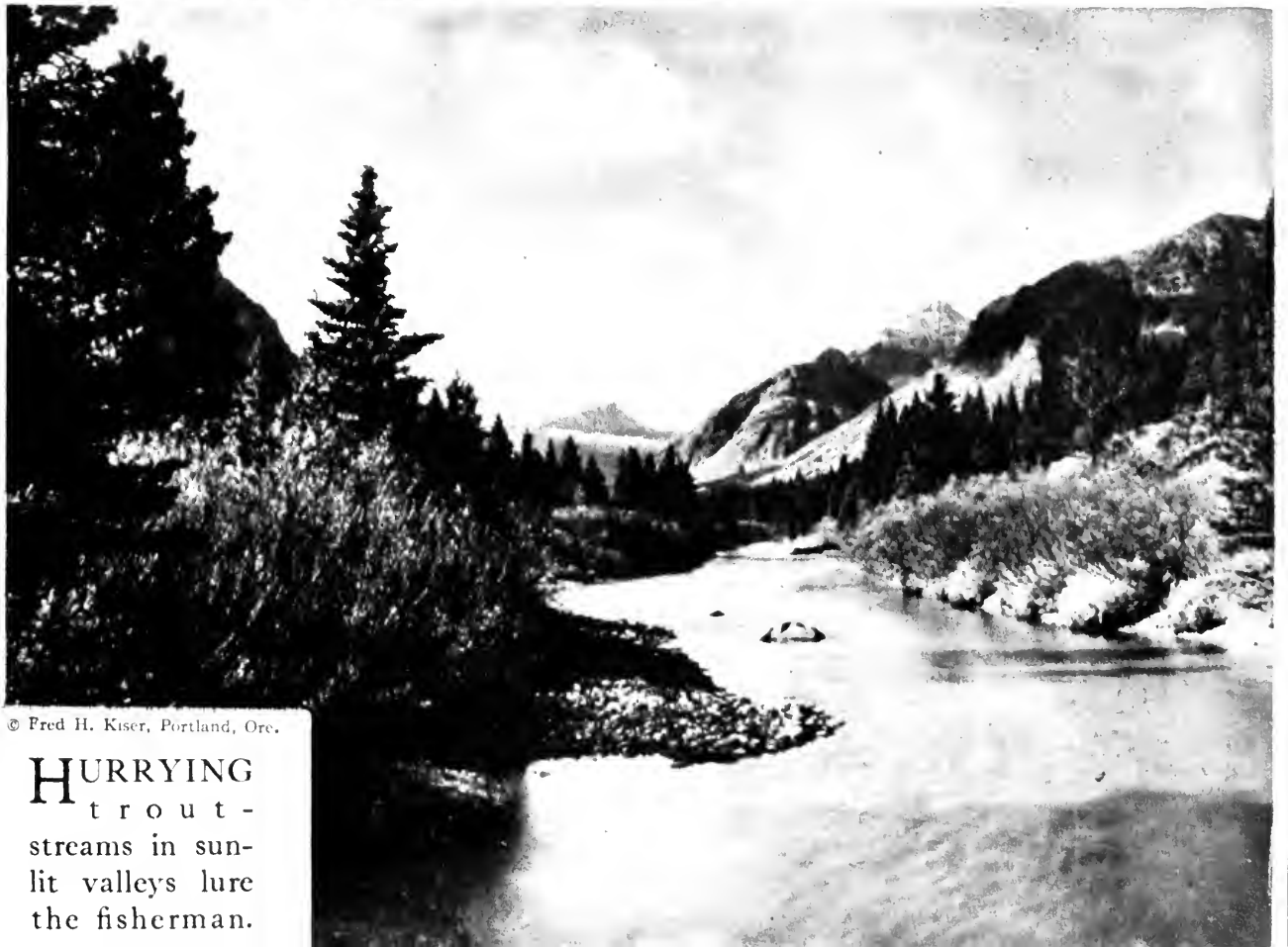
© Fred H. Kiser, Portland, Ore.

AT Trick Falls the Two Medicine River in a wondrously forested glen cataracts over the great lime-stone uplift that's called the Lewis Overthrust. Below the Falls, the blue-green Two Medicine sings among the pines.



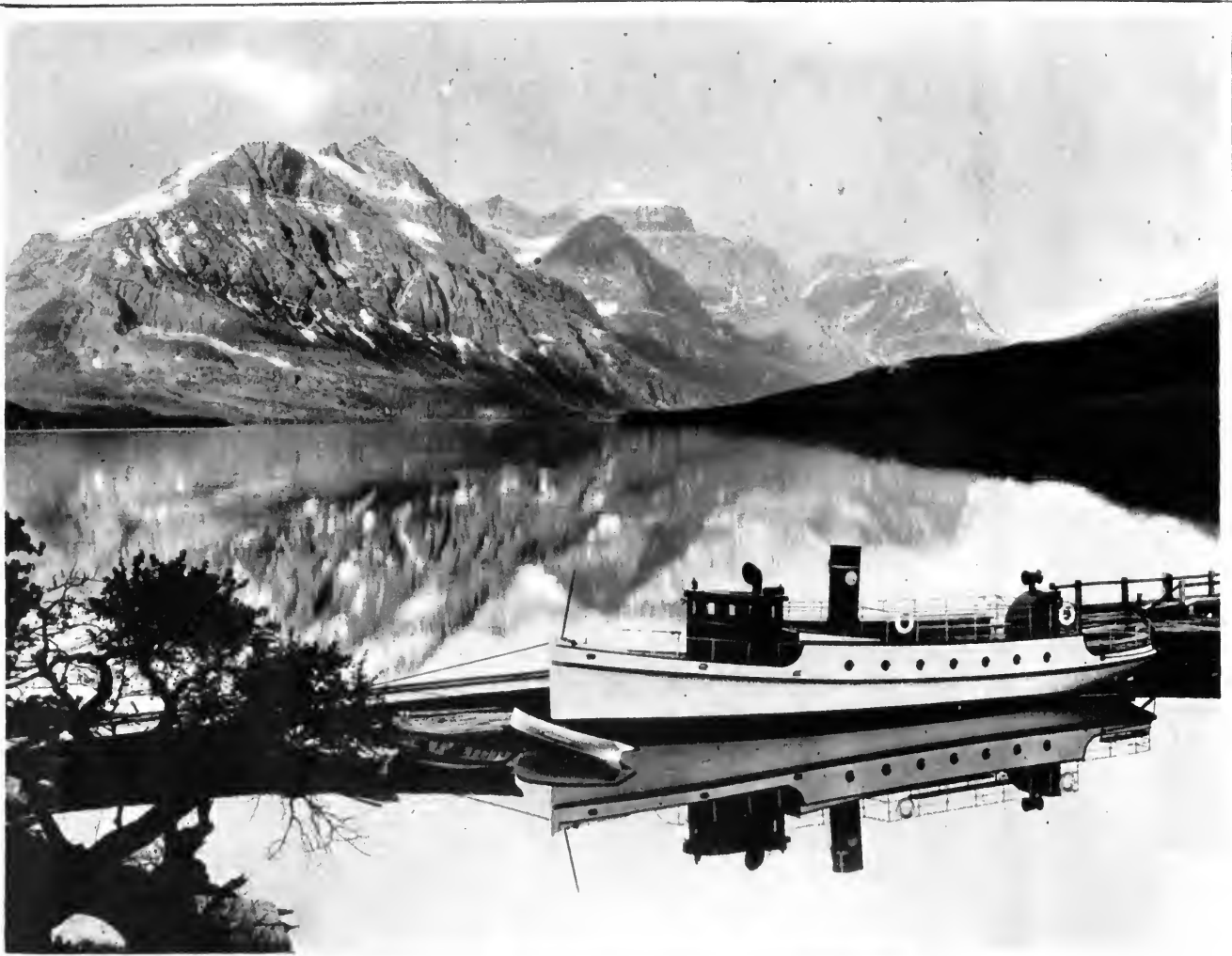
g Fred H. Kiser, Portland, Ore.

THE upper slopes of the mountains are above the timber line, the lower slopes and the valleys not occupied by lakes and streams are crowded with forests, green and inviting.



© Fred H. Kiser, Portland, Ore.

HURRYING trout-streams in sunlit valleys lure the fisherman.



© Hileman. Kalispell, Mont.

ON the East side of the Park, Lake St. Mary, azure jewel set in rocky crescent of purplish-grey, drinks in the melting ice and snows from Black-foot Glacier. You may cruise comfortably on Lake St. Mary in big, roomy launches.



IT is like sailing into a land o' dreams to do so, the shadows of the mountains, sunken reversed peaks seem to lure you to destruction, but as you glide silently into them, they tumble and slide into nothingness and with your passing reform amid the ripples.



Photo by K. G. J. Mitchell

YOU may tramp the flower carpeted and timber shadowed meadows, motor, cruise the lakes in launches or go over the high passes on horse back.



© Fred H. Kiser, Portland, Ore.

THE picturesque setting of Going-to-the-Sun chalet is unsurpassed in the American Rockies. Perched on a rocky promontory extending into the blue waters of St. Mary an awe-inspiring view presents itself from the chalet verandas.



FROM Going-to-the-Sun chalets trails of marvelous beauty, bordered with Indian fox grass, mountain daisies, yellow-dog tooth violets, clematis, syringa, blue bells, yellow columbine, blue larkspur, and hundreds of other wild varieties. This is the garden spot in a million acre flower garden.

© Fred H. Kiser, Portland, Ore.



© Fred H. Kiser, Portland, Ore.

GOING-TO-THE-SUN

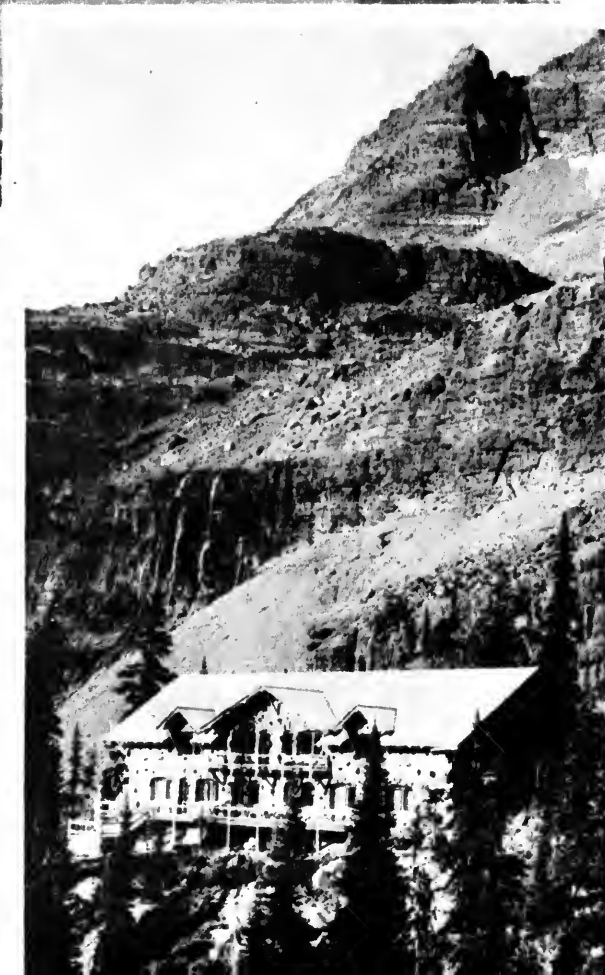
Mountain, sacred in Indian song and story, looms protectingly, lifting its classic peak to the blue of heaven's sky. Nowhere else in the Rockies are the mountains so friendly, so intimately yours, as here in Glacier.



SKYLAND trails lure you to intoxicating heights, thousands of feet above azure lakes and Alpine meadows, where you may see spread out before you a weird and wondrously beautiful panorama that invites the brush of the artist.



AN amphitheater, hollowed ages ago by the ice, holds the shimmering waters of Gunsight Lake. On its surface lie the shadows of many mountains and every little wisp of cloud that sails the sky is photographed in its depths.



© Fred H. Kiser, Portland, Ore.

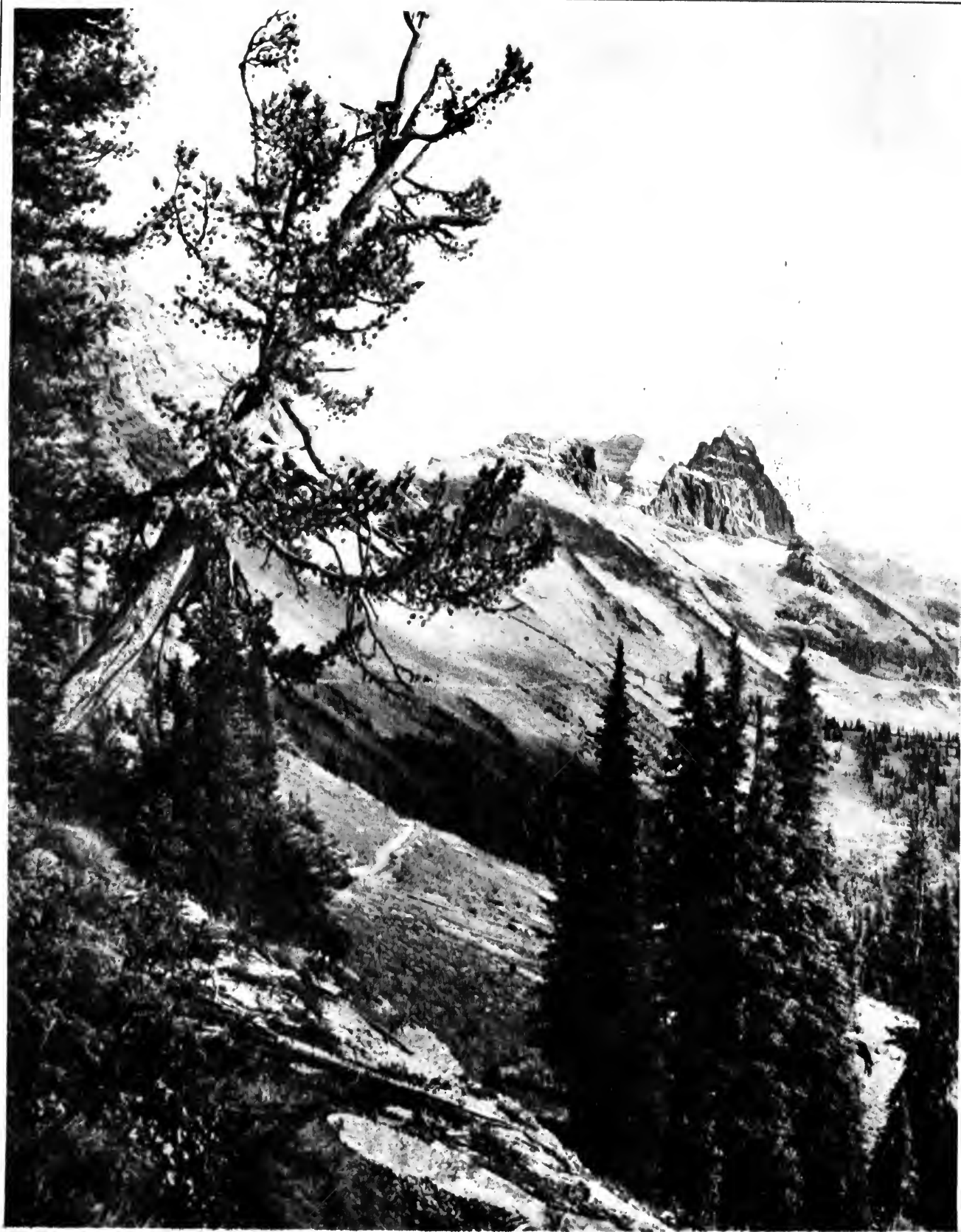
SWINGING along the shale rock slopes above Lake Ellen Wilson and over the Lincoln Divide, the trail descends suddenly into a circular rocky basin where the comfortable stone chalets of Sperry Camp nestle among the pines. Over the rocky headwall above lies Sperry Glacier.



THE V-shaped notch known to mountain men from Alaska to Mexico as Gunsight Pass. It is at the summit of the Continental Divide, but like most natural divisions between East and West its views are north and south.

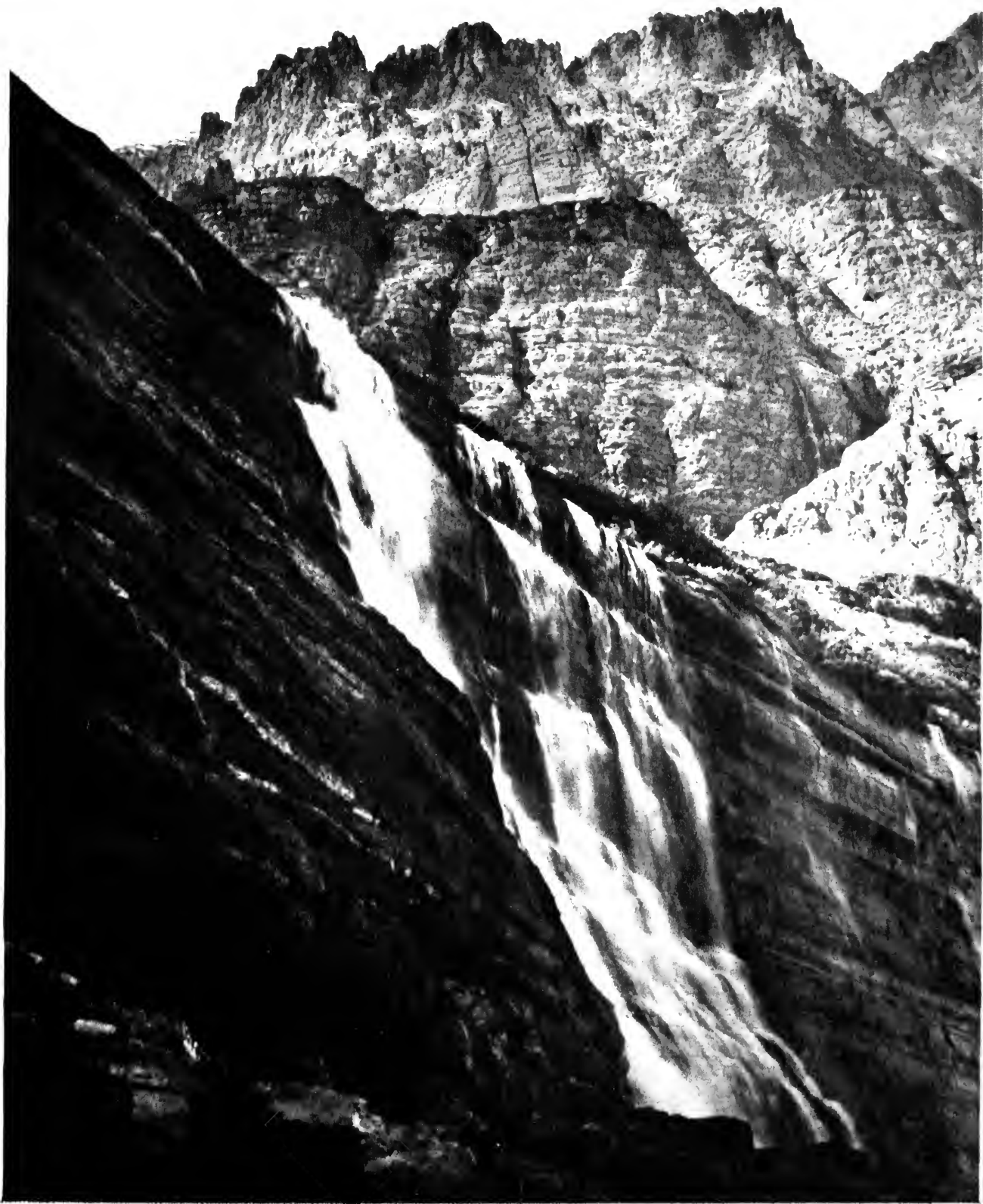


FROM its summit the view astounds. Arm-like masses of clouds reach gently out to pinnacles of stone and smother them, while ever and anon the sun drives straight through to the blue of lakes on either side 3,000 feet below.



© Fred H. Kiser, Portland, Ore.

THE crossing of the Continental Divide at Logan Pass in the early morning hours with the tang of the dew still in the air is one of keenest delight. The ponies step at a road gate along the Serpentine Trail, only pausing to drink at the sparkling little streams that are met with at every turn.



3. Fred H. Kiser, Portland, Ore.

MORNING Eagle Falls—Blackfeet christened—a cascade of milk white water whose shimmering beauty reflects all the colors of the rainbow as it cascades abruptly down rocky slopes, a vision of scenic loveliness which once seen can never be forgotten.



PERHAPS nowhere else in Glacier are the sunsets so gorgeous as McDermott Lake.

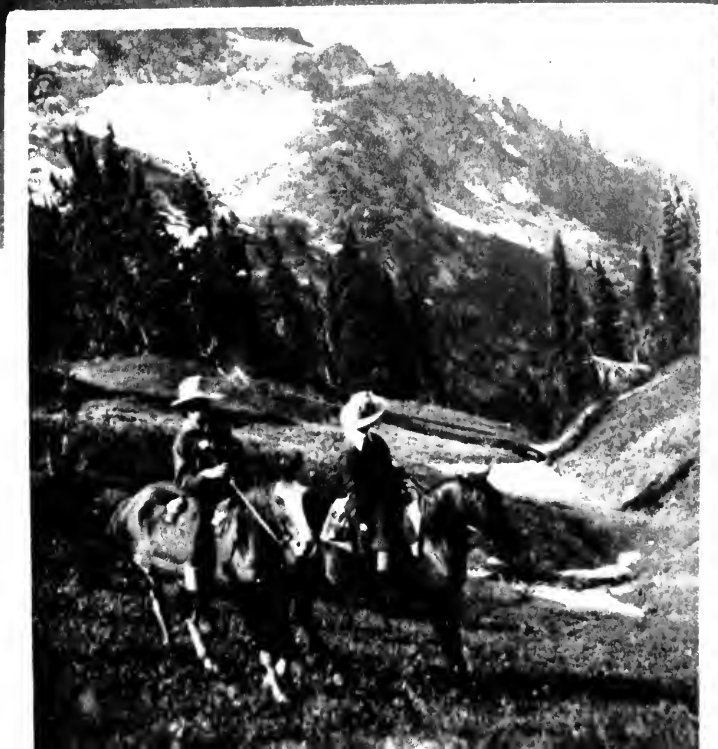
© Fred H. [unclear]

MC DERMOTT Lake is the grandest panorama in the Rockies. You will find the most remarkable hotels in America. It makes one wonder how they could build such a huge structure in such a remote spot. The hotel is built of timber hewed and sawed from spruce and balsam. From the top of "Many Glacier" a view opens slowly behind Mount [unclear] a pictured play of ever-changing



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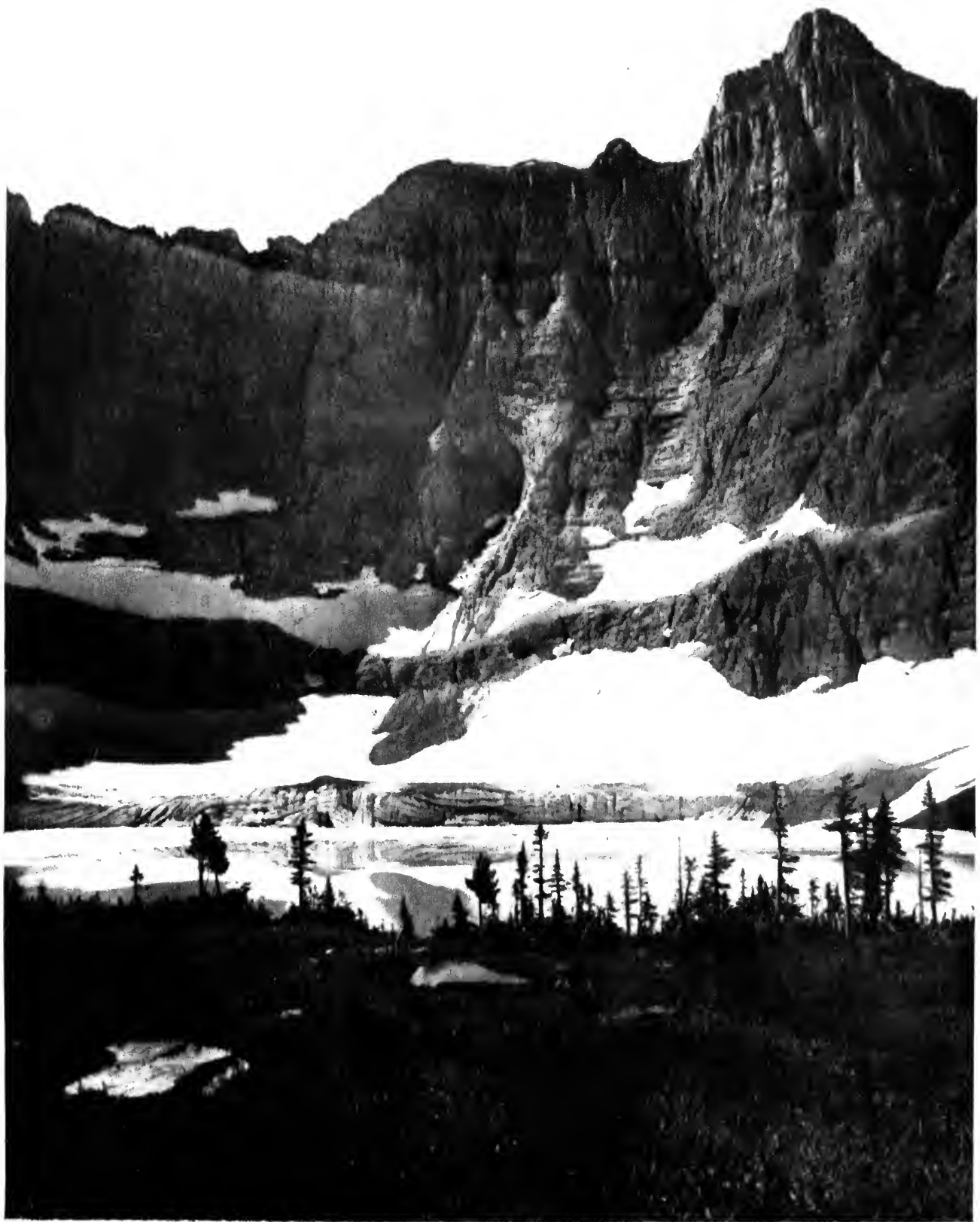
is set down in perhaps
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entide, as the sun sinks
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hanging colors.



“MANY GLA-
CIER” is a
focal point, from
which trails spread
fan-wise in all di-
rections.

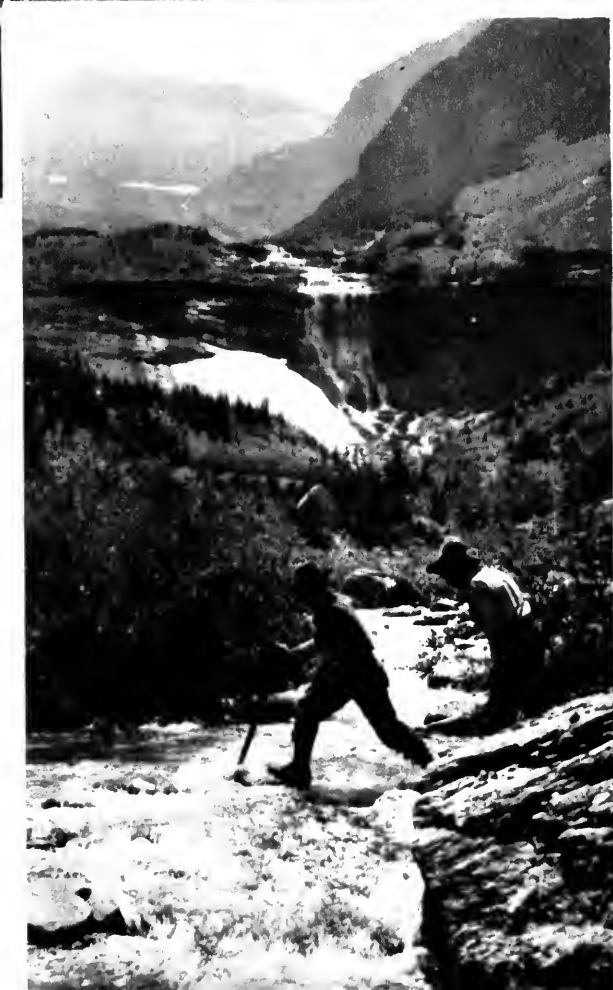


HERE one finds vast meadows made radiantly beautiful by thousands upon thousands of field and mountain flowers. Tumbling masses of color blending into a wondrous fantasy, like rainbows bruised at play, greet the eye on every side and make supreme this wondrously wild artistic disarray.



© Fred H. Kiser, Portland, Ore.

ICEBERG LAKE is tremendously interesting with a scenic appeal unlike any other lake in America. It is set down in the center of a horse shoe of rock, the walls of which rise perpendicular, thirty-five hundred feet above. You may see hundreds of miniature icebergs, cruising around the lake, some staunch and stalwart as battleships, a great white fleet, and others listing to one side, bombed by the winds and torpedoed by the waves.



© Fred H. Kiser, Portland, Ore.

THERE are lakes to capture the heart of every visitor to Glacier National Park. Lakes as blue as sapphires, glowing with gold at sunset, mirror the shore line mountains and invite the brush of the artist. Lakes of varied size—long shining silver lakes, round and blue, high up in mountain pockets.

FOR the average man a hiking trip through Glacier National Park is entirely feasible. The bracing atmosphere is of greatest worth as a stimulation to physical well-being, and this getting near to Nature in all her rugged grandeur is soul satisfying, and in perfect accord with one's primitive love of the great outdoors.



LAKES of rarest beauty mirroring the mighty mountains and shoreline timber give Glacier a scenic appeal that is distinct from that in any other national park. Josephine Lake is an outstanding beauty spot possessing irresistible charm and individuality.



© Fred H. Kiser, Portland, Ore.

RIDING into the sun set over trails flower bedecked, at the end of a day's journey, to a crackling log-fire in hotel or chalet is to know nature in her most transcending mood.

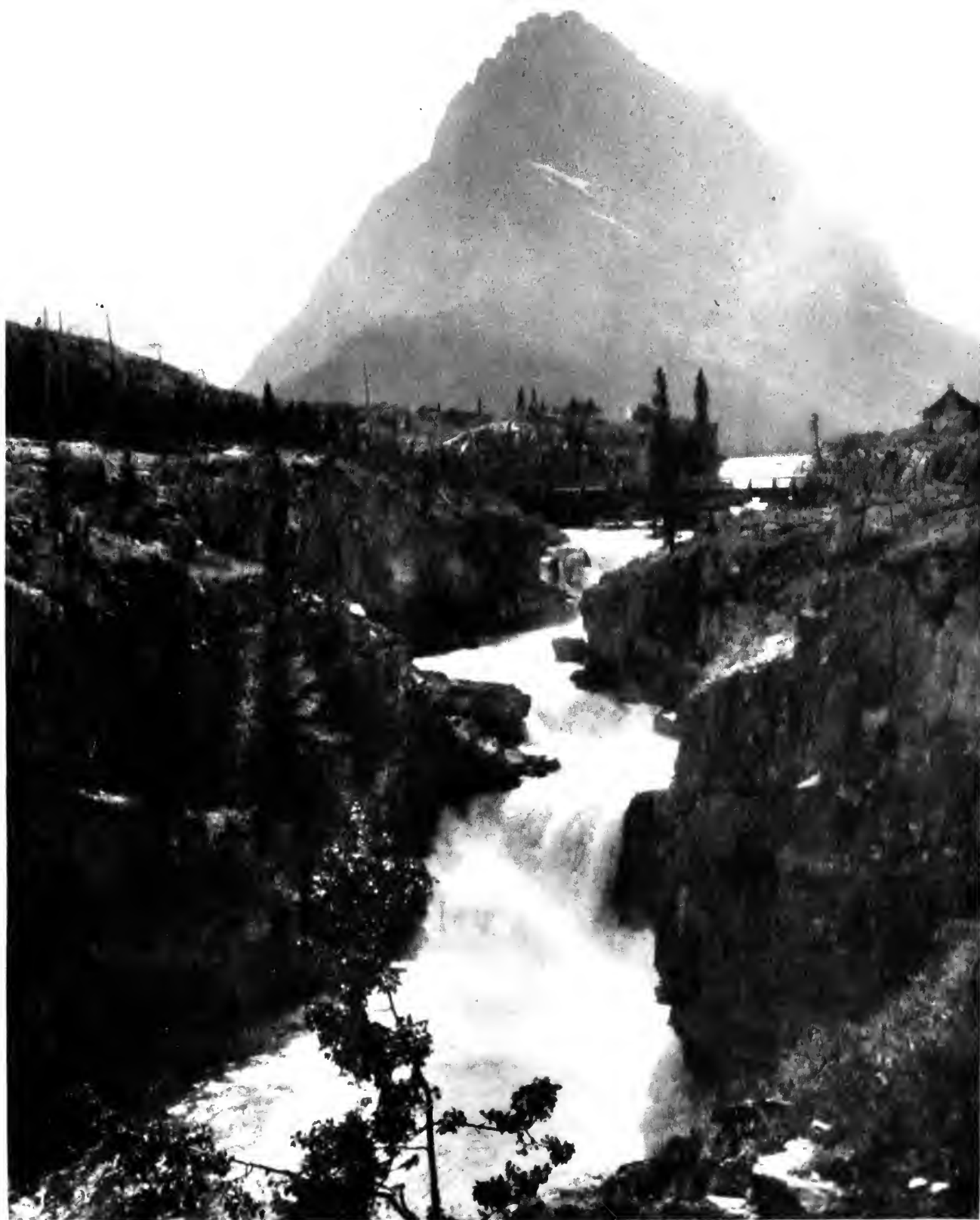


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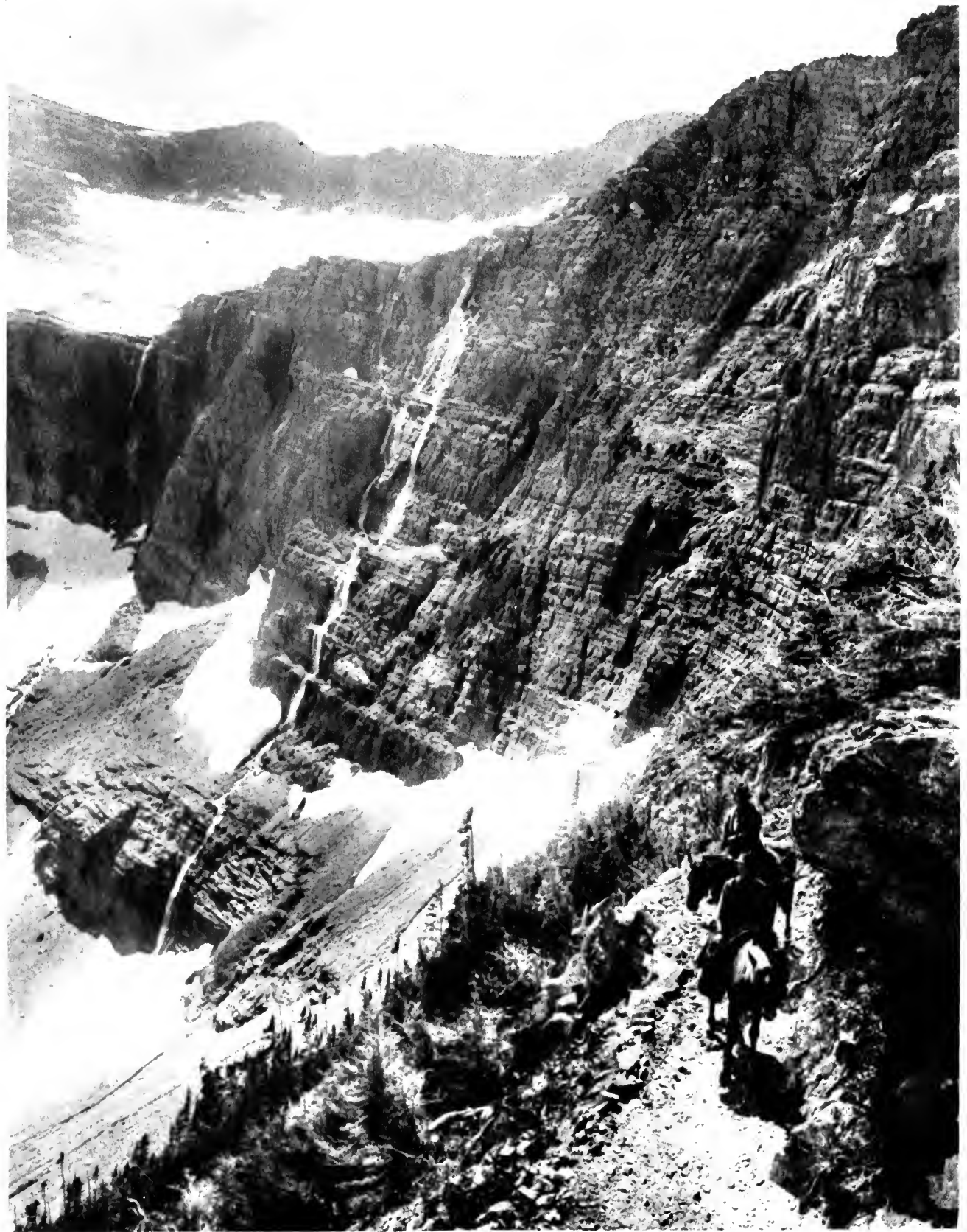
G RINNELL
GLACIER,
Gould Mountain,
and Josephine
Lake — a sym-
phony in water,
rock and foliage
—it has taken Na-
ture millions of
years to compose.



YOU may see
mountain
goats impressively
treading their
perilous paths on
skyland trails.
Shy, but inquisi-
tive, you may
sometimes ven-
ture close to these
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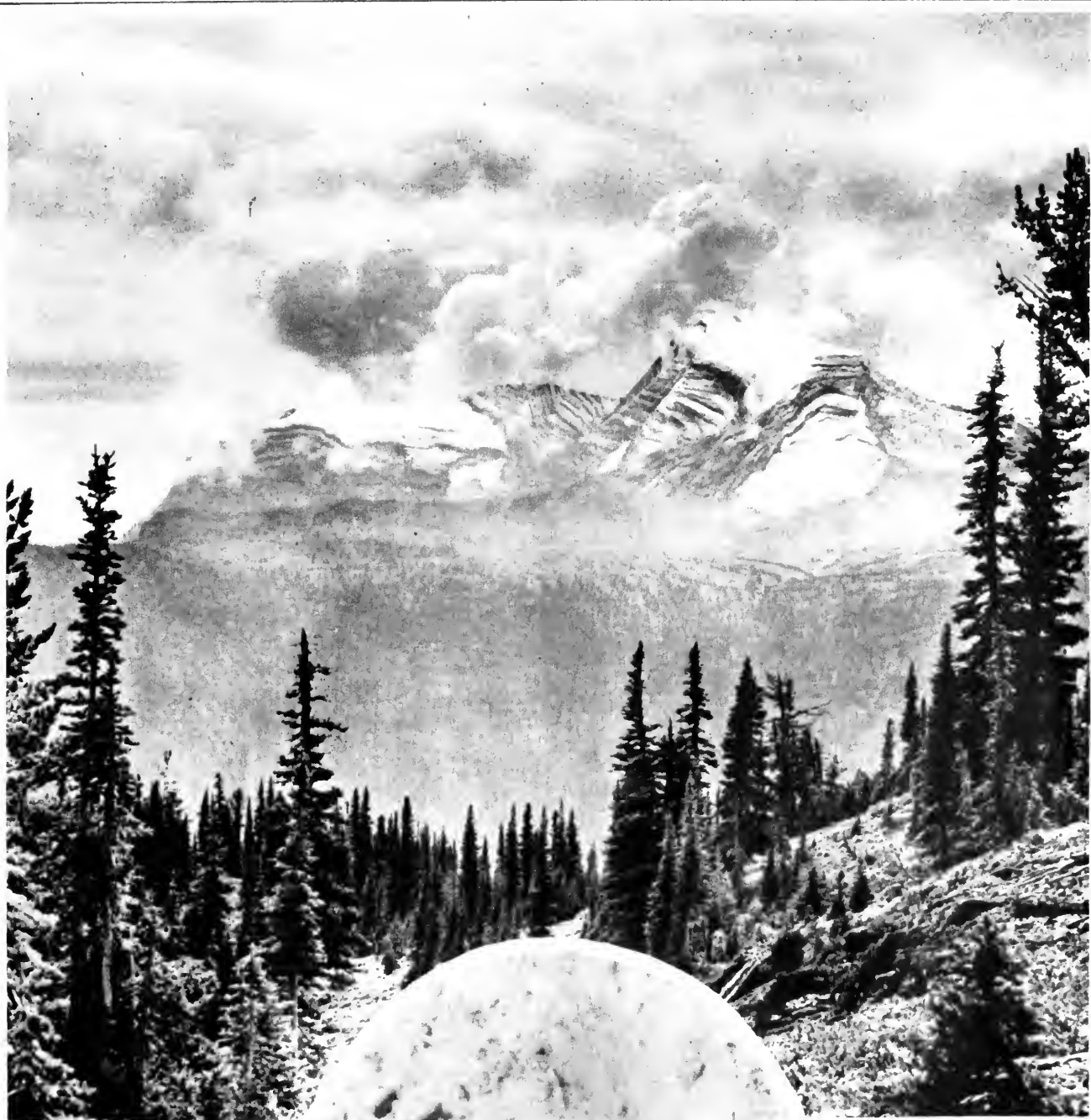


MC DERMOTT FALLS, a sparkling, foaming, twisting torrent of green-blue water cascading over age old rocks cut into fantastic shape by the action of the waters.



© Fred H. Kiser, Portland, Ore.

THE climb by saddle-horse from "Many Glacier" over Swift Current Pass Trail to the Continental Divide is a most fascinating travel experience. From the Pass, near to seven thousand feet above sea level, you may overlook all of the tumbling peaks of the Swift Current Valley.



© Fred H. Kiser, Portland, Ore.

THERE 'mid the disarray of towering and snow-tipped peaks, giant pawns on the chess board of creation, sparkling lakes of wondrous azure and rocky amphitheatres, you may play with the freedom of the big outdoors.



IT is the awesome bigness, this dominating bulk and the smallness of oneself in comparison that brings out the everlasting desire to give way to pent-up emotions and —holler.

THE Cut Throat, the Rainbow, the Dolly Varden, the Eastern brook trout and the Mackinaw, good fighters all, will match their skill against you.



THE U. S. Government, Bureau of Fisheries, in conjunction with the National Park Service, have devoted their energies to making Glacier Park one of the finest fishing reserves in the world.



BYOND Many Glacier Hotel there is an extravagant piling up of resplendent, lofty ridges, in an unequal line of spires and peaks, of points and crags—their deep sun-protected recesses vast receptacles for the inevitable masses of eternal snow.



NORTH from the Glacier Park Hotel a distance of 55 miles is the Many Glacier Hotel in the heart of the mountains. The broad auto highway connecting them winds now over flower carpeted foothills, now along forested mountain sides, now along the shores of lakes and rivers. A wonderful scenic panorama unfolds itself as the auto speeds along.

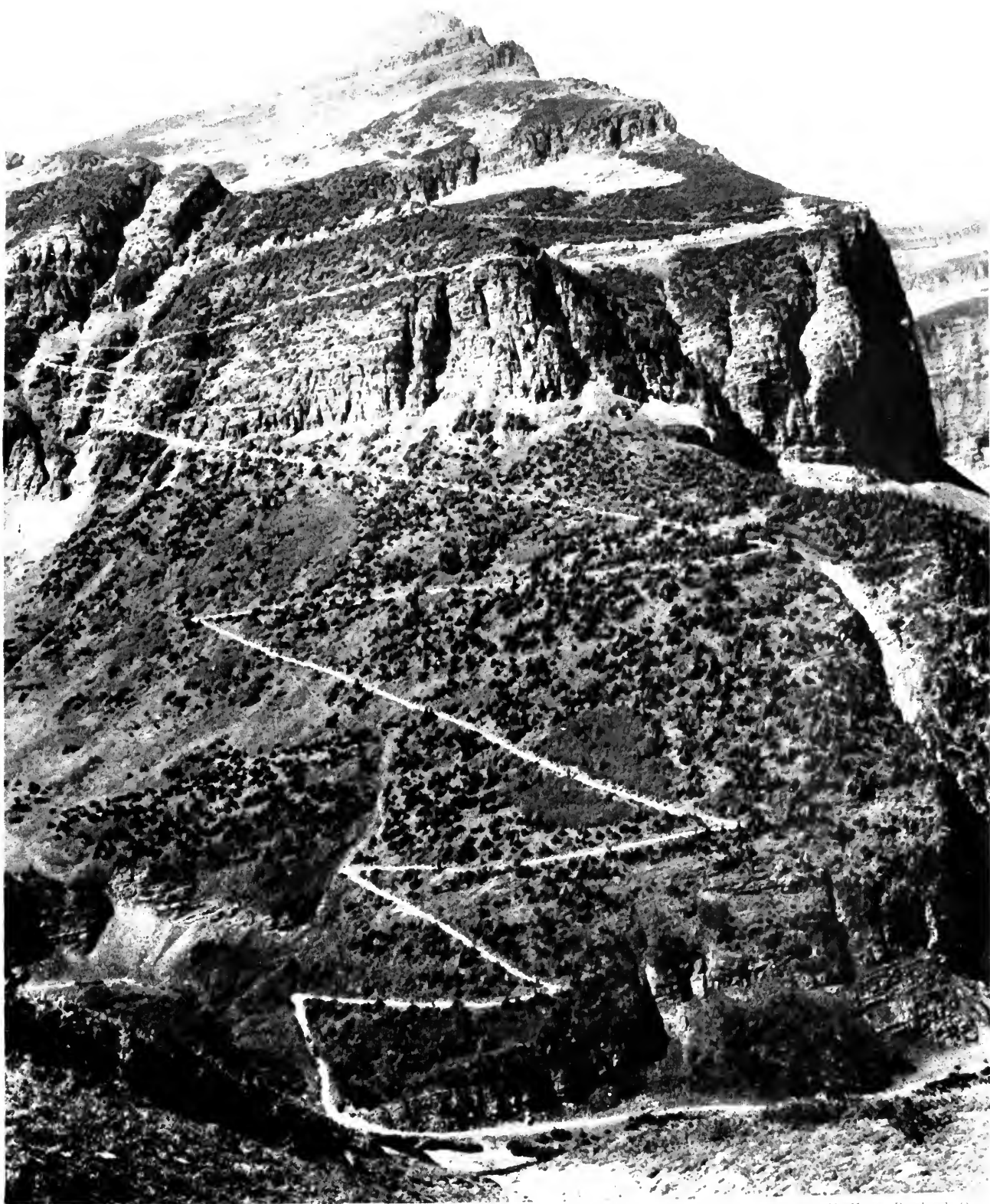




THE Blackfoot Indians call Glacier "The Land of Shining Mountains," and like the white man make it their summer playground. The Park abounds in mountains, lakes, and waterfalls, hunting or war paths, haunts of the early Blackfoot, still bearing the original Indian names.



THE Blackfoot Reservation adjoins Glacier National Park on the East.

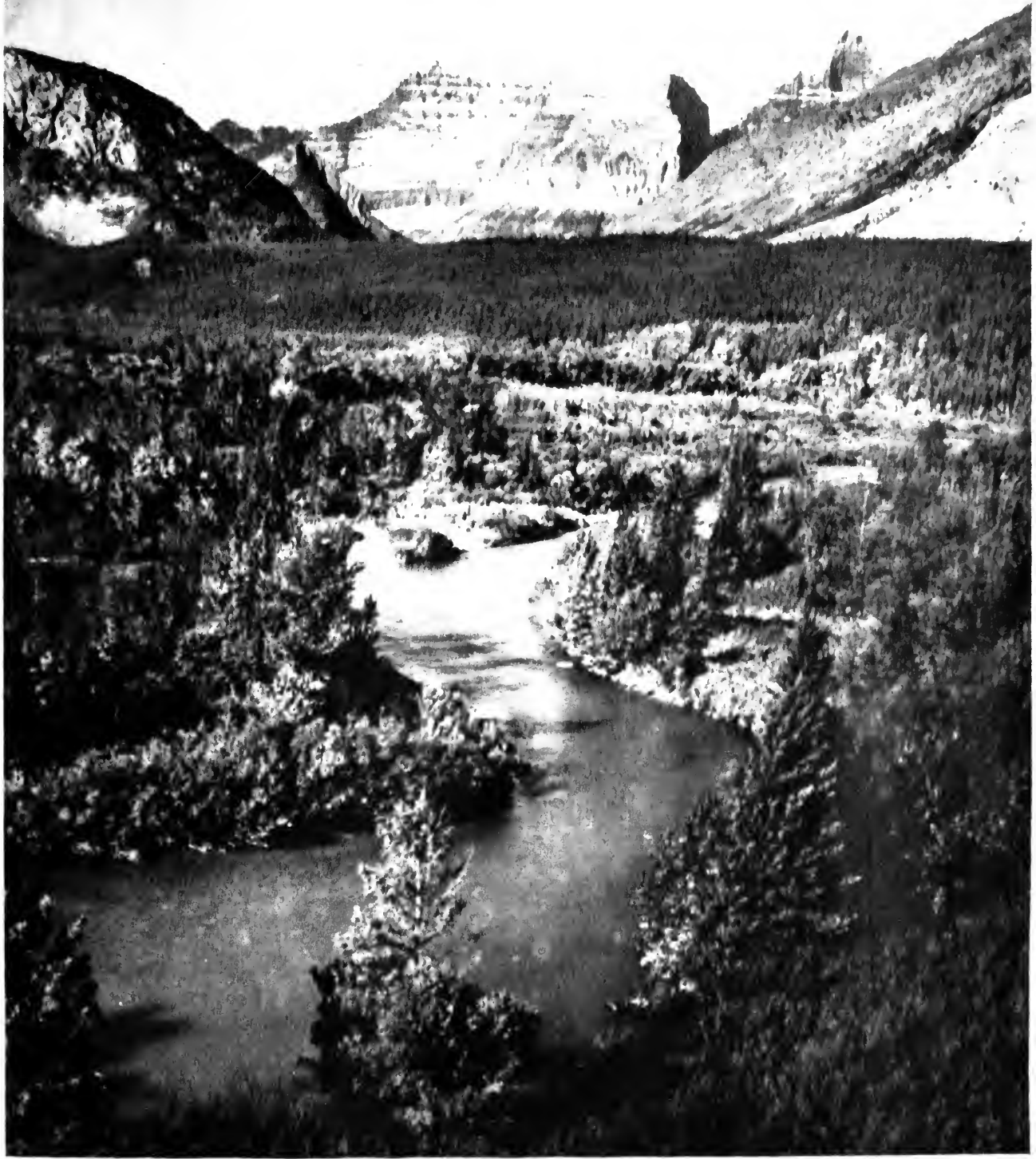


© Fred H. Kiser, Portland, Ore.

THERE'S an incomparable bigness about Glacier that is difficult to understand. Riding or walking along the zig zag forest hemmed trail over Swift Current Pass one realizes how atom-like we humans are in the huge plan of creation



HE or she who walks enjoys this tremendous out-of-door-land to the full. The freedom to go precisely where and when one pleases, to stop where one pleases and as long, the keen exhilaration that the glorious mountain air brings to the Park pedestrian, are worthwhile advantages possessed by the "walking way."



© Fred H. Kiser, Portland, Ore.

NORTHWEST from Granite Park Chalets lies the Belly River Country to tempt the Tourist who wants more scenic thrills and wilder country. Here is Mt. Cleveland, tallest of all the skyscrapers, 10,438 feet amid a jumbled mass of peaks, valleys, lakes, rivers and waterfalls, providing a constant succession of scenic surprises.



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Glacier National Park
is on the main transcontinental
line of the

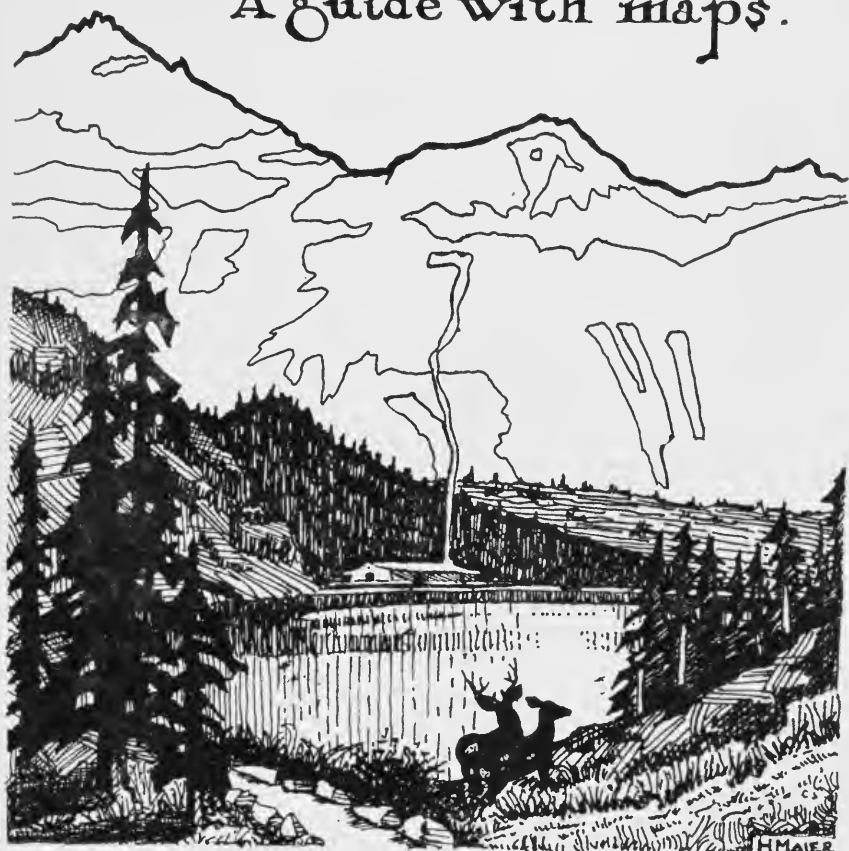
GREAT NORTHERN

HIKERS' CAMPS

of

Yosemite National Park

A guide with maps.



BULLETIN I

YOSEMITE NATURAL HISTORY ASSOCIATION

A PERSONAL INVITATION.

YOSEMITE NATIONAL PARK IS YOURS! WE OF THE NATIONAL PARK SERVICE WANT TO HELP YOU TO MAKE FRIENDS WITH YOUR PARK AND TO UNDERSTAND IT IN ITS EVERY MOOD. ALL OF THE FOLLOWING SERVICE IS OFFERED TO YOU *free* BY YOUR GOVERNMENT:

Visit the Yosemite Museum!

Here you will learn the full story of the Park — what tools were used by the great Sculptor in carving this mighty granite-walled gorge; who lived here before the white man came; how the Days of Gold led to Yosemite's discovery; how the pioneers prepared the way for you; and how the birds and mammals and trees and flowers live together in congenial communities waiting to make your acquaintance.

Plan your trail trips on the large scale models in the Geography Room.

The Yosemite Library in the museum provides references on all phases of Yosemite history and natural history.

Popular lectures on Yosemite geology and other branches of natural history are given by nature guides at scheduled times each day.

The nature guide on duty will be more than willing to answer your questions on any subject.

Go Afield with a Nature Guide!

Take advantage of this free service that will help you to know your Park. A competent scientist will conduct you over Yosemite trails, and from him you may learn first hand of the native flowers, trees, birds, mammals, and geological features.

See Schedule of Nature Guide Field Trips.

Visit Glacier Point Lookout!

From there you will obtain an unexcelled view of Yosemite's High Sierra. The binocular telescope will bring Mt. Lyell to within one third of a mile from where you stand; you can recognize friends climbing trails several miles away. The Nature Guide in attendance will help you to operate it and will explain what you see.

A small library is at your command.

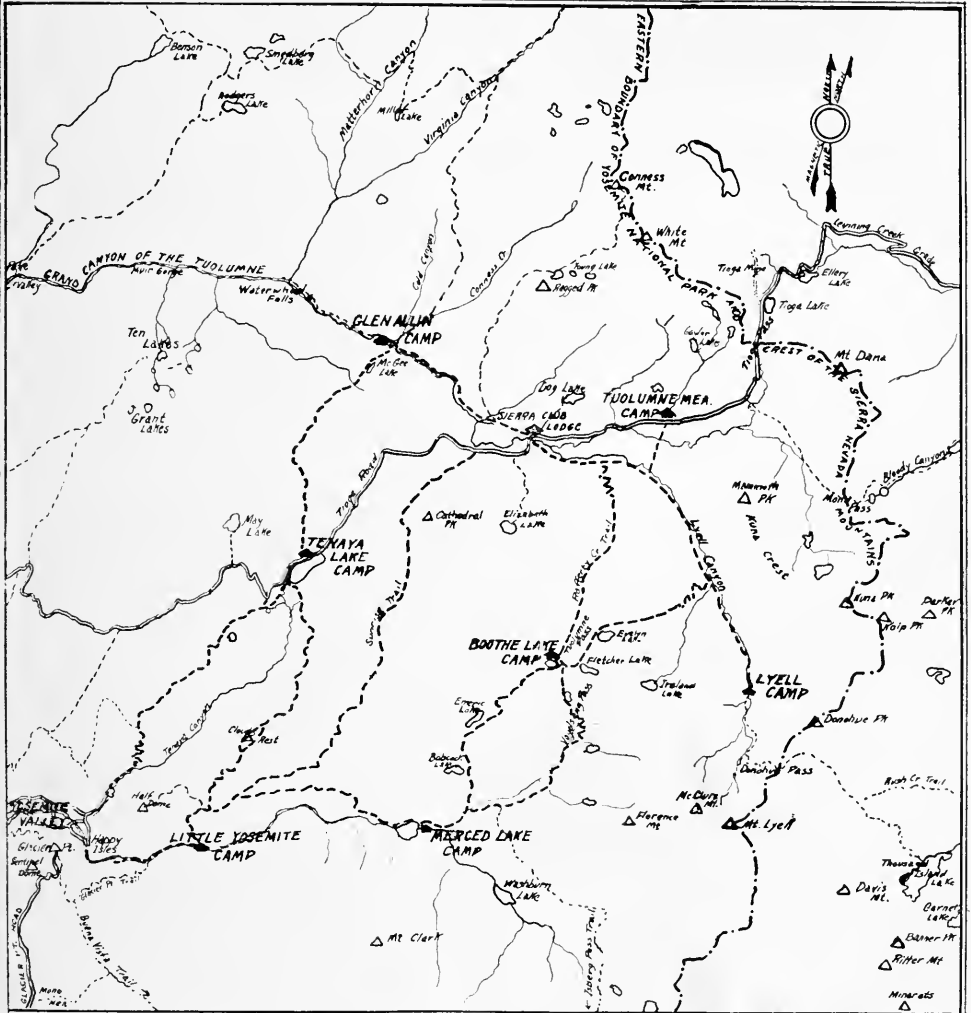
You will enjoy the informal nightly campfire talks given here.

Attend the Nature Guide Campfire Talks!

In addition to the museum lectures members of the educational staff give talks as a part of the evening program at Camp Curry and Yosemite Lodge. Non-technical explanations of how Yosemite came to be; what you may expect of Yosemite bears; how the local Indians lived; what birds you see about your camps; what trout you will catch in Yosemite waters; how you may best visit the wonderland of the summit region; and scores of similar subjects are given by the National Park Service Nature Guides.

ALL OF THESE OPPORTUNITIES ARE PROVIDED FREE OF CHARGE BY YOUR GOVERNMENT.

—TAKE ADVANTAGE OF THEM—



MAP OF HIKERS' CAMPS IN YOSEMITE NATIONAL PARK

LEGEND

--- Trails ≈ Roads ■ Hikers' Camps Δ Peaks ○ Lakes

SCALE 0 1 2 3 4 5 6 7 8 9 10

HALL-1025

DISTANCES

Yosemite to Little Yosemite	6.5 miles.
Little Yosemite to Merced Lake Camp	9.5 miles.
Merced Lake to Boothe Lake Camp	
Via Babcock Lake Trail	7.6 miles.
Via Vogelsang Pass	9 miles.
Boothe Lake to Lyell Base Camp	9.5 miles.
Boothe Lake to Tuolumne Meadows (Rafferty Creek Trail)	9 miles.
Lyell Base Camp to Tuolumne Meadows	9.5 miles.
Tuolumne Meadows to Glen Aulin (River Trail)	5.5 miles.
Glen Aulin to Tenaya Lake (McGee Lake)	7 miles.
Tenaya Lake to Yosemite Valley	14.2 miles.

HIGH SIERRA CAMPS FOR HIKERS

By C. P. RUSSELL

Park Naturalist, Yosemite National Park

Can you enjoy hiking ten miles a day through the amazing beauty of the High Sierra? Then tie a lunch to your belt and go.

The vacationist who loves to leave the crowd behind may gratify his most ardent desires this summer even in the popular Yosemite. Hikers' Camps are opened in the wild back country. One may start on a lengthy trip into the high country with no more thought or preparation than were it to be a day's climb to Glacier Point and return. At the end of each day's travel will be found a bounteous camp-cook's spread and a bed.

And to take advantage of these accommodations it is not necessary to follow the beaten paths made commonplace by the tread of throngs! The camps are situated on the most beautiful of Sierra trails in spots near the greatest wonders—wonders undreamed of by the tourist who believes he has seen Yosemite when he but visits the valley and its adjacent "rim."

It is quite impossible to feel the true spirit of your park if you but visit Yosemite Valley. Until recently it has been an expensive undertaking to leave the crowds and go up into the wild wonderland beyond the rim, but these remarkable camp accommodations eliminate the problem of expense. Actually, it costs no more to enjoy Yosemite's high country than it does to live at home.

Until the advent of this development, the mountain lover who wished to visit the best of Yosemite National Park found it necessary to employ a train of pack animals and a packer, or to carry his equipment on his back. The first method was discouraging because of the cost, and the second because its resulting fatigue robbed such an excursion of its joy except for the strongest of enthusiasts. Now, however, Yosemite's high country is opened to *all*. For those who feel that even the short distances between camps is too much to be covered on foot, saddle animals are available at reasonable rates.

The trails through the scenic High Sierra are well marked and perfectly safe and may be traveled without a guide. Consult the schedule of High Country trips offered by the Yosemite Nature Guide Service if you wish to go with a government naturalist. No charge is made for this service. The Yosemite Museum staff will be pleased to supply full information on all Yosemite trails.

REMEMBER

DO NOT MAKE SHORT CUTS; STAY ON THE TRAILS

You may start rocks rolling that will injure other hikers far below. Continual short-cutting damages trails and misleads other hikers.

YOU NEED CARRY NO EQUIPMENT

Fishing tackle is not to be had at camps. Take your own. One should be provided with toilet necessities, camera, and a sweater. Lunches will be packed for you at the camps. All heavy equipment is provided at Hikers' Camps.

MEALS AT CAMPS ARE BUT 75c; BEDS ARE 75c

All who make use of Hikers' Camps will be grateful to the concessionaires who provide these facilities at cost. You should be prepared to make payments at each camp.

SADDLE ANIMALS ARE AVAILABLE FOR THOSE WHO DO NOT HIKE

Parties may arrange to rent saddle horses if they prefer to ride. Reservations should be made at Camp Curry or Yosemite Lodge.

THE NATURE GUIDE SERVICE SCHEDULES HIGH COUNTRY TRIPS

It should be understood that a guide is not necessary, but to extend the educational service to the most interesting features of the park the National Park Service provides Naturalists who escort parties into the High Sierra. You may learn first hand of the natural history of the trail side. This service is free. See schedule at Yosemite Museum.

IT IS NOT NECESSARY TO SPEND 8 DAYS IN VISITING HIGH COUNTRY

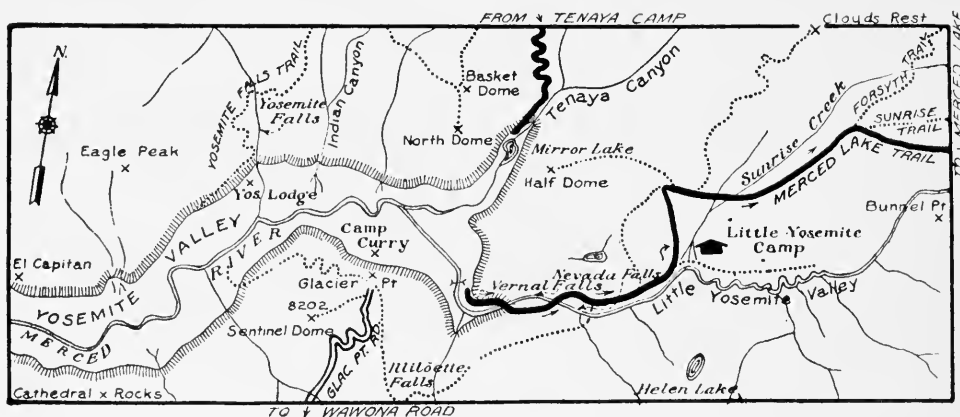
You will learn from the accompanying map that any number of camps may be visited. It is not necessary to include all camps in your itinerary.

YOU MAY DISCOVER FOR YOURSELF THAT YOSEMITE VALLEY IS NOT ALL OF YOSEMITE NATIONAL PARK

Very few of the hundreds of thousands who have visited Yosemite have seen more than Yosemite Valley. To most people the valley seems to be Yosemite National Park. Hikers camps will do much to make it known that Yosemite Valley is indeed a very small part of the 1,125 square miles of the park.

RESERVATIONS MUST BE MADE BEFORE STARTING

The number that can be accommodated at camps is limited. That there may be no misunderstandings and disappointments you should make reservations before starting. This should be done at Camp Curry or Yosemite Lodge. Reservations for the Nature Guide High Country Hike should be made at the Yosemite Museum.



HOW TO REACH LITTLE YOSEMITE CAMP

Local bus service provides transportation to Happy Isles, 2.3 miles from the village. Our well-marked trail turns to the right just beyond the bridge. Following the canyon of the Merced, we climb up the great steps over which plunge Vernal and Nevada Falls, and after a leisurely half-day of hiking we find ourselves in a beautiful park-like miniature Yosemite Valley.

The Little Yosemite Camp is situated most pleasantly against the north wall of the valley at a point where Sunrise Creek cascades with unceasing music upon the valley floor. Sheltering Jeffrey Pines throw their shade upon the tents, and extending some hundreds of yards before the camp is a broad opening in the forest through which approaches the trail from Yosemite.

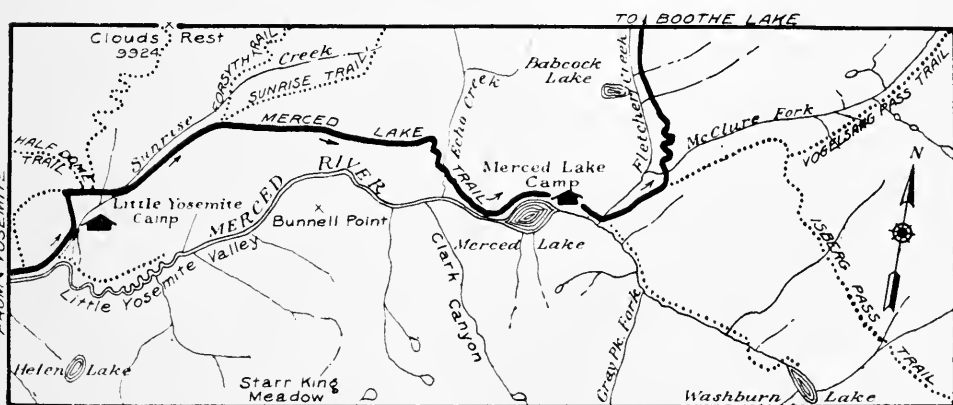
There is much within the valley to interest the visitor. Kah-win'-na-bah', a former village of the Yosemite Indians, was located here, and mortar holes cut in great slabs of granite now mark the site of the ancient grist mills. These relics of another race are but a ten minute walk from the Hikers' Camp. Deep pools of the river contain splendid Loch Leven, Eastern Brook, and Rainbow trout. Along the river and throughout the valley are gigantic specimens of the Sugar Pine. In many places the ground is littered with the beautiful, long cones of this tree. Perfect examples of Jeffrey Pine growth may be seen, and much of the forest is made up of Lodgepole Pine. At the lower end of the valley near the lip of Nevada Falls are numerous picturesque Western Junipers.

A thrill is in store for all who have never seen glacial polish. The junipers of the lower end of the valley grow upon rocks which still bear the marks of the grinding ice. Patches of glassy, enamel-like surface have withstood the weathering of 20,000 years, and it seems that the ice melted but yesterday. In three places in Little Yosemite moraines mark the one-time locations of the glacier's snout.

In a miniature way most Yosemite features are exhibited here. Domes, Royal Arches, and cliff walls remind one of the giant carvings in Yosemite Valley, but here the walls are but 2,000 feet high and the domes are modeled on a smaller scale. The beautifully rounded Sugar Loaf Dome and the great buttress of Bunnell Point are characteristic features of the place. To the north is seen the rounded profile of the back of Half Dome, and east of it one of the Pinnacles of Clouds Rest projects sharply from the skyline.

With Little Yosemite Camp as a base even inexperienced hikers may ascend Half Dome and Clouds Rest. A newly cut trail starts from the camp and provides a direct route to the Merced Lake Trail, from which marked branches lead to these latter summits. At the head of Nevada Falls will be found the beginning of the Panorama Trail to Glacier Point. This route provides a most interesting way of returning to Yosemite for those who cannot spare time to visit more High Country Camps. The Starr King Plateau is accessible from Little Yosemite also.

Three other Hikers' Camps lie within one day's walking distance. Tenaya Lake Camp may be reached by the Forsyth Pass Trail. The Sunrise Trail leads northward to Tuolumne Meadows Camp. Ten miles to the East is the Merced Lake Camp, a camp of remarkable facilities and accommodations, located in the midst of unequalled trout waters and glaciated grandeur.

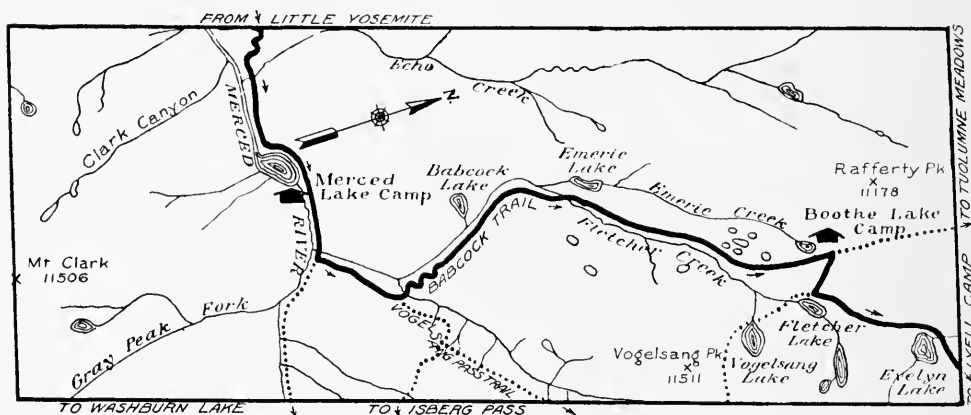


WHAT TO SEE AT MERCED LAKE

Very near the Little Yosemite Camp our trail climbs the north wall of the valley. After one and a half miles of climbing we come to the junctions where the Half Dome and Clouds Rest Trails turn left. The Merced Lake Trail turns to the right. Two miles beyond this last junction the Sunrise Trail to Tuolumne Meadows branches left. Beyond this point the Merced Lake Trail passes through most interesting open granite country. Western Junipers and gnarled Jeffrey Pines growing sparsely on the glaciated slopes add much to the beauty of the unique landscapes. Impressive views of the Little Yosemite far below and the serrations of the Clark Range to the south tempt one to linger at the many vantage points. Marmots are numerous and amuse with their serious corpulence as they sprawl comfortably upon glaciated boulders. Slender-billed Nuthatches busy themselves in the Junipers, and Green-tailed Towhees pour their rippling songs from every clump of chapparal that succeeds in growing among the shining rocks. Descending from this region of unbroken views, the trail parallels the river, which here roars through a succession of rapids and cascades. Not far above is beautiful Merced Lake, occupying the deep granite basin carved out by ice. At the upper end is a most elaborate camp, which circumstances have made available to hikers at the ridiculously low prices advertised.

It is safe to say no other high mountain resort in the world has similar accommodations to offer at Hikers' Camps prices. Hot shower baths are welcomed by the elated traveler, and the beds provided are as comfortable as could be expected in the best of hotels. Hikers should not use the Merced Lake Lodge as a basis in judging the camps. It was not planned that Hikers' Camps should afford such luxuries.

Fishing is excellent in the lake and in Washburn Lake a few miles above, as well as in the river between the two lakes. The altitude here is 7200 feet. From this base the ascent of Florence Mountain and Mount Clark or its lofty neighbors may be made. Within a day's walk are Yosemite Valley, Tenaya Lake via Forsyth Trail, Tuolumne Meadows via Tuolumne Pass, and Boothe Lake Camp via Tuolumne Pass or Vogelsang Pass. A very short day westward is Little Yosemite Camp.



BOOTHE LAKE CAMP 10,000 FEET ABOVE SEA

Can you feel a thrill in tramping over unexplored granite heights? Do you find a satisfaction in discovering unnamed and unmapped glacial lakes? Have you a love for the situations of the Sierra timberline?

Then hie you to that wonderland about the Tuolumne Pass made accessible by the Boothe Lake Camp. This third camp in the series of HIKERS' CAMPS is nearly two miles higher than San Francisco. It is located upon a perfect gem of a rockbound lake, unnamed upon maps, but for some time designated locally as Boothe Lake. Before the camp spreads a frontage of white sandy beach and the entire length of this alpine lake beauty. Hemmed in at the back by picturesque cliffs, the tents are well protected from chill winds, which at this altitude make nights seem wintry.

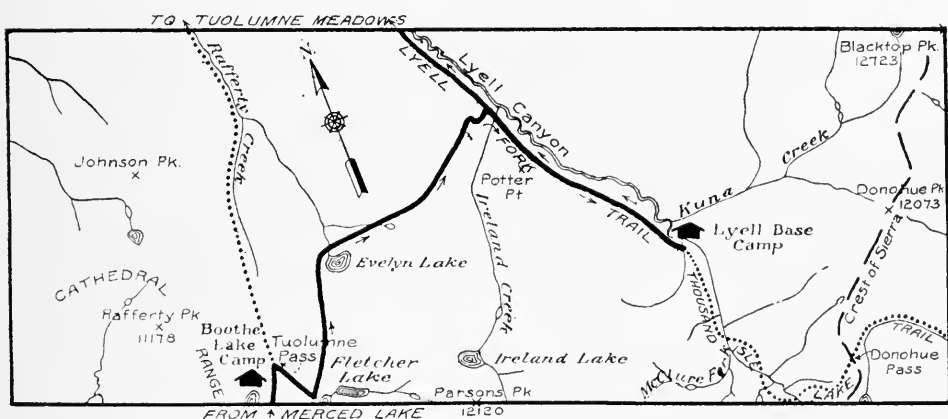
In leaving Merced Lake Camp, hikers will travel up the Merced Canyon about one mile to the confluence of the Merced and the McClure Fork. Here trails branch off to the left, and the traveler may choose between the well constructed Babcock Lake Trail, which parallels Fletcher Creek, or the longer, more difficult, and more spectacular Vogelsang Pass Trail. Both of these trails cross Tuolumne Pass. If Fletcher Creek is followed, an ascent is made upon the shining granite slopes with the happy splashing stream ever close at hand. A glacier modeled dome crowns the summit from which the stream seems to pour, and if the climber will leave the trail here and follow for a short distance along the base of the dome, beautiful Babcock Lake is disclosed. This exquisite little adornment of the granite landscape cannot be seen from the trail, but the Boothe Lake-bound hiker should not fail to take the few extra steps necessary to view it. Beyond the previously mentioned dome the trail traverses a series of beautiful meadows.

No hiker will overlook the presence of the characteristic little dweller of the high country meadows, for he greets every passerby with a cheering whistle. He will be seen sitting stiffly erect with fore paws reclining on his breast. This interesting rodent is a high country ground squirrel and because of his usual erect posture has been called "Picket Pin."

To the right of the meadows Vogelsang Peak rears its jagged summits above the sky line. Glaciers, which once headed upon this mountain, cut enormous amphitheaters in the mountain top. They provide splendid opportunity to study glacial cirques at first hand. Near the upper end of the meadows there is again opportunity to make a short side trip to the left of the trail and gain a view of rock-bound Emerick Lake.

From here on, bulging granite masses and rich boggy meadows alternate. Numerous shallow pools confuse the hiker, making his first trip, as to whether or not some of the large ones may be Boothe Lake. However, on passing finally from a heavy stand of Lodgepole Pine onto unforested slopes, one sees unfolded an unexpected view of the heather-bordered, cliff-enclosed Boothe Lake just below. It should be understood that this camp is on the very backbone of the Cathedral Range, which extends for miles both east and west. The many little-visited wonders of these summits will induce any lover of the high places to remain longer than first plans claimed.

Trails radiate in many directions from Boothe Lake. Northward Tuolumne Meadows can be reached in an easy half-day stroll down Rafferty Creek. Southwards lies the route to Lake Merced via Babcock and Emerie lakes. Farther to the eastward the Vogelsang Pass trail climbs to granite heights and then descends the wild gorge of the McClure fork of the Merced. Our northeastward trail leads to Ireland Lake, the home of gamey, fighting trout, and into Lyell Canyon, cut deep into the highest mountain mass in the park.

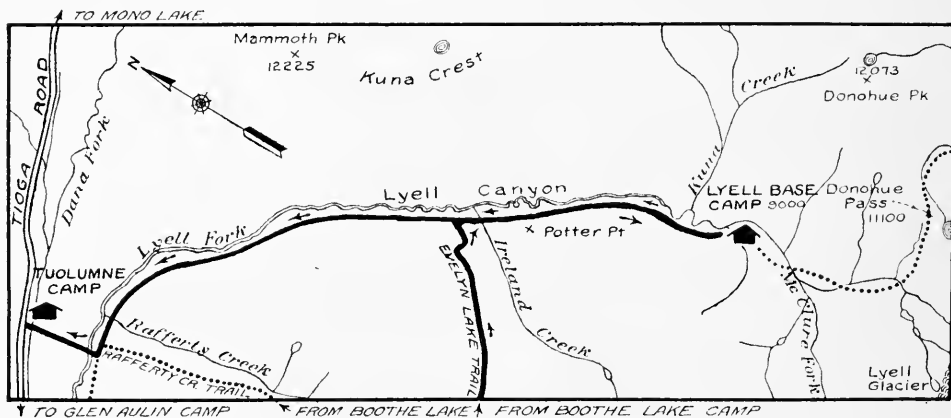


A LIVING GLACIER ON MT. LYELL

A short distance north of Boothe Lake, at Tuolumne Pass, the trail to Lyell Canyon branches to the right from the Rafferty Creek Trail. Climbing several hundred feet, we come to Fletcher Lake from the shores of which we turn northward. Again climbing, we soon attain an elevation from which we look back upon Boothe Lake and Fletcher Lake. The trail winds before us, around Evelyn Lake, and over a plateau elevated 10,500 feet above the sea. Ireland Lake lies south from here at the head of Ireland Creek. The dwarfed timber here is White Bark Pine. Descending suddenly from this high altitude, we enter upon the flat floor of Lyell Canyon and, turning to the right, we continue a few miles to its head. Here in one of the choicest spots in the Sierra is the Lyell Base Camp (9,000 feet altitude).

There has long been a demand for an easily accessible camp located thus in the heart of Yosemite's highest Sierra. Just above it is the living Lyell Glacier, from the snout of which pours the Lyell Fork of the Tuolumne River. Mount Lyell, Mount McClure, Parker Peak, Mammoth Peak, Luna Crest and other less-known but equally difficult summits may be reached from this base camp. Should we prefer to loiter on a trail rather than venture upon the glacier or scale difficult cliffs, an easy day may be spent in going to Donohue Pass, where the park boundary is crossed. We peer over the divide here toward the spectacular Mount Ritter group. From here, too, we may look down upon the Lyell Glacier. We may get our best conception of the living ice mass and the moraine that it is nosing up from this vantage point.

Within a few hours' walk from the Lyell Base Camp are the Tuolumne Meadows camp and the already described Boothe Lake Camp.

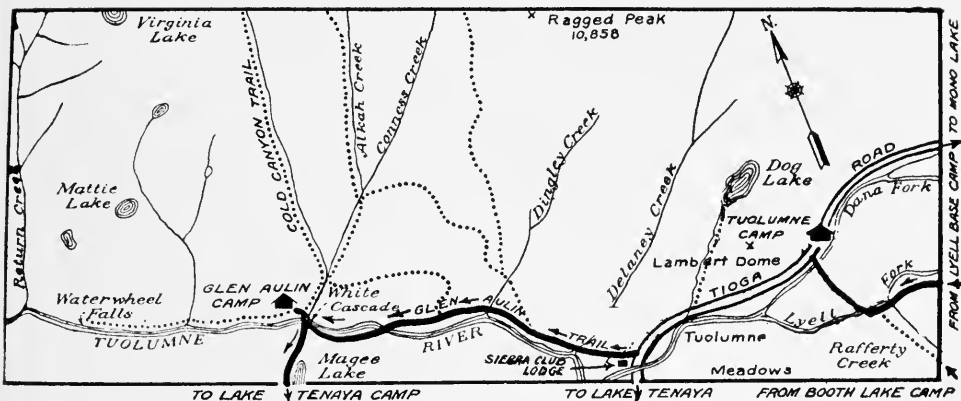


TUOLUMNE MEADOWS, CENTER OF MANY WONDERS

For John Muir, Tuolumne Meadows held the best of all the Sierra wonders that were as food and drink to him. Present day nature lovers agree that the wealth of high country attractions accessible from here call for an extended visit. The hiker visiting Yosemite's Hikers' Camps will find Tuolumne Meadows to be the center of a region unexcelled for varied beauty and grandeur.

Leaving the Lyell Base Camp we follow the Lyell Fork in its course through the flat bottomed, glacier trough, Lyell Canyon. We are constantly reminded of the rock grinding progressing under the present Lyell Glacier by the milkiess of the stream bearing glacier dust. It is but ten miles to the Tuolumne Meadows Camp (8,600 ft. altitude), and our journey along the meadow floor of the Canyon requires little expenditure of energy.

The camp will be found on the Dana Fork near Tuolumne Lodge. So numerous are the one day trips that may be taken from here that several seasons would be necessary even to sample the possibilities. Young Lake, McCabe Lake, Tioga Pass, Ellery Lake, Saddlebag Lake, Old Tioga Mine, Lambert Dome, Dog Lake, Fairview Dome, Evelyn Lake, Gaylor Lakes, Mount Dana, Mount Conness, Ragged Peak, Cathedral Group, and dozens of other points are accessible in one day hikes. Tenaya Lake Camp is about eight miles distant on the Tioga Road. Southwest a full day's walk by the Sunrise Trail is Little Yosemite Camp. Boothe Lake Camp is reached in about five hours' climb up the Rafferty Creek Trail. The trail to Glen Aulin is next described.



GLEN AULIN AND THE WATERWHEEL FALLS

Leaving Tuolumne Meadows at Soda Springs (Sierra Club Lodge), we follow the Glen Aulin Trail, which soon forks. Either branch will take us to Glen Aulin, but for thrilling beauty and ease of traveling the left fork or "River trail" should be taken. A recently constructed bridge makes this trail usable at any stage of water. Descending abruptly into the Grand Canyon of the Tuolumne, we pass California Falls, LeConte Falls, and many other spectacular but unnamed cascades. At White Horse Cascades the Tuolumne tumbles into a wonderful little Valley shut off from the world by sheer granite cliffs. Here where the river pauses for a moment before resuming its tumultuous rush into its mile deep canyon, is the Glen Aulin Camp (7,800 feet altitude) built in the lee of the El Capitan-like Wild Cat Point.

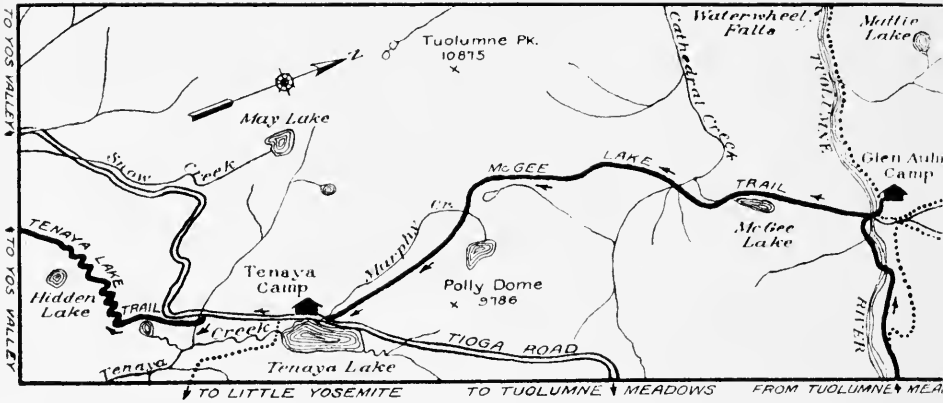
Waterwheel Falls, the Tuolumne's unique expression of leaping power and spotless beauty, may be reached by a trail that further descends the canyon. Within one day to the north of Glen Aulin are Cold Canyon, Alkali Canyon, Virginia Canyon and Matterhorn Canyon. Half a day eastward up the Canyon lies Tuolumne Meadows Camp. Our route to Tenaya Lake is next described.

YOSEMITE NATURE NOTES

Published weekly in summer and monthly in winter by the National Park Service in cooperation with the Yosemite Natural History Association, in Yosemite Valley.

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Communications should be addressed to C.P. Russell, Park Naturalist, Yosemite National Park.



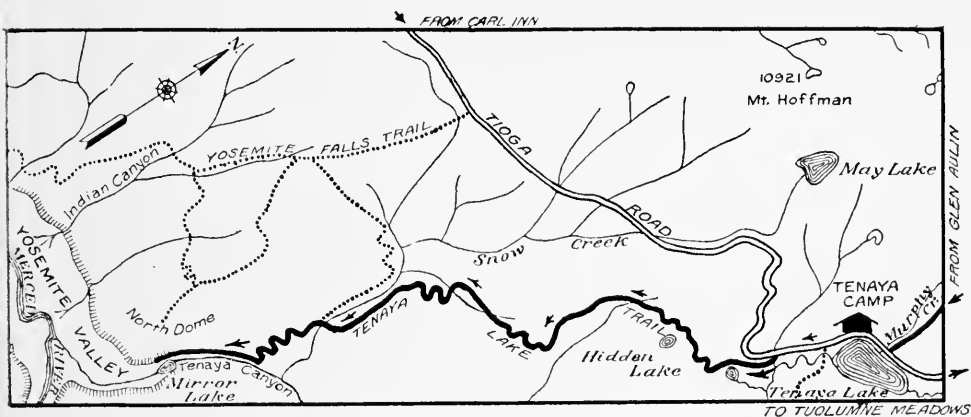
TENAYA, "LAKE OF THE SHINING ROCKS."

The McGee Lake Trail gives us exit from Glen Aulin. An interesting and easy day's travel (eight miles) through splendid forests of fir and scattered growths of Juniper brings us to the Tioga Road and Tenaya Lake. On the lake shore near the mouth of Murphy Creek is the Tenaya Camp (8,100 feet altitude). Here are many attractions which will entice hikers. The fine boating and fishing and the superb scenic surroundings make this camp deserving of a long visit.

At Lake Tenaya Glacial pavements may be seen at their best. Entire acres of this brilliant, gleaming polish awaken the wonder and admiration of every lover of the high trails. The Indians were so impressed with their mysterious beauty that they named the lake *Py-we-ack*, the Lake of the Shining Rocks. The pressure exerted by the ice in producing the polish must have been tremendous. It has been estimated at more than 100 tons to the square foot. In places the smooth undulating granite surfaces are marked with deep grooves or striae, cut by the moving boulders that were frozen into the river of ice and brought in contact with the surfaces below. Erratic boulders are seen scattered in profusion over the glacial pavements or nicely poised on the rounded summits of the ice-carved domes. As the ice withered in the changing climate, they slowly settled into the disintegrating mass and found resting places where we now see them.

Tenaya receives its name from the Chief of the tribe of Indians that occupied the region when Yosemite Valley was discovered. It was at this lake that in May, 1851, Capt. Bowling and his men captured Tenaya's band after a chase through ten feet of snow. Chief Tenaya, when informed that the lake had been named for him declared that "It already has a name; we call it *Py-we-ack*" (Lake of the Shining Rocks). When it was explained to him that it was to be named Tenaya because it was upon its shores that his people had been made captives, never to return to it to live, he found small consolation from the grief of losing his territory.

Many trails radiate from Tenaya. Little Yosemite Camp may be reached in a leisurely day via the Forsyth Pass Trail. Tuolumne Meadows Camp is about 8 miles distant by the Tioga Road. If one pleases, the trip to Yosemite may be made via the Tioga Road and Yosemite Falls Trail, but it is more desirable to make the return to the Valley via the Snow Creek Trail as next described.



THE RETURN TO YOSEMITE VALLEY

It is thirteen miles from Tenaya to Yosemite Valley, but much of the trip is downward and the remarkable surroundings make the journey seem all too short. We will travel west a short distance on the Tioga Road. This mountain highway was constructed in 1881 by the Great Sierra Mining Company that machinery and supplies might be hauled to the Tioga mine at the crest of the Sierra range. Chinese labor was employed in building the road. Soon after it was completed operations at the mine suddenly ceased and ore was never transported. The highway rapidly fell into decay and not until 1915 was it of service to Yosemite visitors. A group of public spirited citizens purchased it at that time and presented it to the Government. It is in good repair and now forms a very important part of the park's road system as it provides an eastern entrance and makes accessible many high country wonders to the auto tourist.

The first trail branching left from the road is the Forsyth Trail to Little Yosemite. Ours is the second trail and it intersects the road a short distance beyond the Forsyth Trail. We cross the meadow and the park-like forest below the lake and pass a beautiful little unnamed lake. Beyond this we climb to the crest of a long open ridge and look into the deep chasm of the almost inaccessible and little known Tenaya Canyon. As we descend again we pass close to Hidden Lake, but unless a detour is made we do not see it. About two miles beyond this lake is Ten-mile Meadow in which the flower lover will linger.

From here we will climb 650 feet to the source of one of the branches of Snow Creek. A 1500-foot descent by many zig-zags brings us to Snow Creek and 300 yards beyond the North Dome Trail turns right from our path. We turn left and follow down Snow Creek. Suddenly we emerge at the rim of the Canyon between Mt. Watkins and Basket Dome. Then follows an abrupt descent of 2500 feet by 108 switchbacks to the bottom of Tenaya Canyon. Here, turning downstream, we enter a dense forest of oaks, laurel, pine and cedar. An almost level path takes us to Mirror Lake which is but three miles by road from Yosemite Village.

VACATION-LAND IN OUR HOMES THROUGHOUT THE YEAR

Few of us are fortunate enough to spend more than a short vacation each year in our mountain playgrounds. How many of us, as we stood upon the heights and felt the thrill of fellowship that comes with first-hand acquaintance with the birds, the flowers, the trees and the mountains themselves, have wished that the inspiring influence of these associations could be with us throughout the year in our everyday life.

Our government is doing its part to help us to more thoroughly enjoy and understand our great playgrounds, the National Parks. In Yosemite we find a splendid museum and a corps of naturalists who conduct daily field trips along the trailsides and who deliver evening campfire lectures on a wide variety of natural history subjects. But why should we be satisfied with but an introduction to the trailsides of our beloved Sierra? Is there no way in which we may continue our friendship with the Big Country during each month and each week of the year?

There is a way! Lovers of the California mountains have organized to interpret and present in popular form all of the manifestations of Nature of the Sierras and more particularly of Yosemite National Park. Primarily the YOSEMITE NATURAL HISTORY ASSOCIATION concerns itself with the living things of the Yosemite region; yet it must necessarily be a factor in inspiring a regard for American Wild Life in general.

YOSEMITE NATURE NOTES, which has been published in mimeographed form by the Park Naturalist for a number of years, has been adopted as the official organ of the Association. Cooperating with the government, the Association prints "Yosemite Nature Notes" weekly during June, July, and August and monthly throughout the remainder of the year, each of the twenty-four issues being sent to all members.

If you are one of the hundreds of thousands who love Yosemite, you will wish to keep in touch with her through the Association. There are hundreds of thousands of others who have no conception of the big message of the Out-of-doors. You will want those uninitiated to learn of what the Park has to offer.

Act now! Fill out the enclosed application for membership and mail it with a check or money order for \$2.00 to The Park Naturalist, Yosemite National Park, California. Every cent of the \$2.00 will be devoted to keeping you in touch with your Yosemite.

KEEP IN TOUCH WITH YOUR YOSEMITE.

This bulletin is presented to you by the Yosemite Natural History Association.

Join the Association and keep in touch with your mountains. Two dollars will pay your dues for one year and will bring you twenty-four issues of Yosemite Nature Notes as well as any other bulletins published.

THE YOSEMITE NATURAL HISTORY ASSOCIATION ITS PURPOSES

1. *To gather and disseminate information on the wild-life of the Sierras.*
2. *To develop and enlarge the Yosemite Museum (in co-operation with the National Park Service) and to establish subsidiary units, such as the Glacier Point lookout and branches of similar nature.*
3. *To promote the educational work of the Yosemite Nature Guide Service.*
4. *To publish (in co-operation with the U. S. National Park Service) "Yosemite Nature Notes".*
5. *To study living conditions, past and present, of the Indians of the Yosemite region.*
6. *To maintain in Yosemite Valley a library of historical, scientific, and popular interest.*
7. *To further scientific investigation along lines of greatest popular interest and to publish, from time to time, bulletins of non-technical nature.*
8. *To strictly limit the activities of the association to purposes which shall be scientific and educational, in order that the organization shall not be operated for profit.*

REMEMBER! Send your two dollars to The Park Naturalist, Yosemite National Park, California.



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From a photograph by K. E. Marble.

The famous Two Medicine Lake in July.

Mount Rockwell in the middle background stands out in front of the Continental Divide. The two peaks on the right are Mount Helen and Flinsch Peak, both on the Continental Divide.

GLACIER REVEALED

By Robert Sterling Yard

Chief, Educational Division, National Park Service

ILLUSTRATIONS FROM PHOTOGRAPHS

I

THIS article considers Glacier National Park from a different point of view. Its facts are not those usually offered. Its purpose is to explain why this extraordinary landscape stands alone in kind amid the great scenery of the world. Its hope is to add the keen pleasure of appreciation to the other pleasures which there await the visitor.

To say that Glacier National Park is the Canadian Rockies done in Grand Canyon colors is to express a small part

of a complicated fact. Glacier is so much less and more. It is less in its exhibit of ice and snow. Both are dying glacial regions, and Glacier is hundreds of centuries nearer the end; no longer can it display snowy ranges in August and long, sinuous, Alaska-like glaciers at any time. Nevertheless it has its glaciers, sixty or more of them perched upon high rocky shelves, the beautiful shrunken remainders of one-time monsters. Also it has the stupendous walled cirques and painted, lake-studded canyons which these monsters left for the enjoyment of to-day.

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From a photograph by Haynes.

Cracker Lake, above which Mount Siych rises four thousand feet, almost sheer.

The dark colored rock masses near the water are deep pink, the cliffs dark gray. The slope on the right of the lake is red and green. The water is a vivid robin's-egg blue, with pink edges where the colored sand shows through.

It is these cirques and canyons which constitute Glacier's unique feature, which make it incomparable of its kind. Glacier's innermost sanctuaries are comfortably accessible and intimately enjoyable for more than two months each summer.

Glacier National Park hangs down from the Canadian boundary-line in north-western Montana, where it straddles the Continental Divide. Adjoining it on the north is the Waterton Lakes Park, Canada. The Blackfeet Indian Reservation borders it on the east. Its southern boundary is Marias Pass, through which the Great Northern Railway crosses the crest of the Rocky Mountains. Its west-

ern boundary is the North Fork of the Flathead River. The park contains more than fifteen hundred square miles.

Communication between the east and west sides within the park is only by trail-passes over the Continental Divide.

There are parts of America quite as distinguished as Glacier: Mount McKinley, for its enormous snowy mass and stature; Yosemite, for the quality of its valley's beauty; Mount Rainier, for its massive radiating glaciers; Crater Lake, for its color range in pearls and blues; Grand Canyon, for its stupendous painted gulf. But there is no part of America or the Americas, or of the world, to match



From a photograph by A. J. Baker.

Early morning on Lake McDonald (lower west side).
Mount Cannon in the background.

this of its kind. As for the particular wondrous thing these glaciers of old left behind them when they shrank to shelved trifles, there is no other. At Glacier one sees what he never saw elsewhere and never will see again—except at Glacier.

Visitors seldom comprehend Glacier; hence they are mute, or praise in generalities or vague superlatives. Those who have not seen other mountains find the unexpected and are puzzled. Those who have seen other mountains fail to understand the difference in these.

“My God, man, where are your artists?” cried an Englishman who had come to St. Mary Lake to spend a night

and was finishing his week. “They ought to be here in regiments. Not that this is the greatest thing in the world, but that there’s nothing else in the world like it.”

II

THE elements of Glacier’s personality are so unusual that it will be difficult, if not impossible, to make phrases describe it. Comparison fails. Photographs will help, but not very efficiently, because they do not convey its size, color, and reality; or perhaps I should say its unreality, for there are places like Two Medicine Lake in still pale midmorning,



From a photograph by A. J. Baker.

North from Piegan Pass.

A familiar trail route between St. Mary Lake and Lake McDermott. Peak of Pollock Mountain shown on the left side and Mount Grinnell on right.

St. Mary Lake during one of its gold sunsets, and the cirques of the Belly River under all conditions which never seem natural.

To picture Glacier as nearly as possible, imagine two mountain ranges roughly parallel in the north, where they pass the Continental Divide back and forth between them across a magnificent high intervening valley, and, in the south, merging into a wild and apparently planless massing of high peaks and ranges. Imagine these mountains repeating everywhere huge pyramids, enormous stone gables, elongated cones, and many other unusual shapes, including numerous saw-toothed edges which rise many thousand feet upward from swelling sides, suggesting nothing so much as overturned keel boats. Imagine ranges, glacier-bitten alternately on either side, with cirques of three or four thousand feet of precipitous

depth. Imagine these cirques often so nearly meeting that the intervening walls are knife-like edges—miles of such walls carry the Continental Divide; and occasionally these cirques meet and the intervening wall crumbles and leaves a pass across the divide. Imagine places where cirque walls have been so bitten outside as well as in that they stand like amphitheatres builded up from foundations instead of gouged out of rock from above.

Imagine these mountains plentifully snow-spattered upon their northern slopes and bearing upon their shoulders many small and beautiful glaciers perched upon rock shelves above and back of the cirques left by the greater glaciers of which they are the remainders. These glaciers are nearly always wider than they are long; I have seen only three with elongated lobes.



From a photograph by A. J. Baker.

Mount Reynolds, as seen from St. Mary Lake Trail.

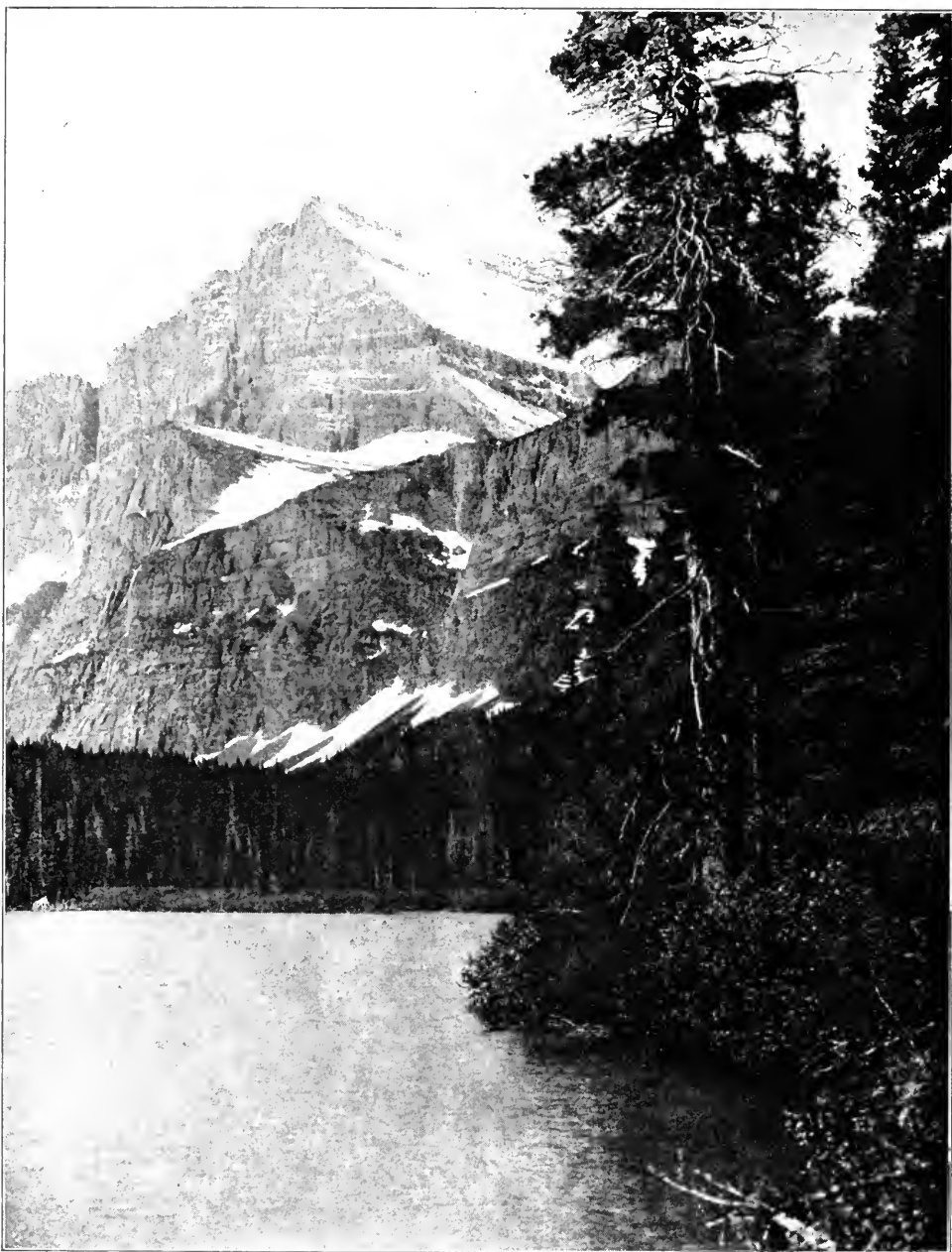
Hanging gardens below the snow on its near front. Just the other side of Reynolds is Hidden Lake.

Imagine deep, rounded valleys emerging from these cirques and twisting snake-like among enormous and sometimes grotesque rock masses which often are inconceivably twisted and tumbled, those of each drainage basin converging fan-like to its central valley. Sometimes a score or more of cirques, great and small, unite their valley streams for the making of a river; seven principal valleys, each the product of such a group, emerge from the east side, thirteen from the west.

Imagine hundreds of lakes whose waters, fresh-run from snow-field and glacier, brilliantly reflect the odd surrounding landscape. Each glacier has its lake or lakes of turquoise blue. Every successive shelf of every glacial stairway has its lake—one or more. And every valley has its greater lake or string of lakes. Glacier is pre-eminently the park of lakes. When all is said and done they

constitute its most distinguished single element of supreme beauty.

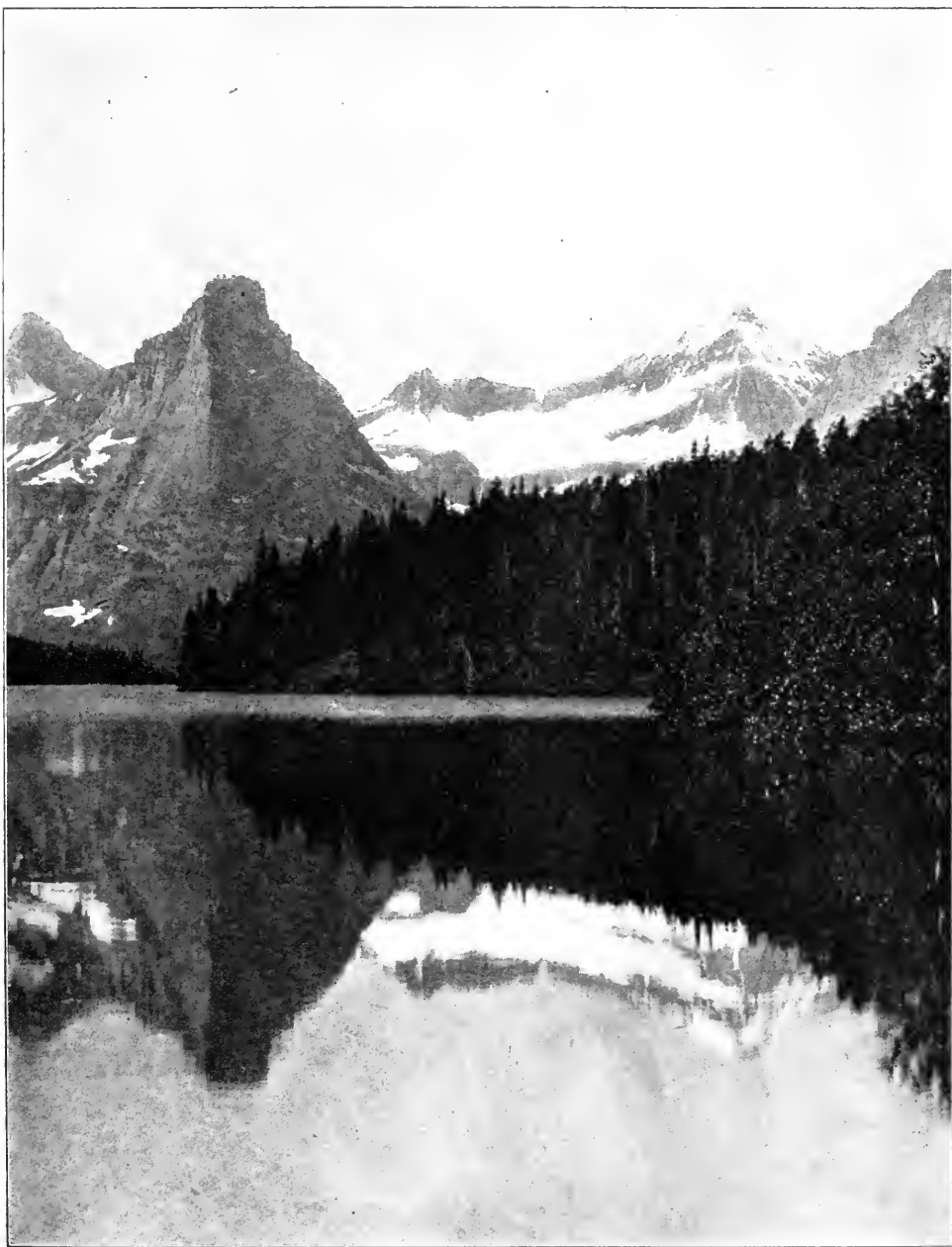
And, finally, imagine this picture done in soft, glowing colors—not only the blue sky, the flowery meadows, the pine-green valleys, and the innumerable many-hued waters, but the rocks, the mountains, and the cirques besides. The glaciers of old penetrated the most colorful depths of earth's skin, the very ancient Algonkian strata, that from which the Grand Canyon also is carved. The rocks appear in four differently colored layers. The lowest of these is called the Altyn limestone. There are about sixteen hundred feet of it, pale blue within, weathering pale buff. Whole yellow mountains of this rock hang upon the eastern edge of the park. Next above the Altyn lies thirty-four hundred feet of dull green shale. The tint is pale, deepening to that familiar in the depths of the Grand Canyon. It weathers every



From a photograph by U. S. Geological Survey.

Lake McDermott, showing the huge limestone gable of Gould mountain.

darkening shade to very dark greenish brown. Next above that lies twenty-two hundred feet of red shale, a dull rock of varying pinks, which weathers many shades of red and purple, deepening in places almost to black. There is some gleaming white quartzite mixed with both these shales. Next above lies more than four thousand feet of Siyeh limestone, solid, massive, iron-gray with an insis-



From a photograph by U. S. Geological Survey.

Middle Fork of the Belly River, showing Pyramid Peak and the Shepard Glacier across Crossley Lake.

tent flavor of yellow, and weathering buff.

This heavy stratum is the most impressive part of the Glacier landscape. Horizontally through its middle runs a

dark broad ribbon of diorite, a rock as hard as granite, which once, while molten, burst from below and forced its way between horizontal beds of limestone; and occasionally, as in the Swiftcurrent and



From a photograph, copyright by R. I. Marvie.

Gunsight Lake and Gunsight Pass from a spur of Mount Jackson.

Triple Divide Passes, there are dull iron-black lavas in heavy twisted masses. Above all these once lay still another shale of brilliant red, fragments of which

may be seen topping mountains here and there in the northern part of the park.

Imagine these rich strata hung east and west across the landscape and sagging



From a photograph, copyright by R. E. Marble.

Storm on Lake Ellen Wilson.

Lake Ellen Wilson lies at the west side of Gunsight Pass, corresponding in position to Gunsight Lake on the east.

deeply in the middle, so that a horizontal line would cut all colors diagonally!

Now imagine a softness of line as well as color resulting probably from the soft-

ness of the rock; there is none of the hard insistence, the uncompromising definiteness of the granite landscape. And imagine further an impression of antiquity, a



From a photograph by Scenic America Co., Portland, Oregon.

Middle Fork of the Belly River, from one of the cirques at its head.

Glimpse of Chaney Glacier and noble Mount Merritt on right. Foothills of Mount Cleveland, the giant of the park on left. Glens Lake and Crossley Lake shown in the valley.

feeling akin to that with which one enters a mediæval ruin or sees the pyramids of Egypt. Only here is the look of immense, unmeasured, immeasurable age. More than at any place except perhaps the rim of the Grand Canyon does one seem to stand in the presence of infinite ages; an instinct which, while it baffles analysis, is sound, for there are few rocks of the earth's skin so aged as these ornate shales and limestones.

And now, at last, you can imagine Glacier!

III

BUT, with Glacier, this is not enough. To see, to realize in full its beauty, still leaves one puzzled. One of the peculiarities of the landscape, due perhaps to its differences, is its insistence upon explanation. How came this prehistoric plain so etched with cirques and valleys as to

leave standing only worm-like crests, knife-edge walls, amphitheatres, and isolated peaks? The answer is the story of a romantic episode in the absorbing history of America's making.

Perhaps a hundred million years ago, to quote the assumption of the majority of geologists concerning a period which is only guesswork at best, these lofty mountains were deposited in the shape of muddy sediments on the bottom of shallow fresh-water lakes, whose waves left many ripple marks upon the soft muds of its shores, fragments of which, hardened now to shale, are frequently found by tourists. So ancient was the period that these deposits lay next above the primal Archean rocks, and marked, therefore, almost the beginning of accepted geological history. Life was then so nearly at its beginnings that the forms which Walcott found in the Siyeh limestone were not at first fully accepted as organic.



From a photograph by U. S. Geological Survey.

One of the cirque glaciers, middle fork of the Belly River.

Thereafter, during a time so long that none may even estimate it, certainly for many millions of years, the history of the region leaves traces of no extraordinary change. It sank possibly thousands of feet beneath the sea which swept from the Gulf of Mexico to the Arctic, and accumulated there sediments which to-day are scenic rocks. It may have alternated above and below sea-level many times, as our Southwest has done. Eventually, under earth pressures concerning whose cause many theories have lived and died, it rose to remain until our times.

Then, millions of years ago, but still recently as compared with the whole vast lapse we are considering, came the changes which seem dramatic to us as we look back upon them accomplished, but which came to pass so slowly that no man, had man then lived, could have noticed a single step of progress in the course of a long life. Under earth pressures, the skin buckled, and the Rocky Mountains rose. At some stage of this process the

range cracked along its crest from what is now Marias Pass to a point just over the Canadian border, and, a couple of hundred miles farther north, from the neighborhood of Banff to the northern end of the Canadian Rockies.

Then the great overthrust followed. Side pressures of inconceivable power forced upward the western edge of this crack, including the entire crust from the Algonkian deposits up, and thrust it over the eastern edge. During the overthrusting, which may have taken a million years, and during the millions of years since, the frosts have chiselled open and the rains have washed away all the overthrust strata, the accumulations of the geological ages from Algonkian times down, except only that one bottom layer.

This alone remained for the three ice invasions of the glacial age to carve into the extraordinary area which is called to-day the Glacier National Park.

The Lewis Overthrust, so called because it happened to the Lewis Range, is



From a photograph by A. J. Baker.

Up Brown Pass Trail.

From Waterton Lake looking westward up the Olson Creek, the route of Brown Pass Trail over the Continental Divide. Porcupine Ridge on the left. The Sentinel in the middle. This is one of the greatest scenic trails in America, but is known as yet to very few.

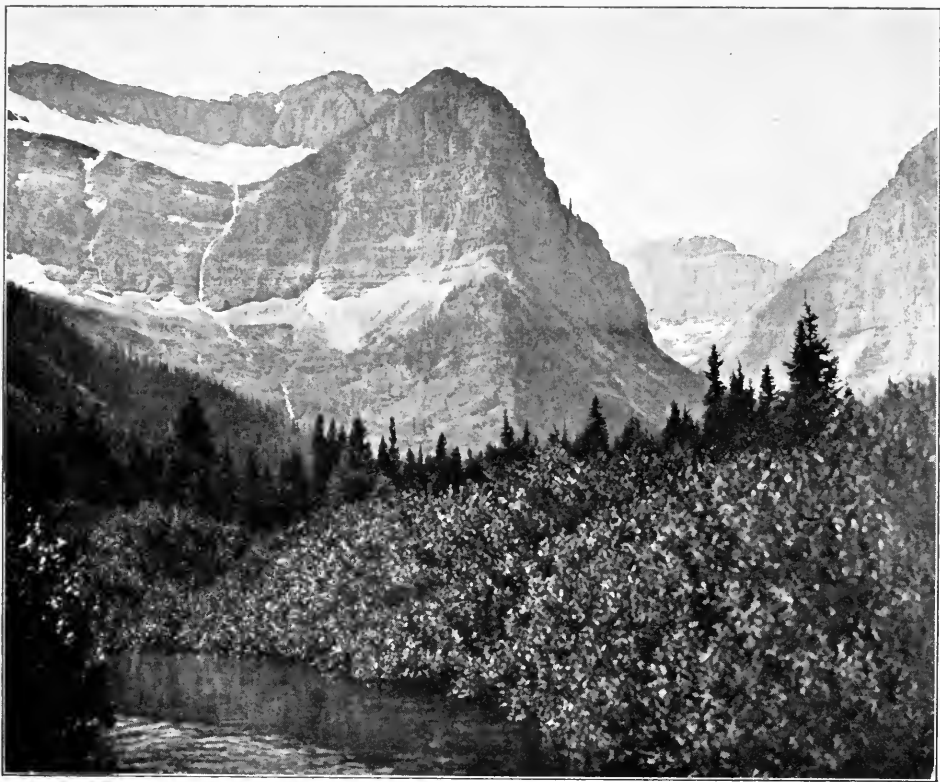
ten to fifteen miles wide. The eastern boundary of the park roughly defines its limit of progress. Its signs are plain to the eye taught to perceive them. The yellow mountains on the eastern edge near the gateway to Lake McDermott lie on top of the Blackfeet Indian Reservation, whose surface is many millions of years younger and quite different in coloring. Similarly Chief Mountain, at the entrance of the Belly River Valley, owes much of its remarkable distinction to the incompatibility of its form and color with the prairie upon which it lies but out of which it seems to burst.

Perhaps thousands of years after the overthrust was accomplished another tremendous faulting still further modified the landscape of to-day. The overthrust edge cracked lengthwise, this time west of the Continental Divide, all the

way from the Canadian line southwest nearly to Marias Pass. The edge of the strata west of this crack sank perhaps many thousands of feet, leaving great precipices on the west side of the divide similar to those on the east side. There was this great difference, however, in what followed: the elongated west side gulf or ditch thus formed filled up with the deposits of later geologic periods.

This whole process, which also was very slow in movement, is important in explaining the conformation and scenic peculiarities of the west side of the park, which, as seen by the tourist to-day, are remarkably different from those of the east side. Here, the great limestone ranges, glaciated, cirqued, and precipiced as on the east side, suddenly give place to broad, undulating plains.

The inconceivable lapse of time cov-



From a photograph by A. J. Baker.

Up Brown Pass Trail.

Porcupine Ridge and an unnamed glacier on the left. Guardhouse in distance, with glimpse of Dixon Glacier.

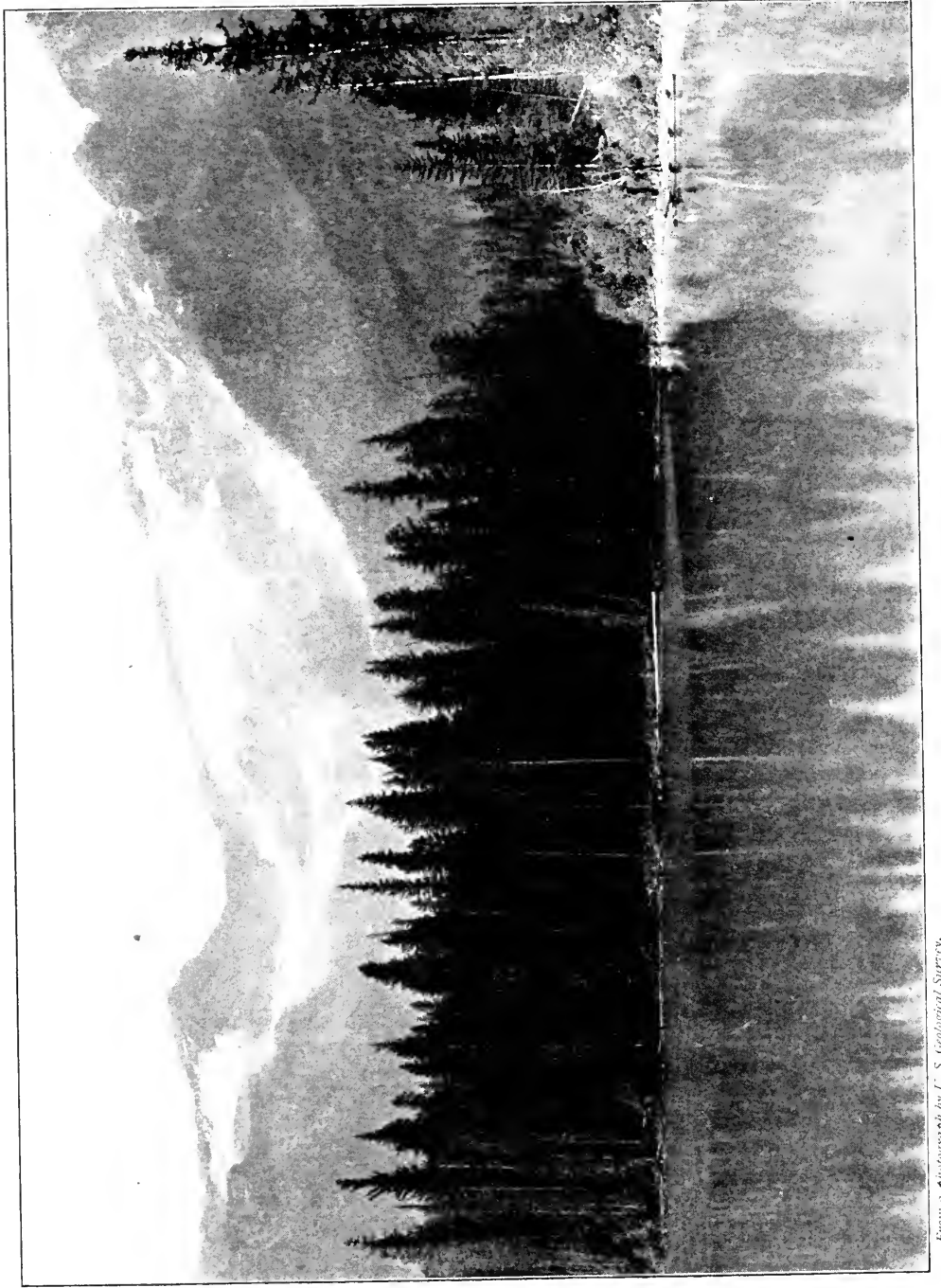
ered in these titanic operations of nature and their excessive slowness of progress rob them of much of their dramatic quality. Perhaps an inch of distance was an extraordinary advance for the Lewis Overthrust to make in any ordinary year, and doubtless there were lapses of centuries when no measurable advance was made. Yet sometimes sudden settlements, accompanied by more or less extended earthquakes, must have visibly altered local landscapes.

It is with these backgrounds graven deeply on his mind that I want the future visitor to enter Glacier National Park. Then, with an eye keen for the meaning of pebble and cliff, of cirque and gnawed summit, of form and differentiating color; with imagination alert to summon the mighty past for the interpretation of the glowing, magical, stupendous present, he will realize a high degree of pleasure which is wholly denied to the thousands who en-

ter to gape and wonder, asking footless questions of guides more ignorant than themselves. If we are to see at all so marvellous a revelation of nature's workaday processes, let us see it intelligently.

IV

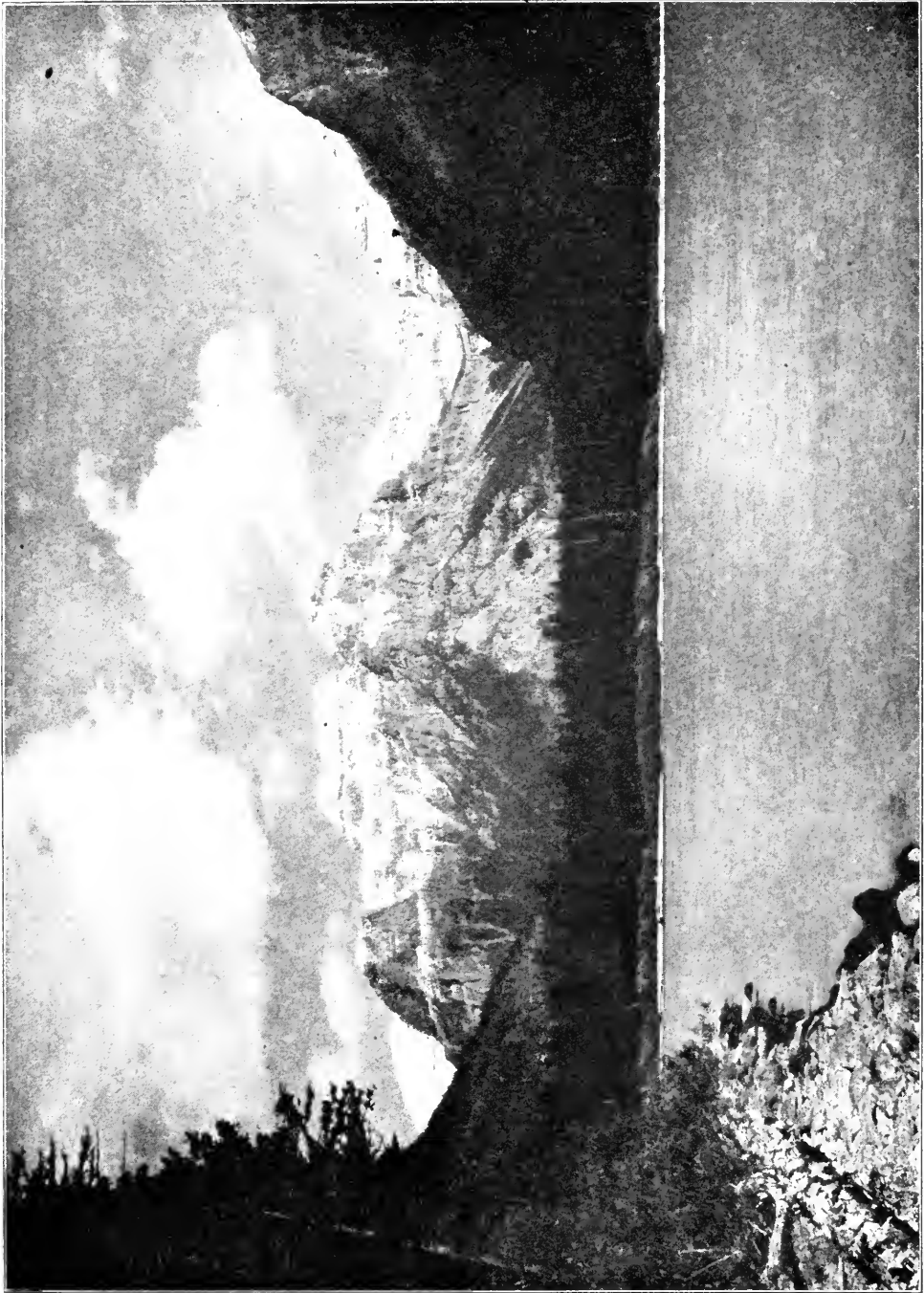
THE limits of a magazine article do not permit a survey of so elaborate and complicated an exhibition as this National Park presents. Many thousands of travellers have seen the parts already developed by road and trail, passing from hotel to chalet, from chalet to hotel, in the seeing; and hundreds of thousands are familiar with the reproductions of photographs of these scenes. The towering, painted pyramids of Two Medicine Lake, which are not pyramids at all but the gable ends of mountain ledges thousands of feet high and miles long; the unreal snowy horizon at the head of St. Mary



From a photograph by U. S. Geological Survey.

Upper Kintla Lake, showing the Agassiz Glacier.

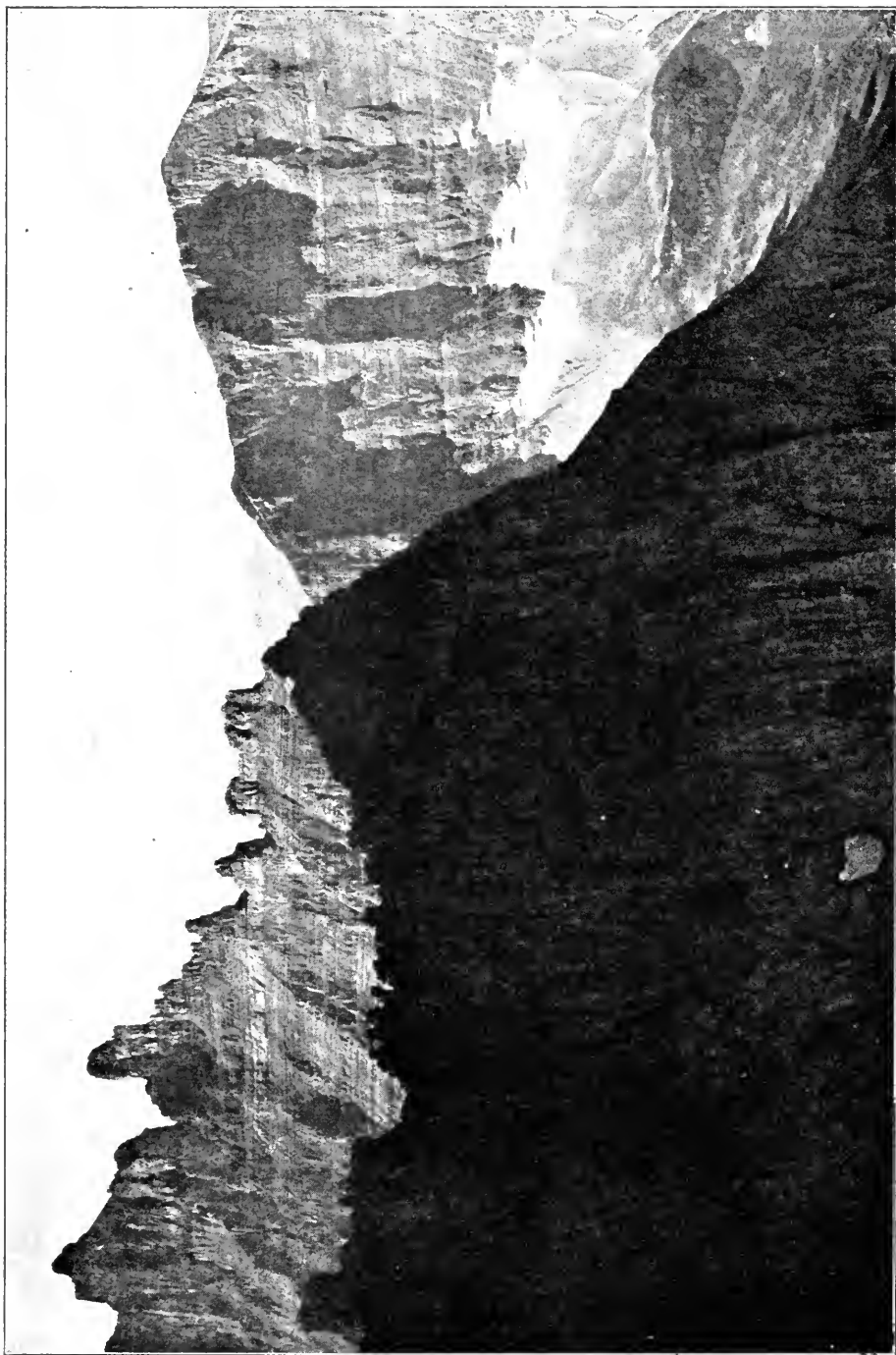
U. S. G. S. - 1000 feet above lake's surface, spreads glaciers out either way like wings.



From a photograph by U. S. Geological Survey.

Beautiful Bowman Lake.

One of the most exquisite spots in America, but known so far to very few. It is reached through Brown Pass.

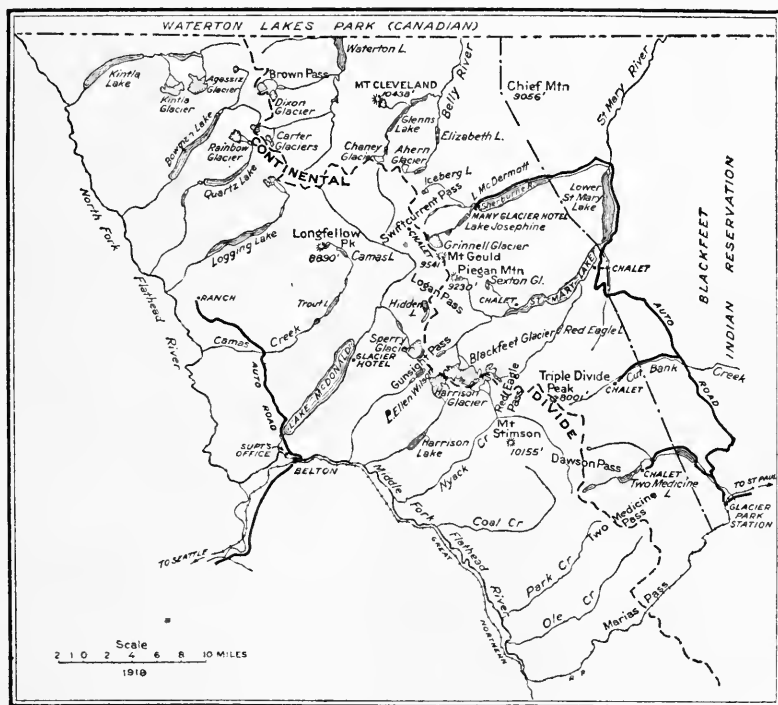


From a photograph by Thirk.

The head of the South Fork of the Belly River with the lower Ahern Glacier clinging to the perpendicular wall of the Continental Divide, here 3,000 feet high. The circular rock wall on the right encloses Iceberg Lake, 2,200 feet below.

Lake, bristling with cones and flanked with bulky knife-edge monsters, purple below and yellowish gray above; the indescribable circle of gables, toothed walls, pyramids, shining cliff glaciers, and sprawling red mountains which surround Lake McDermott; the mammoth amphitheatre of Iceberg Lake, gougged as deep

The northern wilderness may be roughly divided into four scenic areas: the deep central valley from Mount Cannon to Waterton Lake, between the Lewis and Livingston Ranges, which alternately carry the Continental Divide; the Belly River valleys east of this and north of the Iceberg Lake wall; the walled cirques of



Map of Glacier National Park.

and steep without as it is within; the romantic unreality of Gunsight Pass, carrying the Continental Divide over a giant's causeway between the gulf-like cirques in whose bottoms lie Gunsight Lake and Lake Ellen Wilson; the calm beauty of Lake McDonald, largest and longest of the pine-bound lakes of the west side; these, and many others, are familiar, at least in picture, to a large part of intelligent America.

Let us then glance at some of the features in the little-known wilderness north of these, an area as large or larger, whose repetition of similar forms discloses them in fascinating variety and upon a scale of surpassing beauty and grandeur.

the Bowman and Kintla valleys, and their scenic gateway, the Brown Pass Trail up Olson Valley from Waterton Lake; and the west side north of Lake McDonald. All these, in very different ways, for each is highly individualized, express the Glacier personality in supreme degree. Any one of them alone would nobly furnish a national park.

The central valley, which consists of two valleys lying end on, their streams flowing in opposite directions from a central watershed, might well be called, to designate it as a whole, the Avenue of the Giants, for it is lined on both sides by gigantic mountains. Many have looked up its length from Granite Park near its

lower end, and a few have seen it—and the whole park besides—in full relief from the summit of Swiftcurrent Mountain. The old game trail through its deep forested bottom, which the ambitious must travel if he would follow its majestic length, fortunately emerges upon occasional opens or he would lose all benefit of one of the scenic opportunities of America. The trail ends at Waterton Lake, where the Brown Pass Trail starts west up Olson Valley.

It requires no seer to pronounce the Avenue of the Giants the key to the entire development of the northern wilderness, all of whose greatest spectacles may easily be reached from it; nor does it require inspiration to prophesy it the site of a motor highway connecting Canada's highway system, through the Waterton Lakes Park, with a motor road already planned to cross the Continental Divide through Glacier's centre.

I like to think of the Belly River valleys as the land of exuberance, for here all expression is in the higher powers. They are broad valleys; the grass of their meadows is thick and high, their wild flowers large and many, their underbrush rank, their forests full-bodied. The Middle and South Forks are rushing streams harboring hard-fighting cutthroat trout. The lakes are large and deep. The mountain walls are grim, sprawling yellow monsters at the eastern outlet of the combined forks, towering peaks at their sources.

The cirques in which these rivers rise are the wildest spots in Glacier. The North Fork is born amid groups of glaciers close to the top of the Continental Divide, and its branches descend over four enormous limestone steps through turquoise lakes upon each step. Mount Cleveland, the highest peak in the park, towers upon the north; Mount Merritt, one of the noblest of all, upon the southeast. It is a day's hard scramble to climb into these cirques now, but some day trails will save time and labor.

The South Fork is born close by, southwest of Mount Merritt, in Helen Lake, which is the bottom of a well thousands of feet deep, the upper lips of which drip with glaciers. For bigness and sheer wildness I know of no cirque which seems to equal this. Its lofty, precipitous, toothed,

southern wall is the lofty, precipitous, toothed, northern wall of Iceberg Lake of the Swiftcurrent drainage basin.

Yes, on the other side of that wall hundreds of tourists are riding and tramping the Iceberg Trail, and on this side you stand alone, except for the marmots whistling in the talus, the mountain-goats high on the ledges, and the eagles circling over the abyss. A shot aimed high in air might drop its bullet down into Iceberg Lake; and yet, to reach this spot from Iceberg Lake, you had to make a trail détour of nearly forty miles!

Few enter the Belly River valleys to enjoy and explore them except Canadians, who drive in over a road which is a joke to all except those in the wagons. Yet no area in all Glacier combines scenery of such distinction with so great an abundance of essentials for comfort and pleasure. Far down the valley, far out on the prairie, miles even, across the Canadian line, the view back into those many glaciated cirques and their massing of tall peaks and serrated walls is one of pure nobility. The day of the Belly River's valleys, when it comes, will be big and fair. Their promise for popular development is greater than that of any part of the Glacier wilderness.

The name arouses curiosity. Why Belly? The river is principally Canadian. Was not the name, then, the Anglo-Saxon frontier's pronunciation of the Frenchman's *belle*? Surely in all its forks and tributaries, in all its moods and tenses, this was and is the Beautiful River!

But the ultimate expression of the sheer glory of the Algonkian exhibit, and consequently of Glacier National Park, is the headwater country of the Bowman and Kintla valleys in the extreme northwest of the park. The way in to Bowman leads from Waterton Lake, up the Olson Valley, and over Brown Pass. This trail is a panorama of pleasure and astonishment from its beautiful beginning to the splendid climax west of the pass.

I shall not attempt in this space to describe the lakes reflecting toothed horizons, the cliff glaciers whose frothing outlets cascade like forked lightnings fifteen hundred feet into the depths, or the towering heights of Guardhouse, Mount

Peabody, and Boulder Peak, which wall in the shelf from which one looks between the fluted precipice of Rainbow Peak and the fading slopes of Indian Ridge into the pale waters of Bowman Lake winding far away among its unbroken forests; nor shall I describe the Hole-in-the-Wall Fall where reappears through a hole, like a silver horse tail fastened upon a precipice, a stream which had lost itself a mile away on the summit of Boulder Peak.

From this spot a trail is building over a spur of Boulder Peak into the grand climax of Kintla, to reach which, summer before last, I had been obliged to make a détour through Canada.

Kintla has been called the Perpen-

dicular Land. The mountain walls of its two lakes are extremely steep and high, and the picture of snow-splashed rugged limestone summits about its head presents, I think, few equals in composition and grandeur. Commanding all, Kintla Peak rises five thousand feet above the upper lake, spreading from its shoulders, like wings prepared for flight, two broad and beautiful glaciers.

With the climax of Kintla, the southern section of the Lewis Overthrust ended, and our exhibit closes. Not far over the Canadian border, and for two hundred miles beyond it, the mountains resume the knobs and rounded summits characteristic of the granite Rockies.

BIOLOGY AND DEMOCRACY

By Edwin Grant Conklin

Author of "Heredity and Environment in the Development of Men"



THE war which was begun by autocrats and military leaders for personal and national aggrandizement has ended with the victory of the forces which were fighting to make the world safe for democracy. Scientists and professional men of world-wide renown joined heartily in a crusade to force militarism, war, and autocracy upon an unwilling world. The sanction of science and especially of biology was claimed for the highly militarized state, for a hereditary aristocracy, for the beneficial effects of war. It would be interesting to know whether these military biologists now believe in the beneficial effects of an unsuccessful war, in the survival of the fittest as determined by an armed conflict disastrous to their cause, and in their supermen and superstate as the highest products of evolution.

On the other hand, throughout most of the world there has been in recent times a wonderful growth and spread of democracy, not merely in forms of government but also in social, industrial, economic, and educational affairs. Our own

government is the greatest of democracies, and the influence of our example has extended to every nation in this hemisphere and to almost every country in the world. The most ancient and powerful autocracies of Europe have gone down in the wreckage of this war and on their ruins democracies are being erected. The plaintive appeal of Carl to Ferdinand, "We kings must stand together now," was a recognition, when too late, of the conquering forces of democracy which were released by the war. It begins to appear that the world is not only safe for democracy but that it is unsafe for anything else.

Our passion for democracy has been with us a kind of religion; it has rested in the main upon instinct rather than reason, upon sentiment rather than science. No one of us would wish to disturb the firm foundations of our faith which are laid in instincts and emotions, and yet it is our privilege and duty to give reasons for the faith that is in us and to examine the merits and demerits of our institutions in the light of knowledge and experience. If democracy is to endure and prevail it must rest upon science as well as

sentiment. Popular approval or disapproval will not alter the course of nature and civil laws cannot abolish natural ones.

In spite of the growth of democracy not a few thoughtful people are afraid of it and many would gladly see it limited in extent or application. Before the war there was apparent in this country a growing distrust of democracy, especially on the part of our "better classes," who are somewhat removed from the ranks of the common people; during the war this distrust was more or less concealed, but now amid the social earthquakes which are shaking the world this feeling is greatly increased, and it is evident that we are soon to witness such a conflict of opinion regarding genuine and universal democracy as the world has never before known. Distrust of democracy runs through the histories of all nations, ancient and modern. It was shown even by the founders of this greatest of democracies in the limitations which were placed upon citizenship and suffrage and in the many attempts which were made to guard the highest offices against popular interference, as, for example, in the constitutional provision for the election of the President by an electoral college, the election of senators by State legislatures, and the appointment of judges by the executive. It appears to-day in the opposition to woman's suffrage, in the fear of popular control of education, and in the alarm over the spread of socialism and internationalism throughout the world.

These great problems of the hour should be viewed not only in the light of human history but also in the long perspective of the history of living things upon the earth. Undoubtedly the fundamental concepts of biology apply to man no less than to other organisms, but it must be admitted that the application of biological principles to specific problems of social organization is often of doubtful value. Thus we find that biological sanction is claimed for wholly antagonistic opinions, as, for example, for and against war, woman's suffrage, polygamy, etc. Those who are searching for biological analogies to support almost any preconceived theory in philosophy, sociology, education, or government can usu-

ally find them, for the living world is large and extraordinarily varied and almost every possible human condition has its parallel somewhere among lower organisms. This uncertainty and ambiguity in the application of biological principles to man and his institutions has brought this whole process of reasoning into disrepute among those who look upon man as a being who stands wholly outside the realm of biology, but in spite of the uncertainties of biological analogies when applied to minor phases and problems of human society no one who has felt the force and sweep of the great doctrine of evolution can doubt that biological principles underlie the physical, intellectual, and social evolution of man—that biology is a torch-bearer not merely into the dark backgrounds of human history but also into the still more obscure regions of the future development of the race.

The Declaration of Independence is in many respects the charter of our democracy. Adopted at a time when it was necessary to secure the utmost co-operation of the Colonies and of the world, it made its appeal directly to the social instincts as well as to the intelligence of men, to their love of freedom, justice, and equality. The rights of man have ever been the foundation-stones of democracy. The Declaration held "these truths to be self-evident; that all men are created equal; that they are endowed by their Creator with certain inalienable rights; that among these are life, liberty, and the pursuit of happiness; that to secure these rights governments are instituted among men, deriving their just powers from the consent of the governed." Here are the foundation-principles of democracy, which are summarized more concisely in the motto of France: "Liberty, Fraternity, Equality."

What is the teaching of biology regarding these principles of democracy? How can we harmonize individual liberty and social organization, universal fraternity and national and class hostility, democratic equality and hereditary inequality? Or, to put the question in a more practical form, how can we develop social organization in spite of individual liberty, universal fraternity in spite of national and class antagonisms, democratic equal-



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Special Redwoods Number

SAVING THE REDWOODS

An Account of the Movement During 1919 to Preserve
the Redwoods of California

By MADISON GRANT

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BULL CREEK FLAT GROVE
Looking west across the South Fork of the Eel River and up Bull Creek, August 1917
Humboldt County, California. (See Page 112)

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SAVING THE REDWOODS

By MADISON GRANT

AN ACCOUNT OF THE MOVEMENT DURING 1919 TO PRESERVE THE REDWOODS OF CALIFORNIA

WHILE the cause of conservation of game and forest in the United States has advanced with a rapidity and with a degree of public support that could not have been anticipated by the early conservationists, nevertheless it has been too slow to keep pace with the forces of destruction. Members of the Zoological Society know only too well that the ever-increasing stringency of game protective measures has failed to save many species of our wild life outside of national parks and other sanctuaries, and that in them alone the game will find its final refuge.

The forests are now threatened with annihilation. It is officially stated that *at the present rate* of destruction the *old stand* of forests in the United States will all be cut over within the next sixty years. It will not last sixty years because the new and efficient methods of logging by machinery now generally introduced are not only more rapid, but make a clean sweep of every standing stick, while the old method left behind many of the smaller trees as well as a few giants which were defective and not worth cutting.

The most serious threat of devastation,—certainly the most dramatic,—is the impending destruction of the giant Redwoods of the California coast, and the following pages are devoted to a description of the efforts being made to save them.

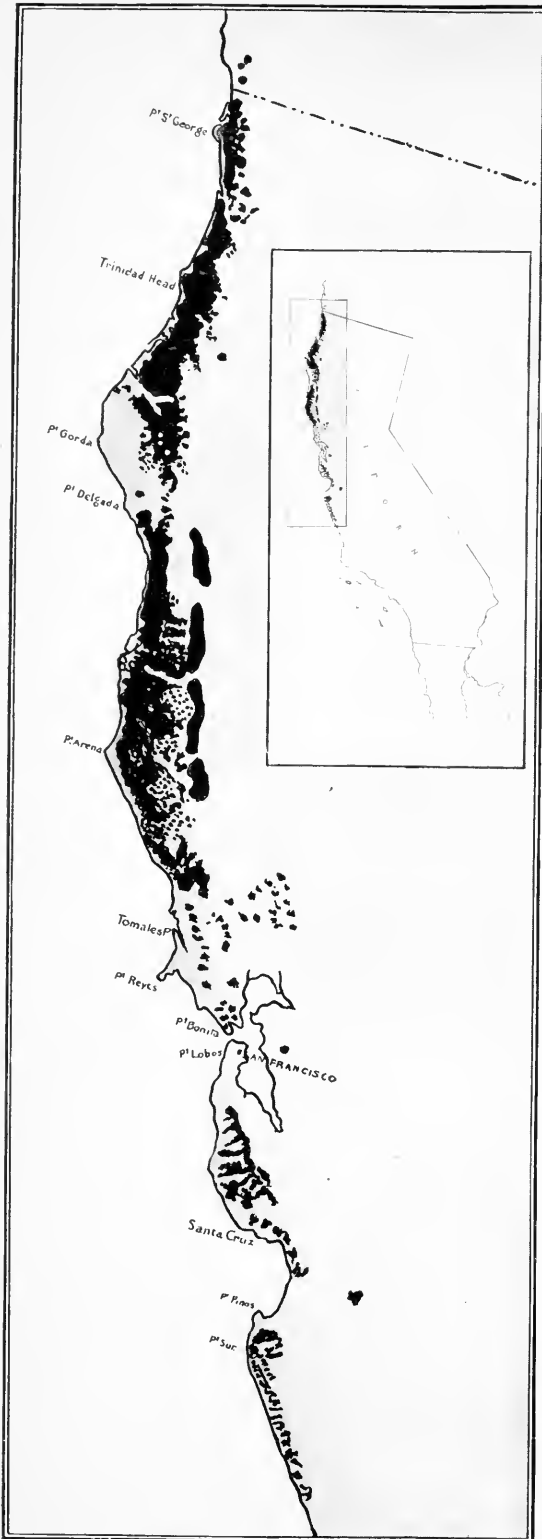
History of the Sequoia.

The genus *Sequoia*, to which the two surviving species of the great trees of California belong, is a member of the *Taxodiaceae* and stands widely separated from other living trees. This genus together with closely related groups once

spread over the entire northern hemisphere, and fossil remains of *Sequoia* and kindred genera have been found in Europe, Spitzbergen, Siberia, Alaska, Canada and Greenland. Changes in climate and other causes have led to their gradual extinction until the sole survivors of the genus are confined to California, one to high altitudes in the Sierra Mountains, and the other to the western slope of the Coast Range. Fossil leaves and cones of genera closely related to *Sequoia* occur in the rocks of the Jurassic and of the Trias, and the members of the genus *Sequoia* were common and characteristic trees in California throughout the Cretaceous.

To give some idea of what this bald statement means, these trees, virtually in their present form, flourished in California before the mammals developed from their humble, insectivorous ancestors of the Mesozoic and while the dinosaurs were the most advanced form of land animals. The mountains upon which these trees now stand contain fossil records of early *Sequoia*-like trees, proving that this group abounded before the rocks that constitute the present Sierras and Coast Ranges were laid down in the shallow seas, to be upheaved later and eroded into their present shapes. In the *base* of Mt. Shasta and under its lava flows, the ancient rocks are marked with imprints of their leaves and cones. Such antiquity is to be measured not by hundreds or thousands, but by millions of years.

While the duration of the family, of the genus, and even the existing species, or species so closely allied as to be almost indistinguishable, extends through such an immense portion of the earth's history, the life of the living trees is correspondingly great.



The Sequoia is not only the oldest living thing on earth, but it is the tallest tree on earth, and we have no reason, so far as our paleo-botanical studies have gone, to believe that there ever existed on earth either individual trees or forests that surpassed in size, in girth, in height or in grandeur, the Sequoias of California. And these are the trees that modern commercialism is cutting for grape stakes, for railroad ties and for shingles.

The Big Tree of the Sierras.

While the purpose of this article is to deal with the Redwoods of the coast rather than the Big Trees of the Sierras, both of the genus *Sequoia*, a description of the Redwood should be preceded by a few words on the Big Tree. The Big Trees, *Sequoia gigantea*, are very different from the Redwoods and are found on the western slope of the Sierra Nevadas in California, at an altitude of from five to eight thousand feet above the sea, with a north and south range of about 250 miles. They do not constitute a solid stand, but occur in more or less isolated groves, and mixed in with them are other huge trees, chiefly white fir, incense cedar, sugar and yellow pine.

These groves are stated generally to be about thirty-two in number and are much scattered and isolated in the northern part of their range, while in the south they are larger and closer together. This distribution shows that the Big Tree is on the decline, the various groves having long since lost touch with each other, while in the north the reproduction is very poor. They all grow in spots sheltered by surrounding forests and the slopes of the Sierras are more or less windless, but unless artificially protected in national parks they would soon be destroyed for their valuable lumber.

They have suffered throughout the ages from ground fires. Their enormously thick bark, which is from one-half to two feet through, is a great protection, and the tree lives on, although its heart has been burned out, so long as this bark and its underlying cambium layer can reach the earth. If protected by human care the Big Tree has remarkable recuperative power, and many of the trees in the Giant Forest show an accelerated growth owing to their immunity from fire even for a few decades.

These trees are from five to twenty-five feet in diameter at shoulder height above the ground, and in the Giant Forest alone there are said to be 5,000 trees of over ten feet in diameter.

Map showing the original distribution of the Coast Redwoods, *Sequoia sempervirens*. (See Page 94)

The height varies from 150 to much over 225 feet, and as they are without taproots they stand absolutely straight, often without branches from the ground to a height of 175 feet.

The crown usually is dead; not blasted by lightning, as has been often stated, but because ancient fires have eaten in at the base so that the flow of sap to the extreme crown has been checked. When connection with the ground and the life-giving water supply has been strongly re-established, growth takes place from the top-most uninjured branches, and forms a new but false crown. It is estimated that if these trees had escaped upsetting by the wind and had been allowed to grow entirely free from fire throughout their age long existence and had carried their proportionate growth (calculated from the tapering of the trunk) to their uttermost limits, these giants would be 600 feet high.

This is mere speculation, as is the theoretical age of some of the more ancient trees. The known age of trees which have been cut is from 1,100 to 3,250 years, but there is little doubt that this long period is much exceeded in such cases as the General Sherman tree or the Grizzly Giant. The life of these monsters can be computed only by comparison with the measured trunks of lumbered trees the actual age of which has been ascertained from the rings of growth. There is always a factor of uncertainty in the size of trees depending on their rate of growth and supply of water. In exposed positions with poor water and soil, development may be greatly retarded and a tree may be very ancient although relatively small in size. On the other hand, a favorable location, such as a pocket in the rock or access to underlying water, might greatly accelerate the growth of a tree within the same grove.

Some close observers claim that the size of the annual ring increases with the dryness and not with the moistness of the season. They argue that there is little or no rainfall in the Sierras during the summer and the ground water comes from melted snow, that growth takes place during the months when the ground is free from snow, and that a wet season means a heavy snowfall which lies around the trees late in the spring and gathers again early in the autumn, thus shortening the number of weeks available for increase of bulk.

If this theory be correct, then the series of gradually thickening rings, culminating and then thinning out again, which is characteristic



The California State Highway in 1917—before cutting



PANORAMIC VIEW OF THE CALIFORNIA REDWOOD FOREST
Along the South Fork of the Eel River, Humboldt County

of nearly all the Big Trees that have been studied, would record *dry seasons* and *not* those of abundant moisture. This theory flatly contradicts the evidence recently deduced from a study of the growth rings of these trees with reference to oscillations of climate throughout the Northern Hemisphere.

Redwoods of the Coast.

The Redwood of the coast, *Sequoia sempervirens*—the immortal Sequoia—well deserves its name. Far from being a battered remnant like its cousin of the Sierras, whose shattered ranks remind one of ponderous Roman ruins, the Redwood is a beautiful, cheerful and very brave tree. Burned and hacked and butchered, it sprouts up again with a vitality truly amazing. It is this marvellous capacity for new growth from trunk or from root saplings, which is perhaps the most interesting character of the Redwood in contrast with the Big Tree, which has no such means of regeneration and must depend on its cones for reproduction.

All the Redwood forests have been more or less injured by fire, often deliberately started by the lumbermen to clear away the slash, and it is a wonderful sight to see a charred trunk throw out a spray of new growth twenty or thirty feet above the ground, or a new tree standing on top of an ancient bole and sending its roots like tentacles down into the ground around the mother stump. Other trees stand athwart the fallen bodies of their parents and continually



A REDWOOD FOREST
Before Cutting



SIERRA STATE HIGHWAY IN 1919
 y, before lumbering operations were started



A REDWOOD FOREST
 After Cutting

readjust their root system to the decaying trunk beneath it.

The vitality of the second growth throws up a circular ring of new and beautiful Redwoods around the parent stump, and these little trees come up again and again if cut. If, however, they are burned several times in succession, this capacity of shoot reproduction appears to be lost and there are cases, notably about fifteen miles north of Arcata, in Humboldt County, where the highway passes through three or four miles of very large and thickly set burned stumps that show little or no signs of reforestation, proving that there are conditions where human greed and human carelessness make it impossible for even the Redwood to survive.

The age of the Redwood is about half that of the Sierra Big Tree, and the life of a mature Redwood runs from 500 to 1,300 years, in many cases probably rather more.

The diameter of the larger Redwoods is sixteen feet and over, and the height runs from 100 to 340 feet. Thus, while the diameter is less, the height is far greater than its cousin, the Big Tree, with the result and effect of a graceful beauty rather than vast solidity. It is probable that trees will be found which will exceed this maximum altitude, and it is quite possible that an ultimate height of 350 feet may be recorded. One would anticipate the discovery of this *tallest tree on earth* either in Bull Creek Flat or along Redwood Creek.



LUMBERING OPERATION NEARLY COMPLETED
McKee mill on the Highway, South Fork of the Eel River, Humboldt County, 1919. (See Page 107)

Of course, in discussing the present Redwoods, one must always bear in mind that many of the finest groves have fallen to the axe, judging from the silent records of gigantic stumps along the Eel River, especially at Sonoma Flat, only recently destroyed, to say nothing of forests to the north long since cut away. It is probable that the existing groves, with few exceptions such as Bull Creek Flat, do not represent the finest groves of Redwoods of fifty years ago. How needless all this sacrifice of Humboldt Redwoods has been may be measured by the fact that few if any of the lumber companies have proven profitable investments, if their failure to pay dividends is a test of their commercial success.

On rare occasions, notably where a strong wind follows long rainy seasons, Redwoods when exposed on high ridges may be blown down, but there are no such windfalls as are found in the forests of Canada. The danger of wind overthrowing Redwoods, even when in a thin strip along a road, is very slight if there is reasonable protection from the contour of the ground.

The original range of the Redwoods extended from Monterey north along the California coast to a point a few miles over the Oregon line, embracing an area with a length of about 450 miles and a width not exceeding forty miles. The narrowness of this range seems to be determined by the fog which sweeps in from the Pacific, and the writer has seen the edge of the fog-bank clinging closely to the inland limit of the Redwood belt. The natives, with the usual human capacity for error, state that the Redwoods attract fog, but of course it is the moisture of the fog deposited on the tops of the Redwoods that determines their inland distribution. These forests are sometimes so wet that the dripping from the high crowns is like a thin rain, and at Redwood Creek during the past summer it was hard to tell whether it was raining or not, so saturated with moisture were the foliage and the trunks, when the fog darkened the forest.

In the southern and larger half of its range, the Redwood is somewhat broken up in more or less isolated groves, and the axe of the lumberman has now separated these groves still more widely. In the north there is an almost continuous series of solid stands of Redwoods, constituting the most magnificent forests in the world, not even excepting the great Douglas firs and pines that adjoin them in Oregon.

The Redwoods in the south seem to show a marked variation from those of the north, being generally redder in color, and their growth in rings or circles is much more frequent than in the groves of Humboldt and Del Norte Coun-

ties. A further study will probably bring out other characteristic differences.

South of San Francisco the Redwoods are now chiefly found in the Big Basin, which has been wisely made into a state park, and in the famous Santa Cruz grove. Intermediate spots along the Coast Range, notably at La Honda, are interesting chiefly as showing the pathetic solicitude with which the owners of surviving trees care for the battered remnants amid the charred stumps of former giants. Here at least the owners have learned that the value of a living tree at a public resort or along a highway far exceeds the value of its lumber. All these southern groves are mere reminders of the forests that are gone, but the surviving trees will be carefully protected.

North of San Francisco, the Muir Woods on the slopes of Mount Tamalpais are easily accessible and show something of the forest grandeur formerly found in the region of the Golden Gate. The preservation of this grove is entirely due to the wise munificence of Mr. William Kent, who presented it to the nation, and put into practical form that devotion to California about which so many of its sons talk eloquently and do so little to perpetuate.

To the north, Sonoma County has purchased for public use the Armstrong Grove, and Mendocino County probably will be impelled to buy the Montgomery Grove. These last trees are situated near the highway to the north of Ukiah, and will be the first grove visited by the north-bound tourist. If they are purchased by the town or county, Ukiah will become the entrance to the Redwood Park series, and like Merced at the entrance to the Yosemite Valley will derive a great revenue from motor tourists.

After leaving Mendocino County one enters the great groves of Humboldt and Del Norte Counties. Here are solid stands of Redwoods and their subtle charm is so uniform that the observer finds it difficult to distinguish between one grove and the next.

Four great forests stand out prominently: They are the groves along the south fork of the Eel River and the west bank of the main Eel, culminating in the Bull Creek Flat and the Dyerville Flat; the immense Redwood Creek grove; the Klamath River groves, and the Smith River groves in Del Norte County. Each has its peculiar beauty and it is difficult to choose among them, but it is the trees of Humboldt which at the present moment are most in peril.

See pages 111, 113, 114, 115.

Destruction

The groves along the south fork of the Eel River are traversed by the state highway now



IN THE DEPTHS OF THE REDWOODS IN 1919.
On the edge of a grape-stake cutting along the Highway in South Fork basin. (See Page 99)
Photograph by the Freeman Art Co., Eureka, California

in the process of construction. The route of this highway made the timber accessible and the immediate result was the establishment of small lumber camps that are destroying the trees along its edge. Not only are the trees along the road cut down, but the highway itself in many cases has been injured. It is hard to find more disastrous bungling even in road construction.

One logging company, having thoroughly devastated large areas of its home state in the east, has recently purchased great tracts of Redwoods. These have been farmed out in small plots of forty acres each to various individuals, who purchased on what was virtually a stumpage basis, and the cutting was in full swing in July 1919. The writer drove through these same groves two years ago, in August 1917, and the change was sickening. This example of human greed and waste can scarcely be described. The pictures on pages 101-102, 104-105 tell the story better than words.

These great trees with their hundreds of feet of clear timber have among other valuable qualities the unfortunate characteristic of easy cleavage or splitting, and so they are doomed to the ignoble fate of being riven for railroad ties, for shakes or shingles, and perhaps worst of all, for grape stakes. Let no one, whether opposed to Prohibition or not, waste sympathy on the California wine-growers, whose sad lot it was last year the fashion to deplore. Grapes in California command today two or three times the price they ever brought before, and the development of the vineyards is the most immediate and threatening danger to the Redwoods of California. These superb trees are sacrificed to supply the stakes to carry vines, because of the practically indestructible character of their wood, which will stand in the ground almost indefinitely without rotting.

Survey of the Redwoods in 1919

On August 7, 1919, Stephen Tyng Mather, Director of National Parks, and the writer left San Francisco to study the available Redwood stands with reference to the selection of a site for a National Redwood Park, and to observe at first hand the actual destruction in progress.

The first night brought the party to Willits, beyond Ukiah in Mendocino County. Up to this point there were few or no Redwoods except the Montgomery grove, which lies to the west of the highway. From Willits the highway is under construction, and the Redwoods begin to appear along the roadside in small and scattered groups about fifty miles to the north,

and while they are insignificant in comparison with the great Humboldt groves, nevertheless these trees are highly important in connection with the highway and should be preserved.

The highway itself has not been built with an intelligent regard for the preservation of natural features, and the usual wasteful and destructive methods common to road contractors are everywhere followed.

In the construction of motor roads here and elsewhere in California, and for that matter in Oregon and Washington, the commissions in charge should employ a landscape engineer; that is, an engineer with some elemental sympathy with nature should supervise the work. The contractors should not be allowed to leave a wide area of devastation adjoining the roadway. Unnecessary vandalism, such as wrapping wire cables around the bases of the trees to support derricks, should be stopped; but, no doubt, all this will come after the trees and the scenery have been largely destroyed.

As to the trees along the highway in Mendocino County, the possibility of their protection depends entirely upon the action of the Highway Commission in securing a right of way which should not be less than an average width of 300 yards.

The Redwoods grove at Hiicks Camp is the first important camping site to be passed, and about twelve miles south of Garberville is the Sterns Camp grove, which is about ten acres in extent with a width of about 300 yards, and is a fine stand on a level flat. At this point it becomes evident that any park in connection with the highway must take in the entire erosion valley of the south fork of the Eel from crest to crest. The skyline with its superb trees is nearly as important as the flat bottom and much more important than the intermediate area. The river valley is narrow, in fact, little more than a wide gorge, with a level bottom, and the timber on the slopes has less commercial value than that upon the flat. If the timber along the highway is to be preserved, a relatively small amount of additional cost would save the entire valley. While it may not be necessary to go far beyond the crest, nevertheless as the trees are exposed a substantial amount of timber behind probably will have to be taken to protect them.

There is a fine grove at Red Mountain, and a little beyond the first cutting appears.

At a point six miles south of Garberville the first very large stand occurs. Here we were shocked to learn that the California Highway Commission not only had failed to acquire a



CUTTING AND BURNING REDWOODS IN 1919
Mill of Percy Brown on the Stafford Tract on the main Eel River above the Highway Bridge, Humboldt County
Photograph by the Freeman Art Co., Eureka, California



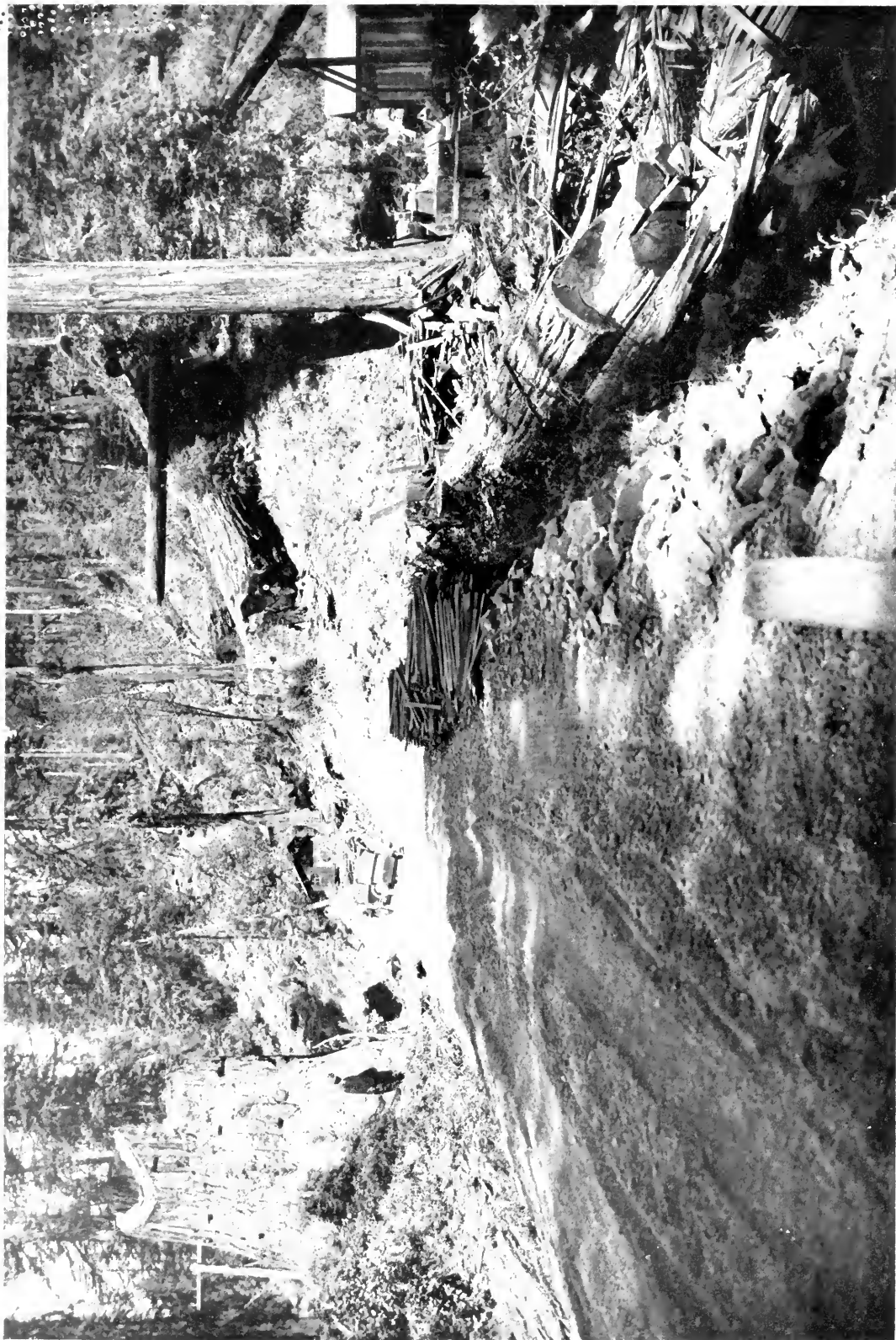
TYPICAL LUMBER MILL

On the State Highway, South Fork of Eel River, Humboldt County. Photograph by Chas. P. Punchard
August 1919. (See Page 107)



GRAPE STAKE CUTTING

On the South Fork of Eel River, Humboldt County. Photograph by Chas. P. Punchard
August 1919. (See Page 107)



LUMBERING ALONG THE HIGHWAY IN 1919
On South Fork of Eel River. Note the mammoth Redwood stump on left and piled grape stakes on right. (See Page 107.
Photograph by the Freeman Art Co., Eureka, California

sufficient right of way to protect the timber along the route, but actually had contracted with the owners of the land for the removal of the timber. In other words, the Commission bought a hundred foot strip with the understanding that the owners should cut off the only thing of value, namely, the timber. This incredible folly can only be explained by the widespread belief that a strip of timber along the road will blow down unless covered and protected by the forest behind.

The writer does not intend to enter into a discussion of this question, but it seems to be universally believed in the Redwood country that trees blow down if the adjoining forest is cut off. There is but the slightest basis for this tradition. Trees on ridges which have been exposed by cutting, or an isolated strip of trees standing *across the line* of prevailing winds, may in exceptional cases be blown down, because the Redwoods, like the other great trees of California and Oregon, are without taproots. The writer (who has been through the Redwood belt twice from end to end and has visited practically every grove of importance) never has seen a single instance where trees have been blown down en masse, and he has seen again and again isolated trees and groups of trees in most exposed positions, that have stood for years in defiance of wind and storm. This is particularly significant as many of these trees were imperfect or burned at the core and consequently had but insufficient support.

This myth of trees being blown down has been exploded again and again, but in order to kill definitely this old woman's tale it must be made the subject of an authoritative report by the Bureau of Forestry. The superstition stands precisely in the same class of evidence as does the silly story universally believed by trappers that the porcupine shoots its quills. It is strange that the one place where misinformation about zoology and the habits of animals flourishes most is among backwoodsmen and even guides, just as ignorance of the true principles of heredity is so widespread among the breeders of horses and dogs. In the same way, men in the lumber country are surprised when a skeptic from the outside world ventures to question the sacrosanct doctrine that, if cutting in a forest is once started, all the trees must be lumbered or they will be blown over by the wind. Possibly this belief has been encouraged by the wiser lumbermen for ulterior purposes.

The mere fact that there is little or no evidence of trees blowing over even though in the

most exposed positions, and the further fact that numberless trees, isolated or in groups, which have been deprived of all their supporting trees, stand for years without falling, are of little weight against this venerable superstition.

This yarn is encountered throughout the north, perhaps with rather more justification, among the yellow pine forests, but even there the writer has failed to find any evidence for it, although he does not pretend to have covered the ground as in the case of the Redwoods. Among the Redwoods one of the most noticeable features is the absence of fallen trees, such as cover the ground everywhere in Canada and the northern greenwood forests.

Another superstition of the same character is, that Redwood trees and timber are not injured by burning over because of the fact that these trees, like nearly all other very large trees of California, are resistant to fire by reason of their thick bark, and that many of them show scars of ancient conflagrations, even in the damp forests of the north. The result is that there has been a great deal of deliberate burning of brush, both preceding and following lumbering operations. In the ordinary lumbering operations the trees are felled and the masses of fallen material—brush, shattered branches and sometimes trunks—are then burned. This is said to be necessary in order to saw up the giant trunks, several reasons being given, chiefly the difficulty of lumbering among masses of fallen débris. The statement is also made that the workmen object to the alleged danger of cutting unless the rubbish has been burned.

However that may be, the burning results in very substantial destruction of good timber, estimated in some cases as high as thirty per cent. This proportion was said to be established by an experiment made many years ago by the A. B. Hammond Lumber Company, which has been unusually intelligent in the utilization of its holdings. A comparison was made between two tracts of equal area, one burned over in the usual wasteful manner and the other logged without burning, and the result showed that the burning destroyed about thirty per cent. of the timber. Whether or not there is any economy in the method of lumbering with assistance of fire, the public has a right to put a stop to this destruction of good timber because the time is coming when wood will be as valuable in California as it now is in Europe. What action would the state take, and rightly take, if the hotels in New York threw away one-third of the food which was purchased to supply their guests on the theory that it was their prop-



PILES OF GRAPE STAKES
Along the Highway, South Fork of Eel River, Humboldt County, in 1919.
Ph. Copyright by the Pecosan Art Co., Eureka, California



SPLITTING THE REDWOODS

Along the Highway, South Fork of Eel River, Humboldt County. Photograph by Chas. P. Punchard
August 1919. (See Page 107)



LUMBERING ALONG THE STATE HIGHWAY

South Fork of Eel River, Humboldt County. Photograph by Chas. P. Punchard
August 1919. (See Page 107)



REDWOODS ON SOUTH FORK OF EEL RIVER, HUMBOLDT COUNTY, CALIFORNIA
Looking south and up South Fork of Eel River with Bull Creek Flat Grove on right and Dyerville Flat Grove on left.
Photograph by the Freeman Art Co., Eureka, California

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ELWIN R. SANBORN,
Editor and Official Photographer

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SEPTEMBER 1919

erty? Surely this is one of the most glaring examples of the necessity of the state interfering with the management of private property to prevent its wasteful exploitation. Countless tons of slabs and lumber also are burned to get them "out of the way." Are there no by-products from lumber such as there are in the refining of petroleum or in the conversion of hogs into bacon?

In Garberville, we were received by a group of citizens headed by Judge F. A. Cutler and A. E. Connick, who showed our party over the road as far as Eureka, and pointed out the lumbering operations in full progress along the road, examples of which are shown in the accompanying illustrations on page 105.

The railroad ties were purchased under the authority of the United States Railroad Administration, but in justice to the officials it may be said that they did not realize the vast injury to the state highways when they authorized the use of Redwood timber for ties. The Railroad Administration, through its chief, Mr. R. G. Sproul, and Mr. H. W. Ellicott, Purchasing Agent of the Northwestern Railroad, immediately stopped the buying of ties from areas which would come within the proposed reservation, as soon as the matter was officially brought to their attention by the writer, and they expressed their entire sympathy with the plans for the preservation of these trees.

The cutting has been done in almost every case along the east bank of the south fork of the Eel River and on the very edge of the highway, and while the devastation is appalling, nevertheless the damage if arrested at the present time can ultimately be minimized.

Some distance below Garberville, the highway leaves the river and does not reenter the Red-

woods until just above Phillippsville, where there is a fine stand of Redwoods on the left bank. At Phillippsville itself there are five acres of very fine trees on both sides of the road, and again at Fish Creek there is a four-acre tract of Redwoods which has not yet been injured by cutting.

Below Miranda, on Logan's Flat, there is a fine stand on both sides of the road some four or five hundred acres in extent. This is offered for sale, but as yet there has been no cutting.

The first cutting below Garberville appears at Elk Creek, where a few trees have been cut for grape stakes, and more cutting appears a little below. Further down the river there is another stand of about 200 acres of bottom land, with more or less cutting. Further down again on the left bank is a very fine, thick stand of Redwoods, 700 acres in extent. This tract is not in immediate danger because it belongs to the A. B. Hammond Lumber Co., which is not cutting in this section. These trees undoubtedly should be included in any park along the highway. Below this point and near the river and highway, cutting is actively going on and there is serious danger of the entire destruction of the flat.

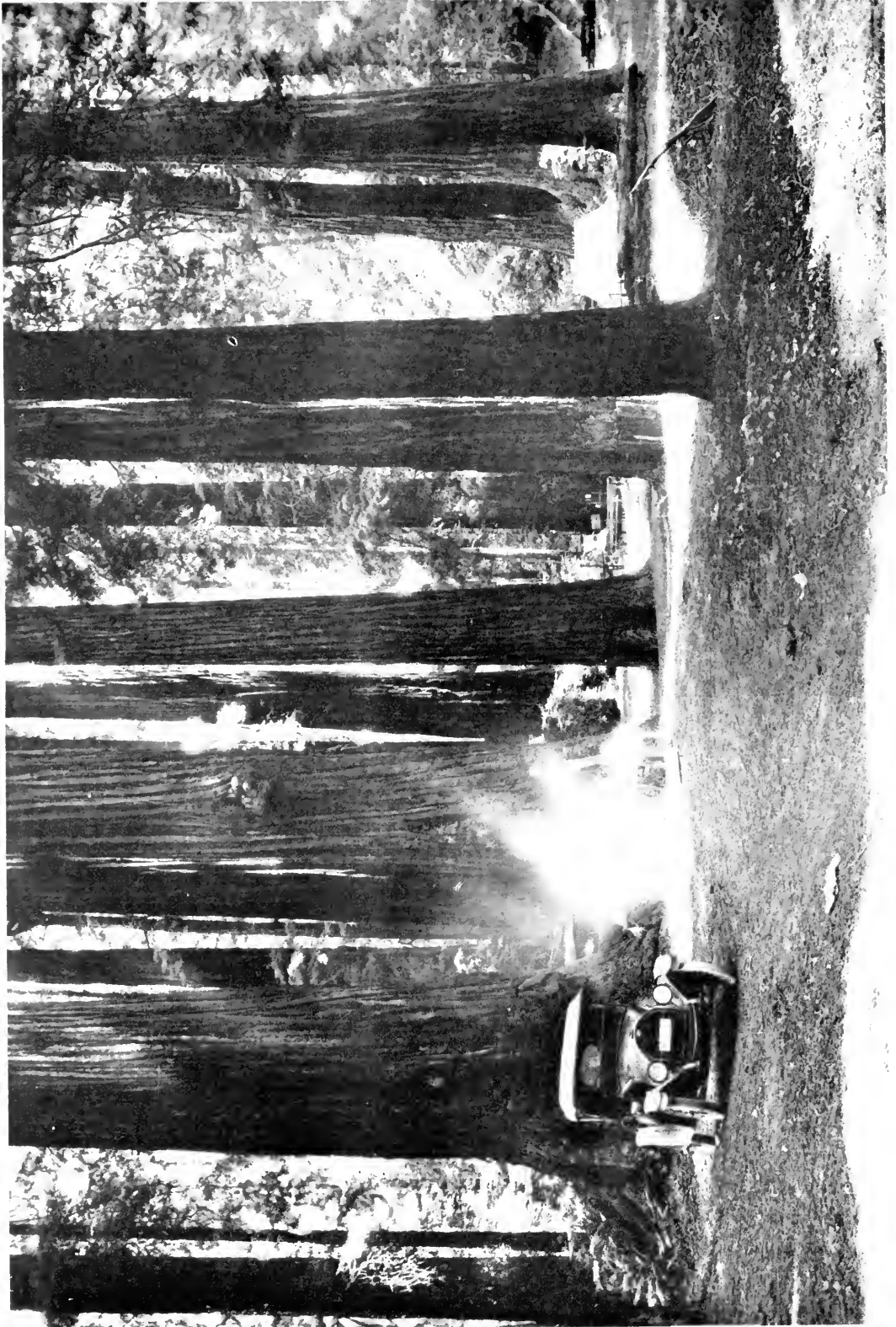
Near here and on the right side of the highway a stand of timber belongs to the University of Minnesota. It is reasonable to assume that a university—an educational institution—may be interested in the permanent preservation of these trees.

Below this again there are some small mills. Most of the cutting here has been finished, and while the destruction has been very serious further work has been suspended. See page 96.

Further down the river at Pepper Wood the forest has been greatly exposed by cutting, showing again that trees will stand along these river flats even though left entirely without shelter.

In connection with the theory that exposed trees blow down, it should be stated that the Northwestern Pacific Railroad owns a few Redwoods on its right of way between the tracks and the main Eel River, and that some of these trees, being absolutely isolated and in a very exposed position, have been overthrown by the wind.

After these scenes of devastation and threats of worse, we turned into Bull Creek Flat, perhaps the finest forest in the world. Bull Creek flows into the left side of the south fork of the Eel River just above Dyerville, where the south fork joins the main Eel. It is a magnificent stand of trees, some 10,000 acres in extent. See pages 90 and 106.



REDWOODS GROVE, DYERVILLE PLAT, HUMBOLDT COUNTY, CALIFORNIA, IN 1919
Entrance to the proposed Redwoods Park. Used as a camping ground. Now being cut by the Pacific Lumber Company. See Page 109
The Lumber Co. of Humboldt County, California

The total area which must be taken for the Highway Park, from the upper reaches of the South Fork down to the mouth of Bull Creek, contains about 10,000 acres in addition to the Bull Creek grove.

Bull Creek Flat belongs to the Pacific Lumber Company, except two sections in the upper part, which are the property of the Metropolitan Lumber Company. The officials of both these companies expressed their sympathy with the park project so far as it relates to Bull Creek Flat. This tract is said to contain one enormous tree, possibly the largest Redwood and the tallest tree in the world.

Immediately opposite the mouth of Bull Creek is Dyerville Flat, a triangular area between the two forks of the Eel River. At this point is located South Fork railway station, and it will be the natural entrance to the Park. The trees have been cleared away around the station to the extent of 150 or 200 yards and the Pacific Lumber Company has just begun lumbering at this point, in September 1919. If this cutting is continued it will greatly injure the approach to the proposed park. The reason given for commencing lumbering operations here is the shortage of man power, making it desirable to log on a flat and in the immediate vicinity of the railroad in order to keep the mills supplied. This cutting is the one great danger to the proposed park and is a most serious situation as yet unprovided for. See page 108.

Below the junction of the South Fork, the timber on the right bank of the main Eel River has been entirely destroyed and the landscape presents a scene comparable only to the devastated regions of France. Few Redwoods are left, but a magnificent example has been provided to show how the whole country will appear when lumbering operations are extended to the west bank. Reforestation is very slight and many places show no signs of regeneration. The stumps have been charred and burned, and the land lies worthless.

This cut over area on the right bank would be a suitable site for reforestation experiments under the present California Forestry Board. The land could be acquired, and reforested at nominal cost. It is only a question of time when the state, for its own protection, will be forced to undertake this work.

The fundamental tragedy of the whole Redwood situation lies in the fact that these great trees are nearly all in the hands of private owners who cannot reasonably be expected to sacrifice their holdings for public benefit. The state and nation, however foolish they may have been

in giving away these lands, must now buy back at least a large portion of them.

On the east bank of the Eel River for many miles below the Forks there are very few Redwoods in sight of the river except at Fortuna, where 2,300 acres of fine Redwoods have been preserved temporarily and are known as the Carson Woods. This grove is a mile or so east of the highway and should be preserved as a local park.

Along the lower stretches of the Eel River below Seotia, the Pacific Lumber Company is said to have checked reforestation by cutting during successive years the sprouting saplings which bravely tried to lift their heads around the old stumps. This was done under the impression that the land could be made available for pasturage. It has proved a failure and the only result has been to destroy in many places the chance of reforestation.

Below the forks on the left bank there is a magnificent stand of trees extending from the water's edge to the crest of the main slope, nearly all of which belongs to the Pacific Lumber Company. This area is some 20,000 acres in extent and the highway runs through it. It should be preserved, although the cost would be great, because of the size of the tract and the fine quality and thickness of the timber. Below this forest, the land on both sides of the river has been almost entirely destroyed, so far as timber is concerned.

At Eureka there was great interest shown on the occasion of our visit. The citizens were organizing actively to put a stop to the destruction of the Redwoods along the highway. Public meetings were held, which developed later into affirmative action to be described later. This enthusiasm was due in great degree to the recent visit of Secretary of Agriculture Houston and Col. Graves, Chief of the United States Bureau of Forestry, who had aroused the people of Humboldt County to the importance of protective measures.

Along the coast from Eureka north about twenty miles, there is little or nothing but cleared country, and beyond Arcata the road runs between some three or four miles of charred stumps which show no signs of reforestation. This condition appears to be entirely due to repeated fires.

At Orick, on the Big Lagoon, we passed the lower end of the Redwood Creek grove, one of the very best stands of Redwood in Humboldt County, approximately 50,000 acres in extent: the lower part largely owned by the A. B. Hammond Lumber Company and the upper part by

the Sage Lumber Company. This stand of Redwoods is largely mixed with spruce and the ground is carpeted with ferns in great abundance and variety.

One of the most conspicuous features of these Redwood forests, especially in Del Norte County and the northern portions of Humboldt, is the profusion of ferns. It is said that some thirty species of ferns are found in these woods.

This Redwood Creek stand is as yet untouched and should be carefully considered for a national park, because the timber being inaccessible can be acquired at a relatively small cost.

The most important groves north of this section are on the Klamath River and also on the Smith River in Del Norte County, known as Mills Creek grove. There are several other groves in this region and the Redwood stand throughout Del Norte County is exceptionally fine. The trees, perhaps, are less healthy but they are larger, more weird and grotesque in their contours, and while less valuable for timber, are even better adapted for preservation in a park. As Del Norte County is somewhat remote it may be immune for a short time from serious inroads by the axe, and there is no doubt that the Smith River Redwoods should be acquired ultimately for a national park.

On our return from the north the writer was called upon, as one of the representatives of the Redwoods League, to return to Eureka and take part in the park movement which had made great progress since our first visit. The citizens of Eureka had brought together at a public meeting all the small holders who were actually operating along the highway. As a result of this remarkable public demonstration, the lumbermen agreed for the sum of \$60,000 to suspend cutting and to give two-year options on their property at reasonable figures. Thirty thousand dollars of the money needed were donated by Stephen T. Mather and by William Kent, both Vice-Presidents of the Redwoods League. The remaining \$30,000 were supplied from the county funds of Humboldt County. These options were purchased upon the understanding that they would be exercised when due and the lands paid for by special county bond issues. The state of California is expected to furnish a general bond issue for the purchase of the remaining timber lands on the south fork of the Eel, together with the Bull Creek and Dyer-ville Flats, containing in all some 20,000 or 25,000 acres.

The great stand of Redwoods on the left bank of the main Eel River below the forks was left out of consideration temporarily because of the

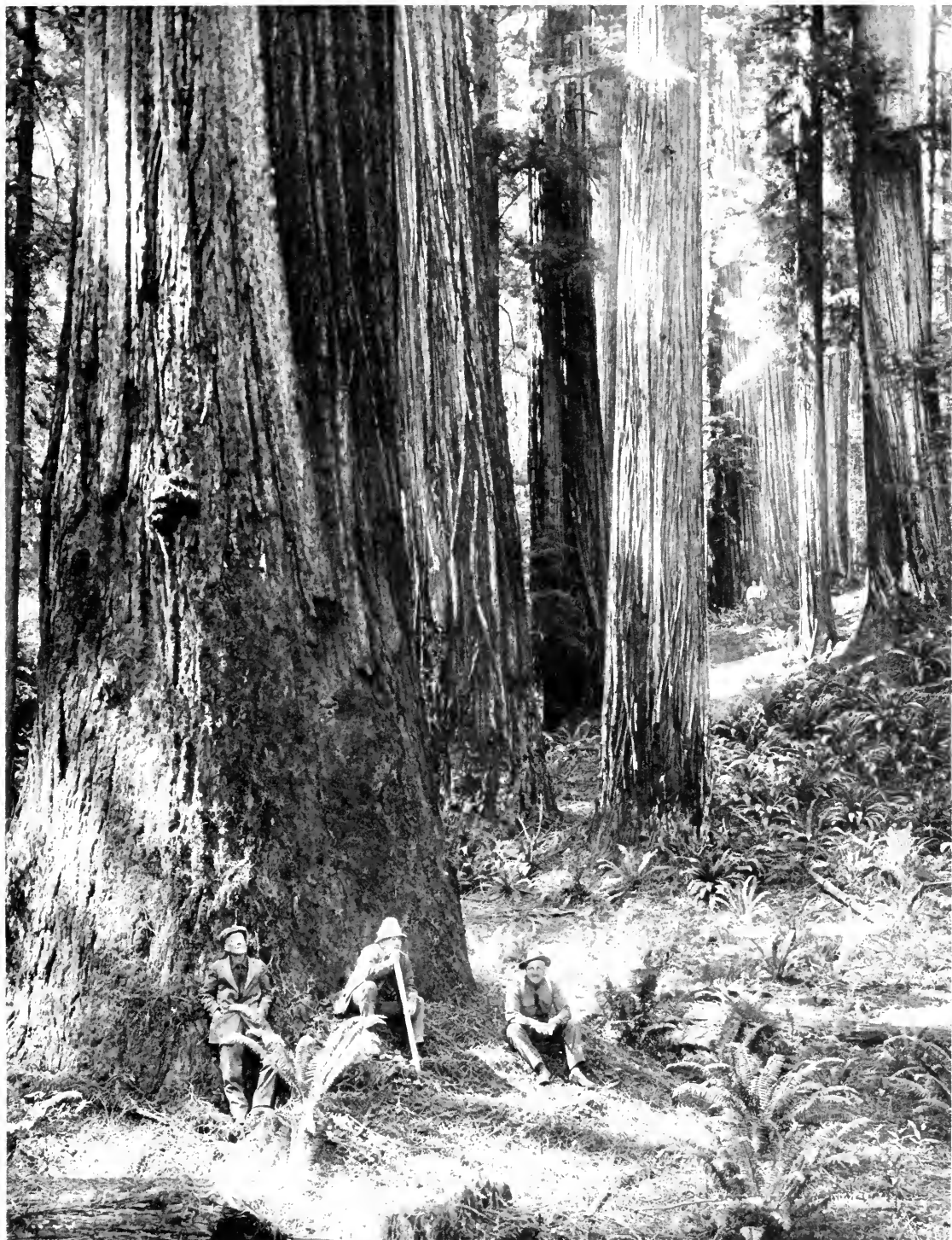
large sum involved in its purchase, but if the preservation of the South Fork is once secured public interest will inevitably demand the extension of the Park to include these trees. It is perfectly obvious from the aroused public sentiment in Humboldt County and elsewhere in California that the time is at hand when lumber companies will not be allowed to destroy such superb groves for a net return often absurdly small.

The protection of these Redwoods must be secured by Humboldt County and by the State of California, but the Federal Government also must do its share by establishing a large National Redwoods Park. To obtain Congressional action is a matter of many months, but a resolution has been offered in Congress by Representative Lea, calling for an investigation of the whole Redwoods problem with a view to the establishment of such a park. Heretofore national parks have been carved out of the public domain and it will be a new departure for Congress to buy private lands for public use on any such scale as will be necessary here.

The Redwoods League looks confidently to private holders of timber to donate either groves of Redwoods which are within the proposed park area (and several such donations have already been offered), but it also expects to receive gifts of Redwoods which can be exchanged for land within the park area. There are many patriotic Californians who will be only too glad to donate funds for the preservation of the Redwoods when they realize that there is an organization ready to accept, administer these groves and turn them over to the State or Nation when the proper time arrives.

The inhabitants of Del Norte and Humboldt Counties have scarcely awakened to the possibilities of fabulous wealth in their Redwoods as an attraction for visitors. The annual value of the tourist crop to southern California is said to be about \$80,000,000, although natural curiosities other than the climate sometimes have to be manufactured. As an amusing example of the business acumen of southern California, one may mention Ramona's "place of marriage" and her "grave," at San Diego, to both of which the tourist is religiously conducted and gravely assured that, if Ramona ever had lived other than in the brain of a sentimental novelist, she would have been married and buried at these mythical shrines.

When Humboldt and Del Norte Counties awaken to a full realization of the revolution effected by automobiles, which will flood the country with tourists as soon as the highways



KLAMATH RIVER REDWOODS

The tree on left is eighteen feet in diameter. Courtesy of Charles Willis Ward
(See Page 97)

are completed, they will find that a Redwood grove, such as Bull Creek Flat, is an attraction that is worth to the county many times the full net value of the timber contained in it. When the last Redwoods are destroyed, towns like Eureka and railroads like the Northwestern Pacific Railway will be without resources, and will die away like many another predecessor in the United States and Canada.

All these are purely commercial considerations. It is scarcely necessary to dwell on the crime involved in the destruction of the oldest and tallest trees on earth. The cutting of a Sequoia for grape stakes or railroad ties (and an eighteen-foot tree was cut this summer for that purpose along the new state highway) is like breaking up one's grandfather's clock for kindling to save the trouble of splitting logs at the woodpile, or lighting one's pipe with a Greek manuscript to save the trouble of reaching for the matches.

After the fall of the Roman Empire the priceless works of classic art were "needed" for lime, and statues by Phidias and Praxiteles were slacked down for this purpose, but the men who did it are today rightly dubbed "vandals and barbarians." What then will the next generation call us if we continue to destroy these priceless trees because lumber is "needed" for grape stakes and railroad ties?

It will cost money to preserve the Redwoods, —many millions; but California has no choice. Either the amount needed to save the groves must be supplied today, or else a far greater sum will be required ten years hence to purchase a butchered and isolated tenth part of the forests. Those are the only alternatives. If the groves are bought in their present condition and at relatively small cost, it will be a great innovation because heretofore Americans have followed the wasteful policy of recklessly exploiting wild life, forests and streams, and then as soon as the destruction is complete, the policy is changed, game is reintroduced and attempts are made to reforest the mountains at vast cost. But Redwoods never can be replaced.

In the negotiations for the purchase of timber lands, the officers of the Redwoods League found sympathetic and cordial support for the park among the lumbermen. They know the value of the timber only too well. The timber is their property, and their business is to cut and to realize on it. It is not fair for a community to ask them to hold this timber, to pay taxes on it and then to sacrifice their financial interests for the public welfare. It is the duty of the county, the state and the nation to pur-

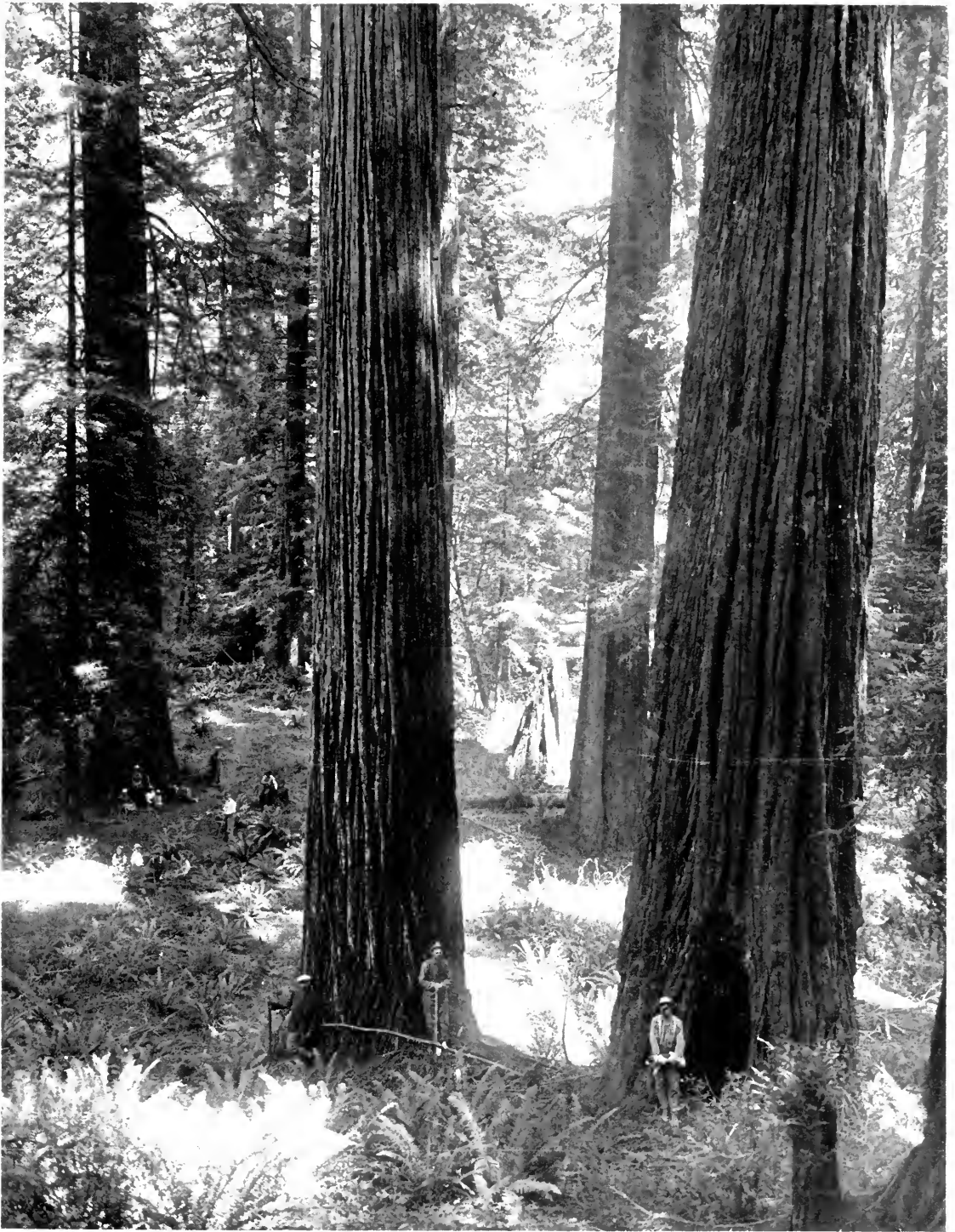
chase their holdings at the proper value. The question involved is not local, it is a state, a national, in fact an international concern, as the benefit derived from the preservation of the Redwoods will be for the people of the nation and the world at large. There is no reason why the lumbermen should abandon their interests without adequate remuneration, although in many cases individuals and companies will donate a certain portion of their timber, or sell at low figures. If the state had been sufficiently intelligent, before building the highways which made the timber accessible, to have approached the lumbermen properly and to have made it a condition precedent that a strip of timber on either side of the road should be donated, no doubt in many cases the lumbermen would have found it greatly to their interest to accept the proposal. The fact that this was not done was the fault of the state, its highway commission and its legislature, and not the fault of the lumbermen.

Experience has shown that the only effective, persistent and intelligent conservators of wild game have been sportsmen who have evolved from game killers into game protectors, and personally the writer believes that the lumber owners themselves, who are among the finest men on the coast, will be found to be most generous and helpful in any scheme looking to the preservation of the timber. The writer says this not out of any desire to placate the lumbermen, but from a genuine belief, based on the character of the men he has interviewed, that this will prove to be the case.

A distinction must be made between the owners who are doing the lumbering themselves, and absentee owners who have no interest in the country, no knowledge of the trees, and who are operating through local agents. These agents have no choice except to obey orders, and the absentee landlords have no interest in the country except to extract an income, and they care not a rap what happens to the land after it has been devastated and plundered.

The Redwoods League

Such were the conditions when the "Save the Redwoods League" was formally organized in San Francisco in July 1919. This League had its origin in a trip made in 1917 by the writer in company with Prof. Henry Fairfield Osborn and Dr. John C. Merriam through the groves of Mendocino, Humboldt and Del Norte Counties. The grandeurs of the Bull Creek Flat Grove and its threatened destruction weighed so heavily upon the members of this party that a letter was addressed to Governor Stephens of

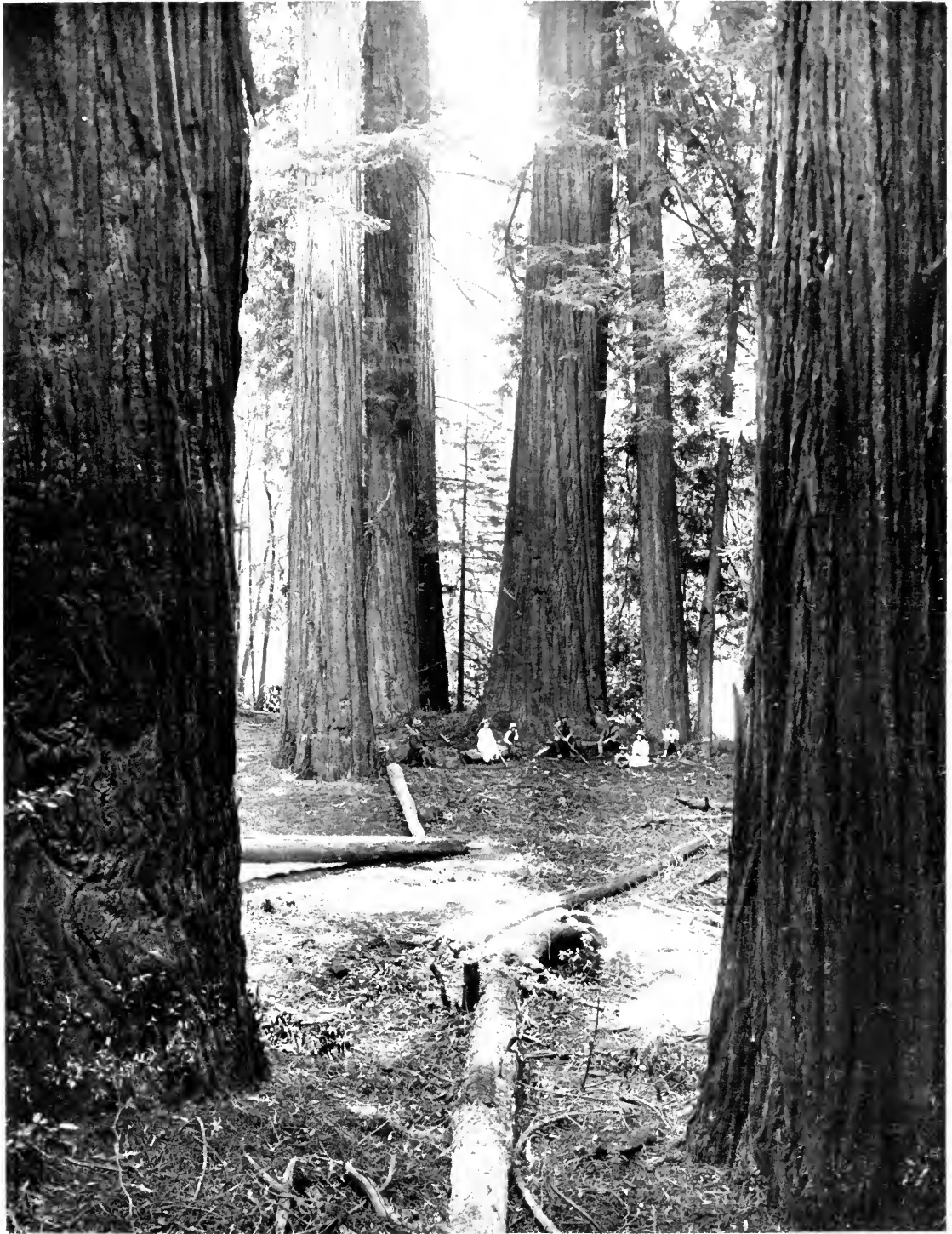


REDWOODS ON KLAMATH RIVER

One of the features of these Redwood forests is the growth of ferns. Courtesy of Charles Willis Ward
(See Page 97)



KLAMATH RIVER REDWOODS
Courtesy of Charles Willis Ward, Esq.
(See Page 97)



CAMPING SITES

Among the Klamath River Redwoods. Courtesy of Charles Willis Ward
(See Page 97)

California, who was about to visit the Redwoods in Humboldt County, asking him to take steps to preserve this stand of giant trees. See page 90.

During 1918 the writer again went to California and endeavored to interest the California Highway Commission in securing a strip of timber along the new highways, but owing to the war and other causes no substantial progress was made until the winter of 1918-19, when Dr. Merriam and the writer finally succeeded in enlisting the support of a group of patriotic Californians in the proposed League, which was then organized as follows:

President
FRANKLIN K. LANE
Secretary and Treasurer
ROBERT G. SPROUL
Executive Committee
JOHN C. MERRIAM, Chairman

Madison Grant	Henry S. Graves
William E. Colby	Stephen Tyng Mather
George M. Cornwall	Ralph P. Merritt
Wigginton E. Creed	Charles F. Stern
William H. Crocker	Walter Mulford
William Kent	Benjamin Ide Wheeler
Henry Fairfield Osborn	Ray Lyman Wilbur
Frank S. Daggett	Charles B. Wing
Joseph D. Grant	Wilbur L. Jepson

This League is at present under the active direction of Dr. John C. Merriam, of the University of California, Berkeley, California, and to him all applications for membership should be addressed.

Subscriptions also of any amount are greatly needed.

The purposes of the League are as follows:

(1) To purchase Redwood groves by private subscriptions and by county bond issues.

(2) To secure a state bond issue to buy the finest Redwood groves along state highways.

(3) To establish through Federal aid a National Redwoods Park.

(4) To obtain through state and county aid the protection of timber along the scenic highways now in course of construction throughout California.

(5) To encourage the state to purchase cut-over Redwood areas for reforestation by natural means, or by replanting where repeated fires have made sprout reproduction impossible.

Committees have been formed to study the subjects of Redwood distribution, variation and the most efficient commercial use of Redwood products, in the belief that nearly all the purposes for which this lumber is now used can be adequately served by second growth trees.

A committee of ladies has been formed and the assistance of automobile and other associa-

tions and clubs in California has been enlisted.

The salvation of these great trees probably will depend on two factors just entering into active political life.—one the automobilists and the other the women voters. The California Redwoods League is primarily indebted to two men, Stephen Tyng Mather and William Kent, for the funds to start work. These gentlemen guaranteed \$10,000 and thus made possible the preliminary organization and later made other subscriptions as described above.

Conditions in Oregon and Washington

After leaving California Mr. Mather and the writer traversed the entire breadth of central Oregon and Washington, motoring up the east side of the Cascades, down the Columbia highway to Portland, and up the Cowlitz Valley to Mount Ranier in Washington, thence southward through the Willamette Valley in Oregon, over to Klamath Falls and then south through the Pitt River Cañon back to San Francisco, a total of about 2,200 miles.

Preliminary steps were taken for the organization of leagues in Portland and in Seattle, under the direction of the ablest men on the coast. The objects in view were to preserve the timber along the main roads and along the shores of lakes and rivers, and to protect by the establishment of state parks the high peaks and crests of the Cascade Mountains. Both Oregon and Washington are constructing a system of great highways without adequate protection to the scenic features along the route.

Among other purposes in view are the extension of Crater Lake National Park to include the Diamond Lake region, so that the finest game district in Oregon can be protected as a game sanctuary. Crooked River Cañon also is under consideration as a national monument or state park.

Burney Falls in California should be preserved as a state park, but this is a matter outside of the scope of the Redwoods League and must be handled by the state. The sale of the wonderful beach road south of Monterey, known as the Seventeen Mile Drive, and the threatened destruction of its extraordinary cypress forests, unique in the whole world, for a real estate development scheme is another state matter which must demand attention.

The most immediate need in Oregon and Washington is for highway commissions of greater vision than those that are now constructing roads in accordance with obsolete methods. The state highway leading from Tacoma to Mount Ranier recently ran through the welcome shade of giant pines and firs, but



STATE HIGHWAY THROUGH THE REDWOODS. HUMBOLDT COUNTY, CALIFORNIA, IN 1917
Photograph by the Freeman Art Co., Eureka, California

the Washington Highway Commission cut a swath 300 feet wide and then burned the timber against the adjacent forests instead of in the middle of the strip. The result is that one drives for miles through a blasted desert of burned and twisted stumps of what was once a magnificent forest, while the trees on either side have been needlessly scorched and charred with fire, and are frequently girdled by the steel ropes used by the contractors as supports for derricks. All this is reckless waste, and the only defense that the writer heard was that the inhabitants of the state had not yet awakened to a realization of the value of trees and that road builders have "always cut a wide strip for a road so that the sun could dry the mud." The fact that modern roads are concrete and do not need drying has not yet come to their attention. The old-fashioned method of burning underbrush to "improve the forests," an inheritance from Indian days and locally known as "Pute forestry," is still in the ascendant.

The great fight, however, of both the Oregon and the Washington Leagues will be to induce the state not to build highways through timbered tracts *unless a strip of timber on either side is first secured as part of the right of way.* Such an arrangement nearly always can be made with the owners of the timber if the reservation of a strip of trees is made a condition precedent to the construction of the road. A notable example is the new highway now under construction from Ashland to Klamath Falls, Oregon, through some thirty miles of sugar and yellow pine and Douglas fir. If the trees are preserved, this will be one of the most beautiful roads in the world; if they are cut, the road will pass through a desert.

On the whole, the results of the summer's work,—the complete organization of the League in California, and the start made in Oregon and Washington,—have undoubtedly inaugurated a movement which will have far-reaching effects. The energy of the earnest and able men now in charge of the California League, and the tremendous popular support behind it, probably will solve the problem of the Redwoods of Humboldt County. The forests of the north may have to await action by the federal government; but if the trees along the south fork of the Eel are saved, public sentiment will be overwhelmingly in favor of their preservation.

The task of the Leagues in Oregon and Washington will be harder. The population is less dense and has far less respect for trees. The magnificent Columbia highway, which is prov-

ing to be a profitable investment for Portland, may serve as an example, but even there the promoters failed to secure the land along the right of way and will have to pay out large sums to secure the continuance not only of the forests but of the water supply of the falls along the route. The borders of the highway with its trees could have been secured at the start with but small expenditure. When lumbering operations have completed the destruction of the timber on the mountains above the highway, and Multnomah Falls shall have dwindled away, Oregon probably will awaken to the necessity of preserving such scenic features as then remain intact.

In Washington, the contrast between the cool and wooded road within Mount Ranier National Park, which has been built without injury to the trees, and the devastated horror which the State Highway Commission has constructed outside of the Park boundaries, inevitably will strengthen the hands of the Washington League and perhaps enable it to save the trees along the highway between Tacoma and Seattle, where beautiful forests at the side of the road are now sacrificed for fire wood.

As this goes to press, the welcome news comes from Bend, Oregon, that the Shevlin-Hixon Lumber Company is considering the creation of a memorial to the late Thomas Shevlin by the dedication of the timber in Tumalo Cañon and perhaps along the highway to the purpose.

With the co-operation of Col. Graves and the Bureau of Forestry, other stretches of timber along new roads may thereafter be set aside systematically so that the Forest Reserves as well as the National Parks can be utilized by the public as driveways and camp sites. The increase of motor traffic especially along the proposed system of highways to connect the important national parks in the far west will make these proposals widely popular.

Throughout the Pacific states there are everywhere evidence of the old competition between the growing enlightenment of the people and the forces of destruction. Old frontier conditions have passed—waste of natural resources, scenic or otherwise, sooner or later will be checked and a proper appreciation of the value of an undified nature will succeed—but the problem of today is to save for coming generations some substantial portion of our national endowment.

The author desires to make special acknowledgment to Mr. Chas. Punchard, the talented landscape architect of the National Park Service, who accompanied Mr. Mather and himself, for many of the photographs used in this paper.

New York Zoological Society

THE NEW YORK ZOOLOGICAL SOCIETY is a private scientific association which, under contract with the City of New York, is vested with the sole control and management of the New York Zoological Park, and of the New York Aquarium.

The Society is national in scope and appeals to all Americans who are interested in the preservation of our heritage of wild life. The forces at work for the destruction of animals and birds are multiplying rapidly, and the Society believes that great efforts are necessary to preserve and protect the remnants.

To those who are interested in the study and preservation of all forms of wild life in North America, the Society offers an economical, efficient and permanent organization devoted to that end. The work contemplated for the future is as follows:

1. *Endowment Fund*.—The increase of the present Endowment Fund is the most imperative need. Without a substantial addition, either by donations or bequests, the Society will not be on a satisfactory financial basis, and its work will continue to be hampered for lack of funds. The present Fund is less than \$375,000.

2. *Zoological Park*.—Development of the Zoological Park, 264 acres in extent, and the care and increase of its collection of over 4,000 animals.

3. *Aquarium Development*.—Development and administration of the New York Aquarium, and the extension of its marine exhibits of nearly 6,000 specimens.

4. *Aquarium Improvements*.—The alteration of the present Aquarium Building so as to remove the boilers that are daily flooded at high tide, to a site outside the present building. The space then could be devoted to additional exhibits. Several more rooms are needed, also, by the administrative force, and for research work in connection with the scientific utilization of the immense mass of gross material that is available. This change would cost upward of \$100,000.

5. *Pension Fund*.—The enlargement of the Permanent Pension Fund for employees. The Society's contribution to the present fund is \$8,000, of which \$4,335 is derived from a fund of \$100,000 provided through the generosity of the late Andrew Carnegie. An additional \$150,000 is required to provide adequate relief for widows, the permanence of the present pension plan and to relieve the Society of its annual contribution of \$3,665.

6. *Tropical Station*.—Maintenance of the Tropical Zoological Station in South America for study and research work in tropical life, the publication of the scientific results obtained, and as a source of supply for the Park and Aquarium collections.

7. *Publication*.—Scientific studies on the care of wild animals and fishes in captivity. This work should be accomplished in 1920.

8. Publication in *Zoologica* of a series of scientific articles of great value on living animals, and in *Zoopathologica* of medical and pathological material on the diseases of wild animals.

9. *Pathology and Anatomy*.—Research and investigation in pathology and anatomy through the Prosector's department.

10. *Photographs*.—Publication in permanent form of photographs taken at the Park of great value to science.

11. *Wild Life Paintings*.—Completion of the gallery of oil paintings to include all American species of large mammals and of such other mammals and birds as are threatened with extermina-

tion. These pictures are of great artistic merit and are prepared from accurate studies gathered in the habitat of each animal. Nineteen pictures already have been completed and hung in the Administration Building.

12. *Heads and Horns Museum*.—The erection and equipment of a museum on Baird Court to contain the National Collection of Heads and Horns. This Museum will be open to the public, and will contain the present collection of 870 specimens, which is already of unique value, as many of the species represented are verging on extinction. Under existing conditions abroad, the Society will have the opportunity of securing many record specimens at low prices. The fund has been partly subscribed, but more will be needed to increase the variety and number of the collection.

13. *Zoological Library*.—Establishment of a zoological library, greatly needed for research work at the Park. It is the intention of the Society to install in the library at the Zoological Park all the literature available, that relates to the present world-wide conservation movement. The literature on this subject is widely scattered, but the best of it should be gathered and made available for those engaged in preserving our heritage of wild life and forests. Adequate funds have not been available for the library, and scientific work, even for the identification of specimens, has suffered accordingly.

14. *Game Protection*.—Establishment of Game Sanctuaries in the National Forest Reserves. This is the most practical plan for permanently protecting American wild life. The success of the Yellowstone National Park as a game sanctuary has been abundantly demonstrated.

15. *Game Protection*.—Maintenance of existing game laws, and the extension of laws prohibiting the sale of game, spring shooting, use of automatic guns, and in the promotion of closed seasons for species threatened with extinction. Appeals for financial help for these causes are constantly received from all over the United States and Canada.

16. *Stream Protection*.—Many of the finest American rivers and streams have been polluted by dye waste, chemicals from pulp mills, sawdust, sewage from towns and villages, and other defiling and poisonous materials. The result has been the destruction of many valuable and interesting fishes, notably salmon and shad, and the transformation of beautiful woodland streams into a menace to public health and a blot on the landscape. The Society intends to attempt to abate these evil conditions and prevent their extension, as soon as funds are available.

A Notable Event for Bird Lovers
"The World's Most Perfect Zoological Monograph"



TEMMINCK'S TRAGOPAN, Tragopan Temmincki (J. E. Gray)
(Specimen color-plate from volume one)

A MONOGRAPH OF THE PHEASANTS

By WILLIAM BEEBE

Published by the New York Zoological Society, through the co-operation of Col. Anthony R. Kuser.

To be completed in four royal quarto volumes, richly illustrated with reproductions in color of paintings by Thorburn, Lodge, Knight, Fuertes and Jones, also many photogravures and maps. It appeals equally to the layman and the scientist. Only 100 copies are available for sale in America. Volume I is now ready for distribution. Price is \$62.50 for each volume.

Prospectus, specimen plate and subscription blank will be mailed on application.
ZOOLOGICAL SOCIETY, ZOOLOGICAL PARK, NEW YORK CITY.

GENERAL INFORMATION

ABOUT THE

New York Zoological Society

MEMBERSHIP IN THE ZOOLOGICAL SOCIETY

Membership in the Zoological Society is open to all interested in the objects of the organization, who desire to contribute toward its support.

The cost of Annual Membership is \$10 per year, which entitles the holder to admission to the Zoological Park on all pay days, when he may see the collections to the best advantage. Members are entitled to the Annual Report, bi-monthly Bulletins, Zoologica, Zoopathologica, privileges of the Administration Building, all lectures and special exhibitions, and ten complimentary tickets to the Zoological Park for distribution.

Any Annual Member may become a Life Member by the payment of \$200. A subscriber of \$1,000 becomes a Patron; \$2,500, an Associate Founder; \$5,000, a Founder; \$10,000, a Founder in Perpetuity, and \$25,000 a Benefactor.

Application for membership may be given to the Chief Clerk, in the Zoological Park; C. H. Townsend, N. Y. Aquarium, Battery Park, New York City, or forwarded to the General Secretary, No. 111 Broadway, New York City.

ZOOLOGICAL PARK

The Zoological Park is open every day in the year, free, except Monday and Thursday of each week, when admission is charged. Should either of these days fall on a holiday no admission fee is charged. The opening and closing hours are from 10 o'clock A. M. until one-half hour before sunset.

NEW YORK AQUARIUM

The Aquarium is open free to the public, every day in the year: April to September, 9 A. M. to 5 P. M.; October to March, 10 A. M. to 4 P. M.

PUBLICATIONS

<table border="0" style="width: 100%;"> <tr> <td style="width: 80%;">Annual Report No. 1.....</td> <td style="width: 10%;">Paper</td> <td style="width: 10%;">\$.40</td> </tr> <tr> <td>" " " 2.....</td> <td>"</td> <td>\$.75</td> </tr> <tr> <td>" " " 3 and 4, each..</td> <td>"</td> <td>.40</td> </tr> <tr> <td>" " " 5 " 6, " ..</td> <td>"</td> <td>.75</td> </tr> <tr> <td>" " " 7 " 8, " ..</td> <td>"</td> <td>1.00</td> </tr> <tr> <td>" " " 9 " 10, " ..</td> <td>"</td> <td>1.25</td> </tr> <tr> <td>" " " 11, 12, 13, 14, 15.</td> <td>"</td> <td>1.00</td> </tr> <tr> <td>16, 17, 18, 19, 20, 21, 22, 23, each...</td> <td>"</td> <td>1.00</td> </tr> <tr> <td>Our Vanishing Wild Life (Hornaday) postpaid</td> <td>"</td> <td>1.65</td> </tr> <tr> <td>Destruction of Our Birds and Mammals (Hornaday).....</td> <td>"</td> <td>.15</td> </tr> <tr> <td>Notes on Mountain Sheep of North America (Hornaday).....</td> <td>"</td> <td>.40</td> </tr> <tr> <td>The Caribou (Grant).....</td> <td>"</td> <td>.40</td> </tr> <tr> <td>The Origin and Relationship of the Large Mammals of North America (Grant).....</td> <td>"</td> <td>1.00</td> </tr> <tr> <td>The Rocky Mountain Goat (Grant)</td> <td>"</td> <td>1.00</td> </tr> <tr> <td>Tropical Wild Life (Beebe; Hartley; Howes).....</td> <td>"</td> <td>3.00</td> </tr> <tr> <td>Zoologica Vol. I. 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Publications for sale at 111 Broadway, Zoological Park and the New York Aquarium.



THE CASCADE CORNER OF YELLOWSTONE PARK

BY WILLIAM C. GREGG

View of Cave Falls, Falls River, taken from inside of falls

EXAMINE the remote areas of that Wonderland which we call Yellowstone Park and you will ask yourself if men are not often guided by a power outside of themselves. For those areas of the park contain divine beauties of which the men who fixed the limits of the park had no knowledge whatever. They very properly put a rim around the geysers, canyons, and mammoth hot springs. For the last fifty years people have been examining that rim, and every year some new beauty spot or strange form of nature is brought to light that has evidently been tucked away by the Almighty, to be some day a glad surprise to his children.

1920 put on record dozens of falls and cascades in the southwest corner before unknown.

1921 has added more notable features in the same area.

Every once in a while some one sees a way to make money out of a National Park, and pretty soon a bill appears in Congress purporting to benefit humanity greatly, and, incidentally, allowing a group of men to take control over certain park areas.

Eight thousand acres of the southwest corner of Yellowstone Park were wanted for a storage reservoir by certain Idaho irrigation interests. The bill got through the Senate without discussion, but was held up in the House of Representatives by some people, who first wanted to know, you know! what kind of a corner it was, anyway. Those who went in there in 1920—and it wasn't hard to do at all—found more falls and cascades than in all the known parts of the park put together. They found a campers' paradise right where the reservoir was to be placed, with beautiful woods, meadows, and trout streams. They thought Idaho, which was very

close, had a much larger financial interest in the opening up of an entrance—an Idaho entrance—into the park through this beautiful region than in



"HOLD-UP BILL"

A Park bear that holds up autos for refreshments

water storage for irrigation. Why couldn't they have both? Because the covering of eight thousand acres with

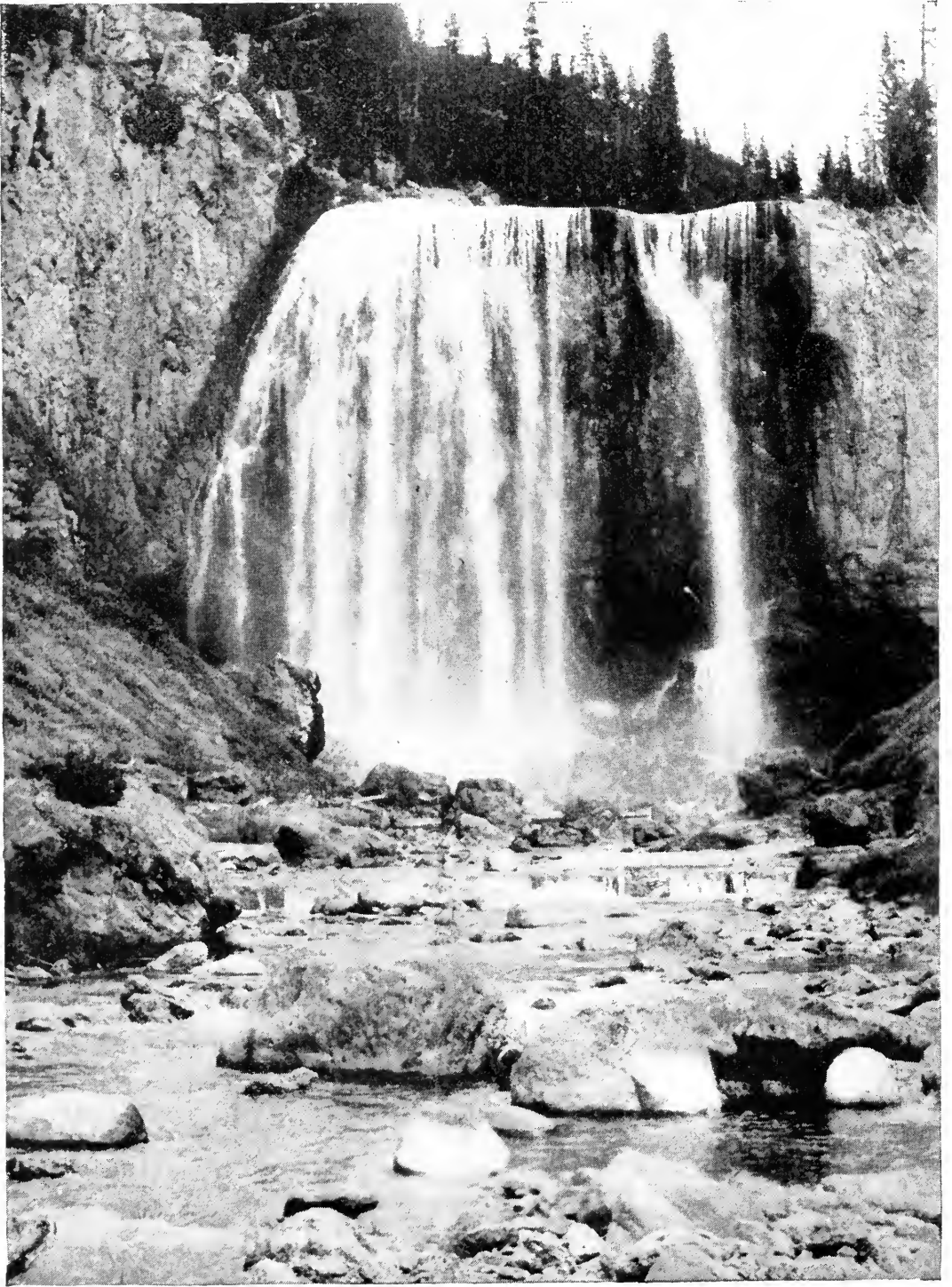
water would cut off a roadway, and when the reservoir water was drawn off in the crop season (July and August) ugly mud flats and dead trees would make a ghastly stain on that region and prevent its being used by the American people for their education and enjoyment. Happily, the protest was so general and emphatic that the bill died in the last Congress, and has small chance of being resurrected again.

The Idaho people themselves are partly responsible for this. When they learned the facts, many men and women already using irrigation water for their farms could see a larger market, at higher prices, if they could boom the tourist business. They already have a large irrigation water supply outside the park, and can get more if and when needed.

I am showing on these pages photographs of some notable falls in this small corner which never faced a camera before the summer of 1921, and a few others which had their first pictures taken by me in 1920.

We have heard a lot of folderol in recent years about social uplift. The word "idealism" sometimes makes us sick. Half-baked thinkers from half-civilized lands are trying to tell mankind how to create an earthly paradise. But the good old United States, without brag or bloodshed, has been gradually developing a better way. We have much liberty and equality, we have distributed our lands mainly among the thrifty poor.

Out of our public domain the people have created National Parks here and there. The fruits of Western civilization are a great distribution of the necessities of life. The flowers are our public schools and colleges, our libraries and hospitals, but perhaps greater than all are our parks—city, State, and Na-



(C) Wm. C. Gregg, 1921

Few human beings have looked on this fall, which for centuries has shown its beauties only to its Creator and his dumb creatures. The fall is something over one hundred feet. It must not longer remain nameless



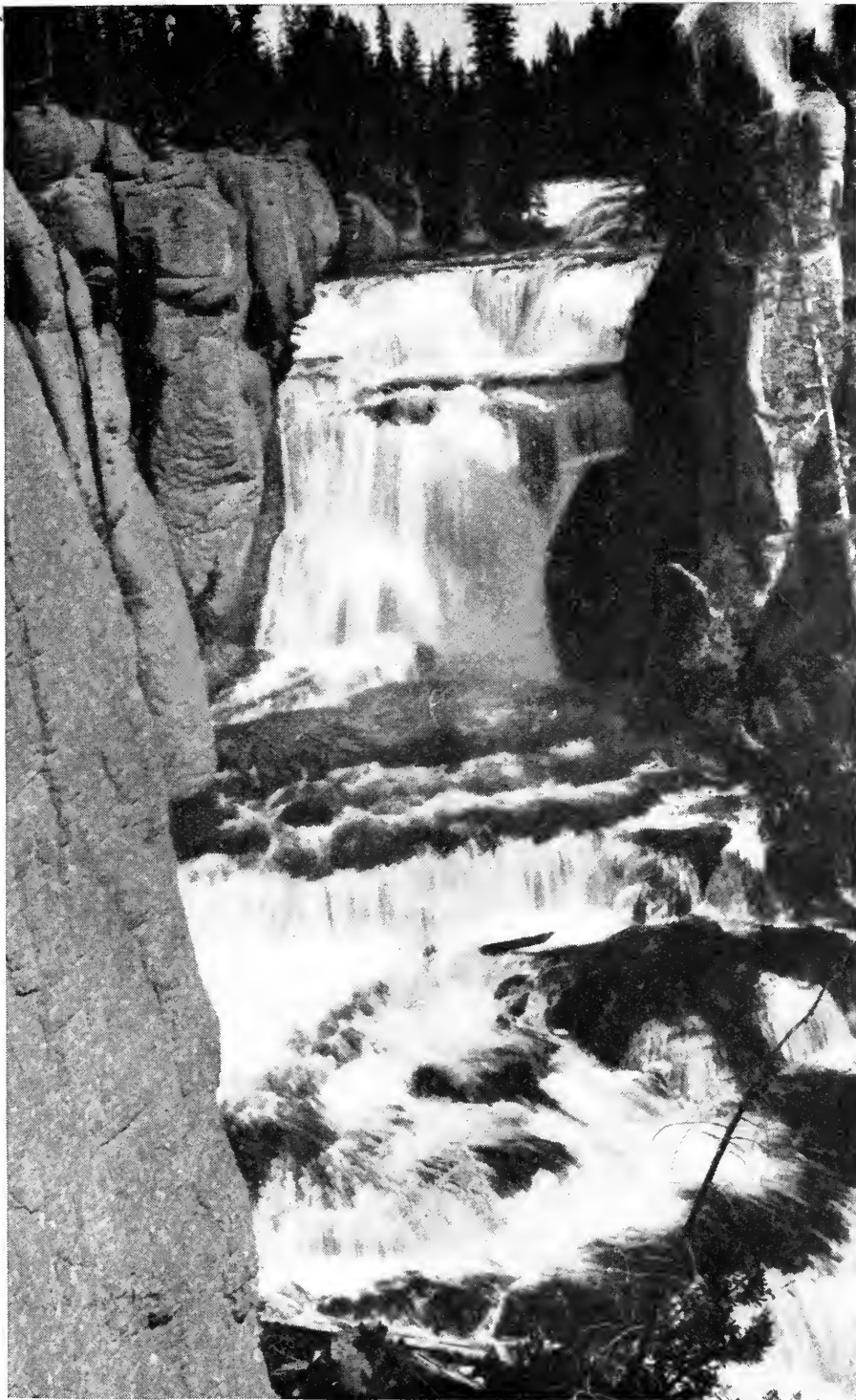
(C) Haynes, St. Paul

This cascade has a perpendicular fall of about two hundred and fifty feet. It is only a stone's throw from Balchelder Column. At its base stands a splendid spruce grove open and delightful for camping. We who saw it ran out of adjectives. Can you name it?



(C) Wm. C. Gregg, 1921

Can you imagine the thoughts of our party (Colonel Birdseye, Raymond Little, Glen Smith, and the writer) when we first looked on this spectacle? It was marked on the map in 1884—we found the date of the visit carved on a tree—but neither before nor since have others seen it, or, if they have, they have successfully suppressed the fact. It was named by the mapmaker. It would be interesting to know what you would have done in his place. Note Colonel Birdseye fishing



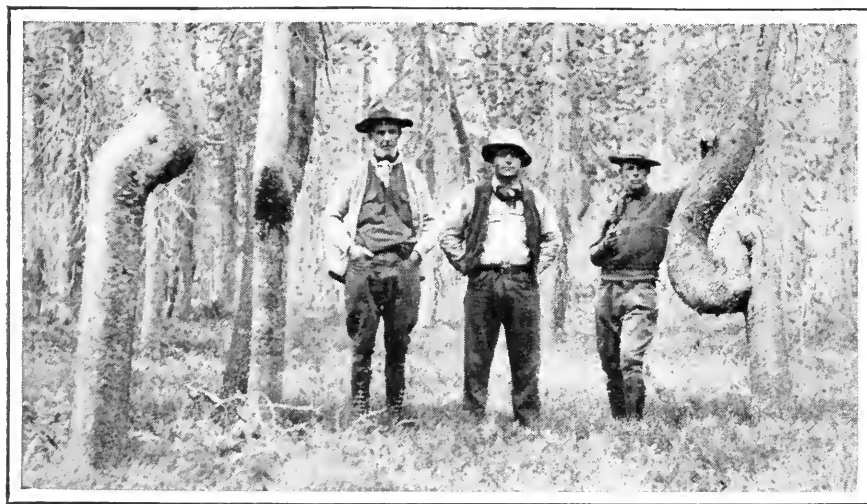
(C) Wm. C. Gregg, 1921

Our party was within one mile of this great sight last year, but did not know it. It remained for the park Superintendent, Horace M. Allright, who followed a month later, to make its beauties known. The first photograph, however, was not made until this year, by the Boston Expedition, composed of Frederick Law Olmsted, Desmond Fitzgerald, H. P. Kelsey, and Herbert Gleason

Fighting through thickets and down timber, we gained a canyon, and followed a game trail along its steep sides. We turned our horses loose, not fearing whether we could catch them again or not. The greater question in the mind of man and beast was, Will I make the grade or the bottom? The point of safety was a hundred feet above this scenic gem. By what name would you have it called?



(C) Wm. C. Gregg, 1921



This picture has been named "The Six Crooks." Right to left: Colonel Birdseye, Ranger Little, Glen Smith

tional. Great and small estates they are, finer than kings thought of before, yet they belong to you and me.

The main course of our Nation has been right, but things sometimes go so wrong that faint-hearted patriots would sail the seas for some desert island, there to spend their days in lofty thoughts and digging clams. But the price of progress is persistence. At its worst, we in America have the best.

There is a clarion call to every man and woman to do something for the common good. Every move should be toward making good conditions permanent. I choose to work for National Parks—for permanent parks; not only your property and mine, but that which will be owned by our children's children a century hence.

Let us lay down some park principles:

1. National parks are created for the benefit and enjoyment of the people—the whole public.

2. No commercial project—for private advantage—must be permitted to cross the boundaries of these parks. The rights of the public forbid it.

3. Park extensions should be advocated only after careful and unprejudiced study of the reasons for and against them.

4. The motives of plausible persons who express great devotion for the parks they wish to exploit are always to be suspected.

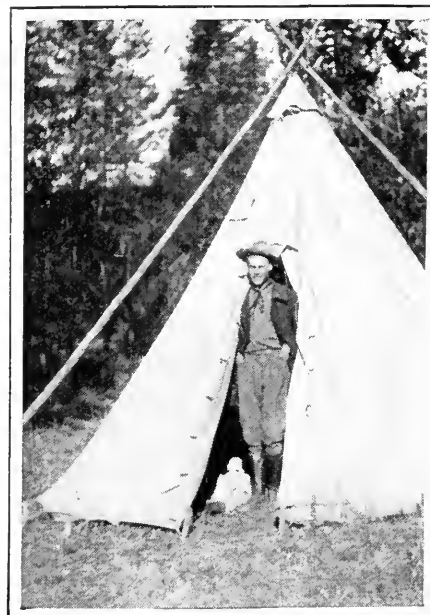
5. Persons living near a National Park who feel themselves harmed by their situation must bear their burden cheerfully. Disagreeable neighbors cannot

always be moved away, and when better known are often not as bad as they were thought to be.

WE have had some difficulty in getting names for falls and cascades in the southwest corner.

You and I can propose, but the Geographic Board, which sits in Washington, D. C., disposes. Its general disposition is negative; its mission in life is to prevent inappropriate names and to stop people from putting themselves on the map.

J. E. Haynes and I tried hard to find names of men identified with that re-



(C) Wm. C. Gregg, 1921

The sad expression of Glen Smith when he hears the cook yell, "Come and get it!"



(C) Haynes, St. Paul

This stately scene is near the mouth of Beehler Canyon. The proposed reservoir and dam would have backed the water almost to its base, and when the waters were drawn off for irrigation purposes would have left a mud morass some miles in length and breadth

gion not already honored. Our search was rewarded with two—Ferris, who visited the Geyser Basin around 1830, and was the first man to write about it, and Phillips, one of the defenders of the park, thirty years ago. We named two streams for them.

We called a monumental rock "Batchelder Column," in memory of A. G. Batchelder, who was one of the seven

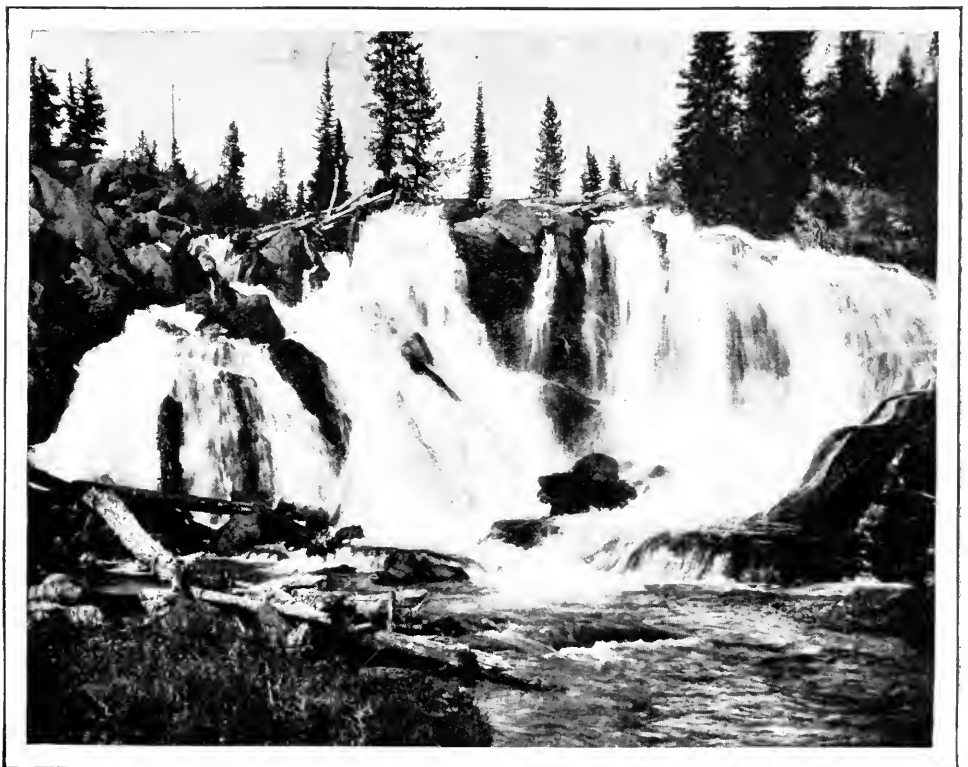
prominent men to lose their lives in the airplane accident near Washington last year. He was a good friend of the southwest corner. As Executive Chairman of the American Automobile Association he gave us valuable assistance.

The Geographic Board recognizes only dead men. There are several men whom we would like to honor, but they are alive and well, thank God! So we can-

not name anything after George Horace Lormer, or ex-Secretary John Barton Payne, or the present Secretary of the Interior, Albert B. Fall, who has entered the sanctuary of his park service with a truly National purpose and vision.

We did find one other lead which brought us to a notable name. The General Federation of Woman's Clubs has been very much interested in National

Mr. Haynes suggested the name of "Ragged" for these falls. I rebelled, because there is no beauty in rags, and offered "Rugged" as a compromise. The result was that we were hardly on speaking terms until we had had something to eat. The name will not be settled until we hear from you or somebody



Parks, and assisted us last winter in the fight to preserve the Yellowstone Park from commercialism, so we asked their President, Mrs. Alice Winter, to lay before their Board an invitation to suggest a name of some great American woman (not now living) for one of the fine falls. The invitation was accepted, and the name of Susan B. Anthony, selected officially, will be presented. I am sure we will have an "Anthony Falls" that will be a splendid monument in a beautiful place to a great woman.

Mr. Lorimer has emphasized the appropriateness of Indian names. I do not find Indian traditions connected with the park. The region was too infernal to be liked by superstitious Indians. They seldom went there, unless they used it as a temporary refuge in time of tribal wars.

The Shoshone and Crow tribes lived near, and the name of the former is attached to the second largest lake in the park.

I am sure that suggestions from readers of *The Outlook* would be appreciated.

Dr. Henry van Dyke gave me "Silver Scarf Cascade" as his way of adopting one of our nameless beauties.

I don't want to suggest a naming contest. I would take to my bed if an avalanche of "Rainbow Falls" and "Bridal Falls" came in. Yet any one fired with the spark of suggestion may deeply satisfy unnumbered multitudes of park pilgrims by just the right name now, and, remember, the Geographic Board "will get you if you don't watch out."

Two or three of the pictures shown here were named by the topographical map maker, who evidently found them in 1884. Two are inappropriate. Personally, I should like to see names selected for all at the present time.

Space does not permit the showing of photographs of ten more cascades and falls; they are all beautiful, and may deserve any name suggested for those we are showing.

MANY friends know of the report I made last year that the topographical map (made in 1884) was in error in several places, including the marks indicating a large swamp of several thousand acres in the southwest corner.

The promoters of the irrigation project made the most of this feature of the Government map to get their plan through Congress, deceiving many of their own Idaho supporters.

Colonel C. H. Birdseye, Chief of the Topographical Department, went into that region this summer at the same time Mr. J. E. Haynes and I did. His report just made to the Interior Department on the "Swamp" is interesting:

The old topographic map erroneously represents the drainage in the basin below the mouth of the Bechler Canyon. In fact, the map of this region is so poor that revision is impracticable and the area should be entirely resurveyed. *The swamp symbol appearing on the map is entirely misleading.* This area is cov-



(C) Haynes, St. Paul

BATCHELDER COLUMN

I am naming this in memory of one of our friends who aided us last year, A. G. Batchelder, formerly Executive Secretary of the American Automobile Association. (Note figure at base.)

ered with large open meadows on which grows an abundance of good grass, which I am told used to be cut in large quantities for winter cattle forage. These meadows are dotted with irregular patches of timber, but by far the larger percentage of the area is in grass. A number of small sloughs traverse the meadows, but otherwise the basin is dry and firm, so that one can ride almost anywhere on horseback. A fair wagon road traverses the meadows from the

Bechler ranger station to a point within two miles of the mouth of Bechler Canyon.

Colonel Birdseye also confirmed the statements made by several of us last year, that there are dam sites just outside this section of the park for use in storing water for Idaho irrigation.

Commercialism in park invasions seems to follow the maxim of a certain class of lawyers: "Anything to win the case."

The history of the misrepresentation of facts in the southwest corner of Yellowstone Park and the final publicity of the truth demonstrates the advisability of going slow in such matters and insisting on full investigation before a single step is taken against the parks of the people.

I am sure that the people of Idaho will indorse this, and that their Congressman who aided the proposed invasion was himself deceived.

We own nineteen National Parks. It has recently been proved that their best guardians are the many National societies who are loosely federated together in park defense. This federation obviates duplication and gets prompt and Nation-wide action when dangers really threaten our park possessions.

I give below a list of these federated societies:

American Association for the Advancement of Science.

American Association of Museums.

American Automobile Association.

American Bison Society.

American Civic Association.

American Defense Society.

American Federation of Art.

American Forestry Association.

American Game Protective Association.

American Museum of Natural History.

American Scenic and Historic Preservation Society.

American Society of Landscape Architects.

Associated Mountaineering Clubs.

California Academy of Sciences.

Camp Fire Club of America.

Ecological Society of America.

Field Museum of Chicago.

General Federation of Women's Clubs.

League of American Penwomen.

National Arts Club of New York City.

Boone and Crockett Club.

National Association of Audubon Societies.

National Automobile Chamber of Commerce (manufacturers).

National Federation of Business and Professional Women.

National Geographic Society.

National Parks Association.

New York Zoological Society.

Sierra Club.

If you are not already a member of one of them join *now*. More associations will be welcomed by our General Chairman, Mr. George Bird Grinnell, 238 East Fifteenth Street, New York City. Mr. Grinnell will also be glad to put the reader in touch with any of the societies already federated in park defense.

Recreation

UNITED STATES DEPARTMENT OF AGRICULTURE
OFFICE OF THE SECRETARY
WASHINGTON

May 26, 1925.

Mr. Ovid M. Butler, Secretary,
American Forestry Association,
Washington, D. C.

Dear Mr. Butler:

Your letter of May 18 is received.

The recreational use of the National Forests is a subject of considerable interest to me, which I have discussed in some detail with the Forester, Colonel Freeley, but, unfortunately, I have been unable to give it the careful study which should precede my specific approval of principles or rules to govern it, nor will I be able to do so until after I return from my western trip. My general views on the subject, however, are known to the Forester and I understand that a statement which he has in preparation is in substantial accord with those views.

In my consideration of this subject the points which stand out prominently are these: The National Forests purely as a by-product of their systematic management and without impairment of their primary functions are making an enormously important contribution to public welfare and social progress; that this result is being secured not in conflict but in harmony with the intent of Congress; that notwithstanding the large degree of free use which is allowed, recreation in the National Forests is more than paying the costs of its supervision; and that the many people who know and use the National Forests are well satisfied with the present state of affairs. These facts lead inevitably to the conclusion that the Department's present policy is fundamentally sound and probably not in need of material modification.

Very sincerely yours,

W. M. Jardine,

Secretary. .

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OUTDOOR RECREATION ON THE NATIONAL FORESTS

E. A. Sherman, Associate Forester,
Forest Service, United States Department of Agriculture

Americans turn naturally to the mountains and the woods for their outdoor recreation. If the woods and mountains are close to well-populated districts it is inevitable that the citizens of the neighborhood will use them as camping grounds and for hunting, fishing, tramping and other forms of life in the open for which they offer opportunities. It is for this reason that the National Forests have been used for recreation in addition to the main purposes of timber production and watershed protection. Before the National Forests were thought of the people of the surrounding country used these areas, so far as conditions permitted, for recreation; after the establishment of the Forests they simply continued this use and expanded it with the growth of population and the increased accessibility of the areas. The Forest Service did not create the idea of recreational use of the National Forests; rather the public came in of its own accord, each year in increasing numbers, and the Forest Service recognizing that recreation was a resource, like timber and water, used its best efforts to see that it was so handled as to make the greatest returns to the national welfare consistent with the chief purposes for which the Forests were established.

The National Forests embrace parts of every mountain system and almost every forest region in the United States; they form the natural outlets of large populations, to which they are the logical, near-by, economically enjoyed fields for outdoor sport and recreation. To millions of people the National Forests are the natural and sometimes the only available playgrounds, other than their city parks. It is most vital to them that these areas should remain open for recreational purposes; but in this day of motors and good roads even the citizens of regions remote from the National Forests have a direct personal interest in recreation grounds where they can feel free to camp and enjoy themselves in their own way; so long as they obey the rules of good citizenship and good sportsmanship while in the woods.

A Question Has Been Raised

The natural and inevitable increase in the recreational use of the National Forests has recently brought into question how far this use should be permitted to develop. Is such a use a legitimate one, compatible with the purposes for which the Forests were created? Is the expenditure by the Forest Service of official time and public funds in the development of the recreational resources of the National Forests and in the supervision of their use by the public a legitimate expenditure? Those who have raised the questions have, to all intents and purposes, given

them negative answers. To the citizen, however, especially to the citizen who has visited the National Forests, the natural effect of the questions is surprise that they should ever have been raised. Why not? Forestry means trees; watershed protection means well vegetated soils, gently flowing streams; these mean natural beauty, salubrious climatic conditions, more abundant fish and game, increased opportunity for wholesome outdoor play for both old and young. What disadvantage is there in allowing the people of the United States the fullest and freest opportunity to realize upon these by-products of National Forest management, if they are careful with fire, refrain from polluting the streams, and do not interfere with the legitimate use of the material products of the Forest land? Why isn't it a function of the Federal Government to make all of the properties under its control contribute in all constructive ways to the moral and physical growth and general well being of its citizens? Why shouldn't public funds be applied in some small degree to permit the development of supplemental forms of public-land use which will help the American people to counteract the stress and intensity of modern civilization, especially when a larger return can be obtained for less money than in any other way?

Character of the National Forests

A decision on an issue like this requires facts, and a lot of them. It requires study and a lot of it. It requires intelligent understanding of a wide variety of natural conditions and of human needs. It is too vital a matter to be disposed of by snap judgment or in the light of partisan sympathies.

Now, what are the facts? To begin with, there are more than 150 National Forests; they contain a lot of land, 157 million acres; they are distributed from the Canadian border to the Mexican border, from Maine to California.

By far the greater part of the National Forests were created from the public domain. They represent the residue of the great forest wealth once in public ownership; the most rugged and least accessible bodies of timberland which, through the greater difficulties of exploitation, had been least attractive to the private appropriator. They therefore consist, to a certain minor degree, of great peaks and ridges rearing above timber line; rugged canyons; tumbling streams and waterfalls; steep slopes; blank areas of little or no timber value; all interspersed among the valuable timber-bearing lands. Such areas cannot, as a rule, be eliminated from the National Forests without leaving the Forests a patchwork of complicated boundaries, uncoordinated units, and conflicting jurisdictions, difficult and expensive of administration. There is no reason why such lands should be eliminated, as their important public values can best be realized under public management and they can be publicly administered as parts of the National Forests much more effectively and at much less

expense than in any other way. Then, too, they contain, or interlock with, important economic resources which inevitably will in time prove indispensable to the industrial growth of the nation and, therefore, deserve an economic form of management. There seems to be no reason why separate organizations should, on limited areas within the National Forests, discharge at considerable public expense administrative functions which the Forest Service can just as efficiently discharge at much less expense and with much less interference with administrative and economic processes.

Effect of Roads and Trails

The factor which in recent years has done most to increase the use of the National Forests for outdoor recreation is the extension of the public highway system under the Acts of Congress approved March 4, 1913, July 11, 1916, February 23, 1919, and November 1, 1921. Through the instrumentality of these Acts the National Forest areas, which previously had stood as partial barriers to free trans-State movement, have been made much more accessible to the motorist. The roads were not built to promote recreational use, but on the contrary were designed to fill in the gaps in the State and county systems of public highways. Their purpose was and is to promote the free movement of people and commodities, to facilitate the use of the raw materials produced by National Forest lands, and to permit the better protection of the public properties. The fact that these roads give access to areas of recreational value is an incidental result rather than a primary purpose in the projection and construction of the road system. Coincident with the extension of National Forest roads and trails there has been a corresponding growth in the use of automobiles for outdoor recreation and in the amount of leisure time available for that purpose.

The increased use of the National Forests for outdoor recreation during the past eight years is well illustrated by the following statistics:

Years	Estimated number of summer visitors including travelers over Forest roads	Total number of cabins and residences	Total number of hotels, resorts and camps
1917	3,160,300	3,269	359
1918	3,322,365	3,646	460
1919	3,964,344	3,987	395
1920	4,853,671	4,638	410
1921	5,455,420	6,133	529
1922	6,172,942	6,421	629
1923	10,543,893	7,394	719
1924	11,394,366	8,349	724

Development to Meet Demands of the Public

As recreational use increased in volume the Forest Service initiated certain constructive activities not so much to promote recreation as to protect public property and public health. In order to concentrate the people upon areas of least hazard from the standpoint of fire and sanitation, camp grounds were set aside and partially developed. Summer home communities were encouraged and progress was made in plans to care for the increasing numbers of people who resorted to the Forests for recreation. Provision was made for public service utilities, especially the simple, inexpensive, outdoor camps conducted under municipal, semi-civic or private auspices; the little resorts, the stores, garages, stables and other facilities so essential to modern comfort even in the wilderness. Every form of land use which contributes to public convenience and is not inconsistent with the primary purposes of the Forests is recognized and provided for. In awarding such privileges the laws of business competition are allowed full operation. There are no arbitrarily established limitations.

The Forest Service has now recognized approximately 1500 small areas as National Forest camp grounds, for the free accommodation of the traveling public, and upon these camp grounds is installing the simple improvements necessary for the protection of public health and public property. The structures and other improvements constructed by the Forest Service for the convenience and safety of its summer visitors hardly justify any charge of extravagance. They are simple: almost primitive. Some small amount of clearing; toilets; fireplaces; sources of water supply; in some cases inexpensive tables and benches combined; in others, simple booths wherein maps and information material may be placed; in still others, but rarely, inexpensive shelters. The only thing to be said against these improvements is that there is not enough of them. There should be more of them, for they are cheap insurance against both fire and disease, besides adding greatly to playground value of the public properties.

At the close of 1924 the total value of all recreational improvements constructed by the Forest Service was \$131,472.00. This sum includes all direct expenditures by the Forest Service, the contributed labor of Forest officers, the value of labor, materials, and cash received from cooperators, and the value of improvements acquired without cost to the Forest Service. The cooperative contributions amounted to \$27,644.00, consequently the net cost to the United States for all of the work done has been \$103,828.00. These figures do not, however, include the costs of repairs and maintenance. During 1924 those costs amounted to \$5,203.00. In earlier years, when there were fewer improvements, less need for repairs and lower salaries, the maintenance costs were considerably less. Considering the millions of people to whom these facilities have been of service their cost will hardly seem excessive.

Community Camps

An important feature has been the development of recreational communities or areas within which appropriate provision can be made for the construction and operation of county, municipal, semi-civic, and private outdoor camps and resorts, individual summer homes, and the various forms of commercial utilities required to meet the needs of the summer population. These areas are systematically surveyed, mapped, and classified, after which their occupancy is allowed under special-use permits, for which in all cases, except those of a public character, rentals are paid.

One might, perhaps, jump to the conclusion that the management of such communities would make heavy demands on the time and funds of the Forest Service, but, in fact, the reverse is true. The National Forest regulations afford the dwellers in such communities abundant means for self-government and many of the communities make and to a large extent enforce the rules and improvement plans essential to their comfort, convenience and safety; the local Forest officers transacting much of their official business with the Advisory Committees selected by the permittees. This simplifies administration and, more important still, minimizes the need for official supervision or control.

Free Use Consistent with American Ideals

No charge is made for permission to use the National Forest highways, trails, camp grounds, or lands except where exclusive rights or special privileges are desired and these are allowed only where they do not interfere with free use of the Forest by the general public. People use the Forests without restriction or restraint, except where it is necessary to require that camp fire permits be secured, free of charge or, in rare instances of great emergency, to restrict people to designated camp grounds or to exclude them from areas of exceptional fire danger. Ordinarily each visitor has unrestricted opportunity to follow his own bent. If he prefers to camp at some isolated point rather than to patronize an established camp ground he is at liberty to do so. The only requirements imposed upon him are care with fire and conformity to reasonable sanitary rules. As a result recreation in the National Forests is democratic, informal, and largely unrestricted. In the National Forests monopolies are not allowed but, on the contrary, competition in serving the public prevails.

As a matter of fact, this policy of free use is consistent with the general practices of Federal, State and municipal governments. For example, the supervision of navigable water bodies entails heavy public expenditures but nobody thinks of charging for the privilege of boating or bathing in such waters, which, by the way, have the same relation to the recreation needs of some of our citizens that the National Forests

have to others. In the municipal parks, the privileges of riding or walking through, of picnicking on the grass, of looking at the animals in the zoo, of transporting people for hire, are almost invariably allowed without charge. Only the special privileges and forms of use, which involve the exclusion of the general public, are charged for. This same principle prevails in the National Forests.

The fact that the majority of recreational uses are allowed without charge does not mean, however, that this form of service is not self-sustaining. It more than pays its way.

The revenues for the fiscal year 1924 which were derived from special-use permits amounted to \$207,636.98, of which by far the greater portion represents recreational uses. During the same fiscal year the expenditures for the construction of sanitary and fire protective improvements upon camp grounds amounted to \$18,425; those for the protection of fish and game to \$50,263; and those for the administration of land uses other than timber-sale and grazing to \$113,185. This latter figure is by no means all chargeable to recreation, but if the full amount is debited the total expenditures for all activities contributing to recreation and game conservation in the Forests aggregated only \$181,869. Notwithstanding the large degree of free use allowed, the revenues from recreational use exceed the expenditures for such uses.

Congressional Approval

It has been intimated that extensive public use of the National Forests is contrary to the wishes of Congress. That is not so. In the few cases in which it has expressed itself, the attitude of Congress toward recreational use of the National Forests has been favorable. The Organic Act of June 4, 1897, provides, in part, as follows:

"Nor shall anything herein prohibit any person from entering upon such Forest Reservations for all proper and lawful purposes, including that of prospecting, locating, and developing the mineral resources thereof; Provided, That such persons comply with the rules and regulations covering such Forest Reservations."

The right of the Secretary of Agriculture to administer National Monuments embracing land under his jurisdiction is clearly established by the Act of June 8, 1906. The Act of March 4, 1915, authorizes the Secretary of Agriculture to issue for periods not exceeding thirty years permits to responsible persons or associations to use and occupy suitable spaces or portions of ground in the National Forests for the construction of summer homes, hotels, stores, or other structures needed for recreation or public convenience. The Agricultural Appropriation Bills for the

fiscal years 1923, 1924, 1925, and 1926, contain appropriations of \$10,000, \$15,000, \$25,000, and \$25,000, respectively, for the construction of sanitary and fire improvements upon public camp grounds within the National Forests.

Guiding Principles in the Recreational Use of National Forests

Unless some radical change is made in National Forest policies which will discourage or restrict recreational use, it is probable that the use of Forest highways, trails and camp grounds by the recreation-seeking public will progressively increase. There will be appreciable increases in the numbers of outdoor camps maintained on National Forest lands by counties, municipalities, and other political units, and by semi-official or unofficial agencies. The numbers of summer homes maintained under special-use permit will mount progressively from the present total of 8,349 to several times that number. Private capital and initiative engaged in supplying the outdoor recreational needs of the American public will turn to the National Forest fields of operation and will encourage and develop many forms of outdoor sport under National Forest conditions which are now of minor consequences. The present question is whether this growth should or should not be allowed. It can be taken care of without any serious impairment of or interference with the primary functions of the National Forests, and the question is purely one of Departmental policy or organization.

Recreational use is not inconsistent with forest management, but to the contrary is a common by-product of such management. In the public and private forests of other countries, with long-established systems of forest management, public use for recreation is thoroughly recognized as an important form of land service. In this country, where the inclusion within forest units of small areas clearly most valuable for recreation is unavoidable, and where economic and industrial needs ultimately will require coordinated use of every available resource, the correlation of recreation with forest management is even more desirable and necessary than elsewhere. In view of this the logical, the inevitable conclusion is that one of the proper functions of the National Forests is to afford the people of the United States opportunity for outdoor recreation; that one of the proper functions of the Forest Service is to administer the recreational use of the National Forests in proper coordination with other forms of use; that the expenditure of Department of Agriculture appropriations in the development of recreational facilities on the National Forests, to the fullest extent authorized by Congress and compatible with other public needs, is a proper use of such appropriations.

In considering the question, the people of the United States will want to know how the Department of Agriculture will be guided in its future treatment of the subject. In categorical detail, the principles

the Forest Service will submit to the Secretary for approval are as follows:

1. The recognition of recreational use as a form of National Forest land service of great public value and importance, which shall be systematically coordinated with other forms of land use such as timber production, streamflow protection, and forage production.

2. The recognition of recreation management within the National Forests as a function of the Forest Service, which in discharging that function may apply to areas of recreational value the methods required for their best development, to the extent compatible with other National Forest requirements and within the limits set by Congress.

3. The retention under National Forest management of all areas of recreational value, except where Congress considers that that value so completely transcends all others and is of such public importance as to require a separate and specialized management.

4. The systematic extension of recreation plans to all areas of National Forest land possessing recreational value.

5. The continuation of present plans for the establishment upon National Forest lands of county, municipal, semi-public and private outdoor camps, sanitoria, schools, resorts, hotels, etc.

6. The encouragement of simple, inexpensive forms of mass recreation, including the extension and improvement of public camp grounds upon National Forest land.

7. The continuation of the present policy of making no charge for recreational use of the National Forests except where the land is used for commercial purposes or exclusive use of specific tracts or other special privileges are granted.

8. The continuation of the policy authorized by Congress of issuing permits for individual summer homes or cabins where they will not interfere with more general forms of public recreation.

9. The encouragement, through equitable permit provisions, reasonable rental charges, and minimum restrictions, of the establishment upon Forest lands of the various utilities or forms of service needed for the convenience of the public.

10. The regulation of recreational use of National Forest lands to but only to, the extent necessary to protect public health and property, to secure reasonably full development and utilization of recreational resources, and to avoid undue conflict with other uses of the Forests.

7

DEPARTMENT OF THE INTERIOR

NATIONAL PARK SERVICE NEWS

No. 1

April 1919.

To the Members of the National Park Service:

The National Park Service has now been organized for two years and it is high time that we have a definite means of keeping in touch with each other. The office in Washington is a very busy place and it is hard work to give the employees in the field, by correspondence, all of the important matters that are transpiring here. Then, too, the personnel in the individual parks should be brought into closer touch with each other.

The ideal arrangement, of course, would be that each superintendent should visit every other park at least once a year. When I visited Mount Rainier National Park last December I had Superintendent Sparrow come up from Crater Lake and see some of the excellent work done there by Mr. Reaburn, and, later, I took Mr. Reaburn with me down to Yosemite National Park where, under Superintendent Lewis' efficient management, nearly a million dollars has been spent on improvements. These trips were very illuminating to the visiting superintendents, as they were to me, and I wish trips of this kind could be made oftener.

In the meantime we can learn something of what the other fellow is doing through the medium of a news bulletin which we are just inaugurating. It is being started in a preliminary way and we will be glad to have suggestions from any member of the Service that would make it more useful.

The tourist season will be on us very soon with every prospect of a greater business than we have ever had in the parks and with everything tuned up to take care of a record travel. I want the man in the field to get in personal contact with the Washington office and to realize some of the broad purposes which we are trying to carry out. I am sure this little publication will help to that end very materially.

Very cordially yours,

STEPHEN T. MATHER,

Director.

Now Eighteen National Parks

The 65th Congress created two new national parks, the Grand Canyon in Arizona and the Lafayette in Maine. President Wilson approved both acts

February 26, 1919. These new parks were formerly national monuments, the Grand Canyon and the Sieur de Monts.

The Lafayette National Park has the distinction of being the first eastern representative of the national park system.

While the Grand Canyon has been formally made a national park, the administration is still in the hands of the Forest Service, as our Service has no funds to care for it and probably will not receive any before the beginning of the new fiscal year.

Park Bills Which Failed to Pass the Last Congress.

The proposed Roosevelt National Park, in California, which will include the present Sequoia Park, besides the wonderfully scenic country of the High Sierra to the east, was not created by the past Congress. It was left at the post together with many other important bills. However, it received a volume of favorable publicity both in the East and West and the chances of this splendid and fitting memorial to the late ex-President Roosevelt being created by the new Congress are very bright.

Another disappointment of the last Congress was the failure of the proposed enlargement of the Yellowstone Park to go through. After passing the House and being reported favorably to the Senate by the Public Lands Committee, it lost its place on the unanimous consent calendar by unexpected objection, which was later withdrawn, and was defeated through lack of time in the strenuous closing days.

The Sundry Civil Bill, which carries the appropriations for national parks, was one of the appropriation acts which failed to pass the last Congress. Funds for the next fiscal year for the parks will have to be obtained in the extra session of the new Congress.

Exhibit of Winter Scenes in the National Parks.

A photographic exhibit of winter scenes in the national parks was displayed in the Cosmos Club of this City and attracted a large attendance. It will form part of a Department exhibit in the New Interior Building where even a larger audience is expected to view it. Later it is planned to send the exhibit to New York, Boston and Chicago.

The parks represented are Mt. Rainier, Yosemite, Yellowstone, Sequoia, Grand Canyon and Rocky Mountain. The exhibit includes some of the finest work of such well known photographers: Herbert W. Gleason, Asahel Curtis, Jack Haynes, Rodney Glisan, Lindley Eddy and the Wiswall Brothers.

U. S. Railroad Administration Plans
to Stimulate Park Travel:

This should be our greatest year for park travel, as, besides the energetic publicity work now being carried on by the various automobile highway associations, the U. S. Railroad Administration has authorized the publication of series of national park and monument booklets to stimulate tourist travel by rail this coming season.

A list of the parks and monuments represented in this series, follows: Yellowstone, Glacier, Mt. Rainier, Crater Lake, Yosemite, Sequoia and General Grant, Grand Canyon, Mesa Verde, Rocky Mountain, Hot Springs and Hawaii National Parks and Petrified Forest and Zion National Monuments.

The publication of these booklets is in charge of the Western Advertising Committee of the Railroad Administration, and the work is well under way. This Service has cooperated with the Railroad Administration, in this as in all other ways, with Mr. Robert Sterling Yard and Mr. A. E. Demaray of the Washington Office going out to Chicago to assist in the preparation of the booklets.

The Airplane in the National Parks.

In connection with plans for the dedication of the Grand Canyon as a national park an airplane flight may be attempted from rim to rim. It is probably that a landing station will be cleared on the south rim in the neighborhood of the Powell Monument.

Secretary Lane thinks it may be possible to ultimately establish a regular service from rim to rim in connection with administration and protection of the Powell Monument.

It has been suggested that flights from the Canyon could be made to Zion Canyon, Utah, and that the Rainbow Bridge, Navajo and Petrified Forest National Monuments could easily be visited on a triangle trip by airplane.

Notice comes from California that a flight from Mather Flying Field, Sacramento, to Yosemite Valley may be attempted this summer with Lieutenant Don Tresidder as pilot and Arthur C. Pillsbury as cameraman. Both these men are thoroughly familiar with the surrounding country and the Valley, Mr. Pillsbury having had a photographic concession in the park for a number of years.

Word comes from Rocky Mountain Park that a landing station in Estes Park may be cleared. It may be a familiar sight in the near future to see the Denver-Rocky Mountain Airplane Express sail into Estes Park with its load of park tourists.

Personal Mention.

Director Mather sails for Honolulu, Territory of Hawaii, April 10, and expects to return to the Pacific Coast about the 10th or 12th of May. His visit will be directly connected with matters pertaining to the Hawaii National Park.

Assistant Director Albright returns to Washington to assume the duties of Acting Director during Mr. Mather's absence. Mr. Albright has been in California for over two months looking after the national park interests in that State.

Mr. C. P. Punchard, Jr., who was appointed landscape engineer in the Service August 1, 1918, has several notable accomplishments already to his credit, namely, plans for a much needed and splendid gateway at the Cody entrance to Yellowstone to be erected this summer; plans for improvements to the Mammoth and Canyon Camps in Yellowstone now under way; studies of conditions in Sequoia and General Grant; and studies of the forestry conditions on the floor of Yosemite Valley.

Mr. Frank Pinkley, Custodian for several national monuments in the Southwest, made an investigation of the ruins of the sixteenth century Franciscan Mission in the Tumacacori Monument and work is now being carried out in accordance with his suggestions for the preservation of these remarkable ruins. Mr. Pinkley is also making plans for road improvements in the Petrified Forest Monument.

Mr. Reaburn, Superintendent of Mt. Rainier and Mr. C. P. Punchard, the landscape engineer, accompanied Director Mather on his visit to Grand Canyon early this year. Mr. Reaburn made some preliminary studies for road and trail improvements.

Mr. Herbert W. Gleason has been appointed an Inspector of the Department and will visit a number of parks in connection with his work in the near future.

Mr. Chester A. Lindley, Acting Superintendent of Yellowstone National Park, is now in Washington on official business.

Mr. W. B. Lewis, Superintendent of Yosemite, and Dr. W. P. Parks, Superintendent of Hot Springs, have been in the Washington Office this winter

A Word Regarding Our Mountain Lion Exhibit in Yosemite.

On April 27 of last year, Mr. Jay Bruce, ranger in Yosemite National Park, succeeded in killing a female mountain lion and capturing alive her three young kittens. Mrs. Gabriel Sovulewski succeeded in the difficult task of rearing them through their infancy, only to see two die after they

had grown into husky young mountain lions. However, the third lion is developing splendidly.

The exhibit has been augmented by the arrival of two more lions captured in early youth in Yellowstone. The lions are as tame as any other animal pets, treated with kindness and justice.

Suggestions and New Items.

Suggestions for the news bulletin should be addressed to the Director and plainly marked "For National Park Service News."

ORGANIZATION OF THE NATIONAL PARK SERVICE

Washington Office

Stephen T. Mather, Director.
Horace M. Albright, Assistant Director.
F. W. Griffith, Chief Clerk.
Robert Sterling Yard, Chief, Educational Division.

FIELD SERVICE
Engineering Division

George E. Goodwin, Civil Engineer, Yellowstone Park, Wyoming.
Charles P. Punchard, Jr., Landscape Engineer, Yellowstone Park, Wyoming.

The National Parks.

Hot Springs Reservation,	Dr. William P. Parks, Superintendent,	Hot Springs, Arkansas.
Yellowstone,	Chester A. Lindsley, Acting Superintendent,	Yellowstone, Park, Wyoming.
Sequoia,	Walter Fry, Superintendent,	Three Rivers, California.
General Grant,	Walter Fry, Acting Superintendent,	Three Rivers, California.
Yosemite,	W. B. Lewis, Superintendent,	Yosemite, California.

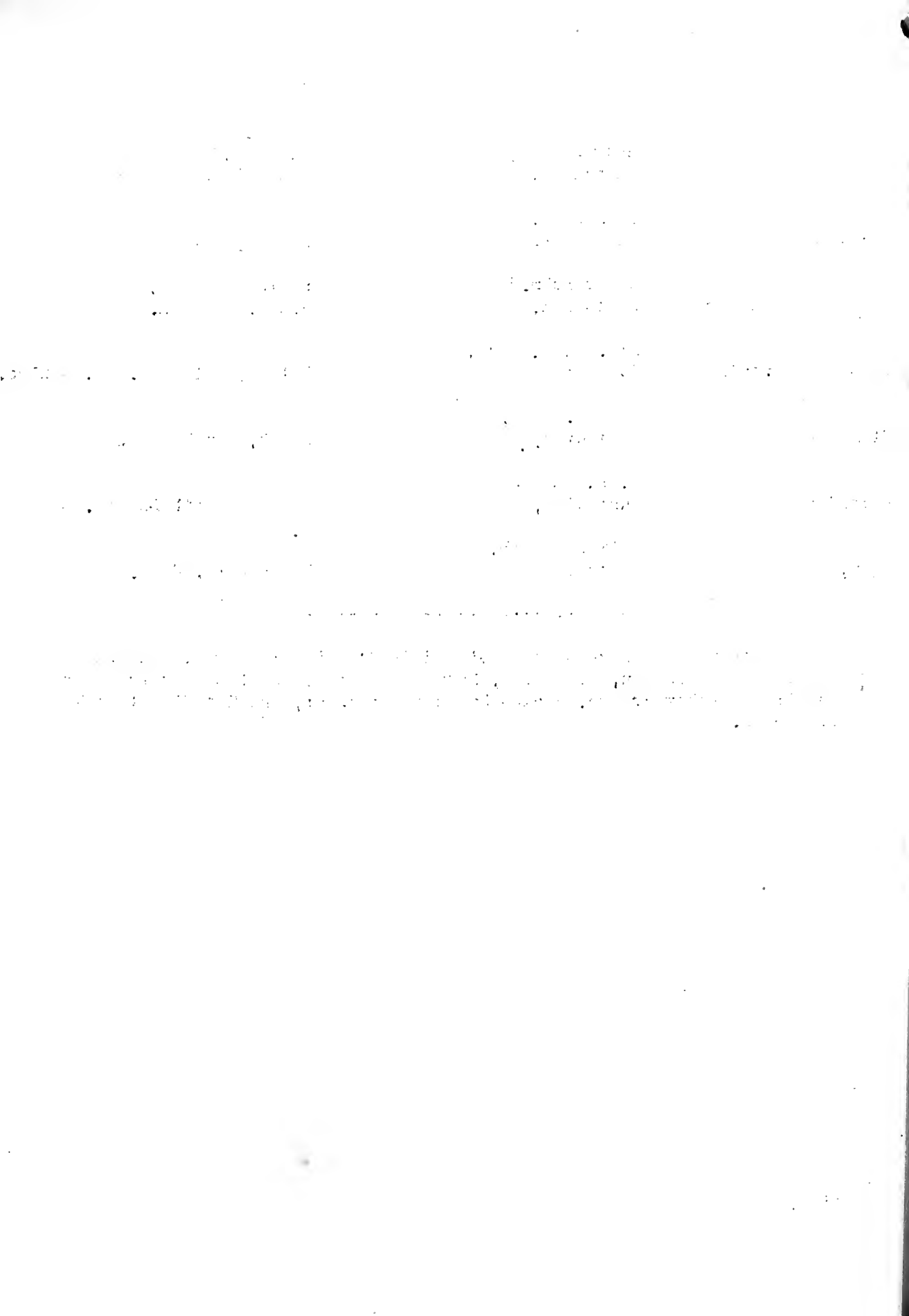
Mount Rainier,	D. L. Reaburn, Superintendent,	Ashford, Washington.
Crater Lake,	Alex Sparrow, Superintendent,	Medford, Oregon.
Wind Cave,	Roy Brazell, Superintendent,	Hot Springs, South Dakota.
Platt,	R. A. Sneed, Superintendent,	Sulphur, Oklahoma.
Sullys Hill,	William A. Light, Acting Superintendent,	Ft. Totten, North Dakota.
Mesa Verde,	Thomas Rickner, Superintendent,	Mancos, Colorado.
Glacier,	Walter W. Payne, Superintendent,	Belton, Montana.
Rocky Mountain,	Er Claude Way, Superintendent,	Estes Park, Colorado.
Hawaii,	(none)	Hawaii.
Lassen Volcanic,	(none)	California.
Mount McKinley,	(none)	Territory of Alaska.
Grand Canyon,	(none)	Arizona.
Lafayette,	George B. Dorr,	Bar Harbor, Maine.

THE NATIONAL MONUMENTS

Sitka,	E. W. Merrill, Custodian,	Sitka, Alaska.
Casa Grande,	Frank Pinkley, Custodian,	Blackwater, Arizona.
Tumacacori,	Frank Pinkley, Custodian,	Blackwater, Arizona.
Nayajo,	John Wetherill, Custodian,	Kayenta, Arizona.
Petrified Forest,	William Nelson, Custodian,	Adamana, Arizona.

Muir Woods,	Andrew Lind, Custodian,	R. F. D. No. 1, Sausalito, California.
Colorado,	John Otto, Custodian,	Fruita, Colorado.
Lewis & Clark Cavern	Oscar Rohn, Custodian,	Pittsmt Mine, Butte, Montana.
Capulin Mountain,	Mrs. W. H. Jack, Custodian,	Folsom, Union Co., N. Mexi
El Morro,	Evon Z. Vogt, Custodian,	Ramah, New Mexico.
Verendrye,	W. F. Thompson, Custodian,	Sanish, North Dakota.
Zion,	Walter Ruesch, Custodian,	Springdale, Utah.

No custodians have been appointed for the Devils Tower, Montezuma Castle, Chaco Canyon, Pinnacles, Natural Bridges, Shoshone Cavern, Gran Quivira, Rainbow Bridge, Papago Saguaro, Dinosaur, and Katmai National Monuments.



DEPARTMENT OF THE INTERIOR

NATIONAL PARK SERVICE NEWS

No. 2

July, 1919

To the Members of the National Park Service:

Many things have conspired to prevent the issue of the National Park Service News for the past two months. In the first place, information requests were received in such unprecedented numbers that not only was it necessary to have two extra clerks detailed to us from the Secretary's Office, but the entire office force had to help out in the rush, letting the other work accumulate for the time being.

Then the Victory Loan came on and entailed a large amount of work for the Service as for every bureau in the Department. The detailed account of the results of the campaign which appears elsewhere in this issue will show how well the labor was repaid and how nobly the members of the Department responded to the appeal.

In May the Department had an exposition for the benefit of Congress and the general public, in which the activities of the various bureaus were shown. It required the entire time of two clerks to arrange and install the National Parks exhibit, which was beautiful and comprehensive. During the period of the exposition they were busy explaining our display to interested audiences at both day and evening sessions.

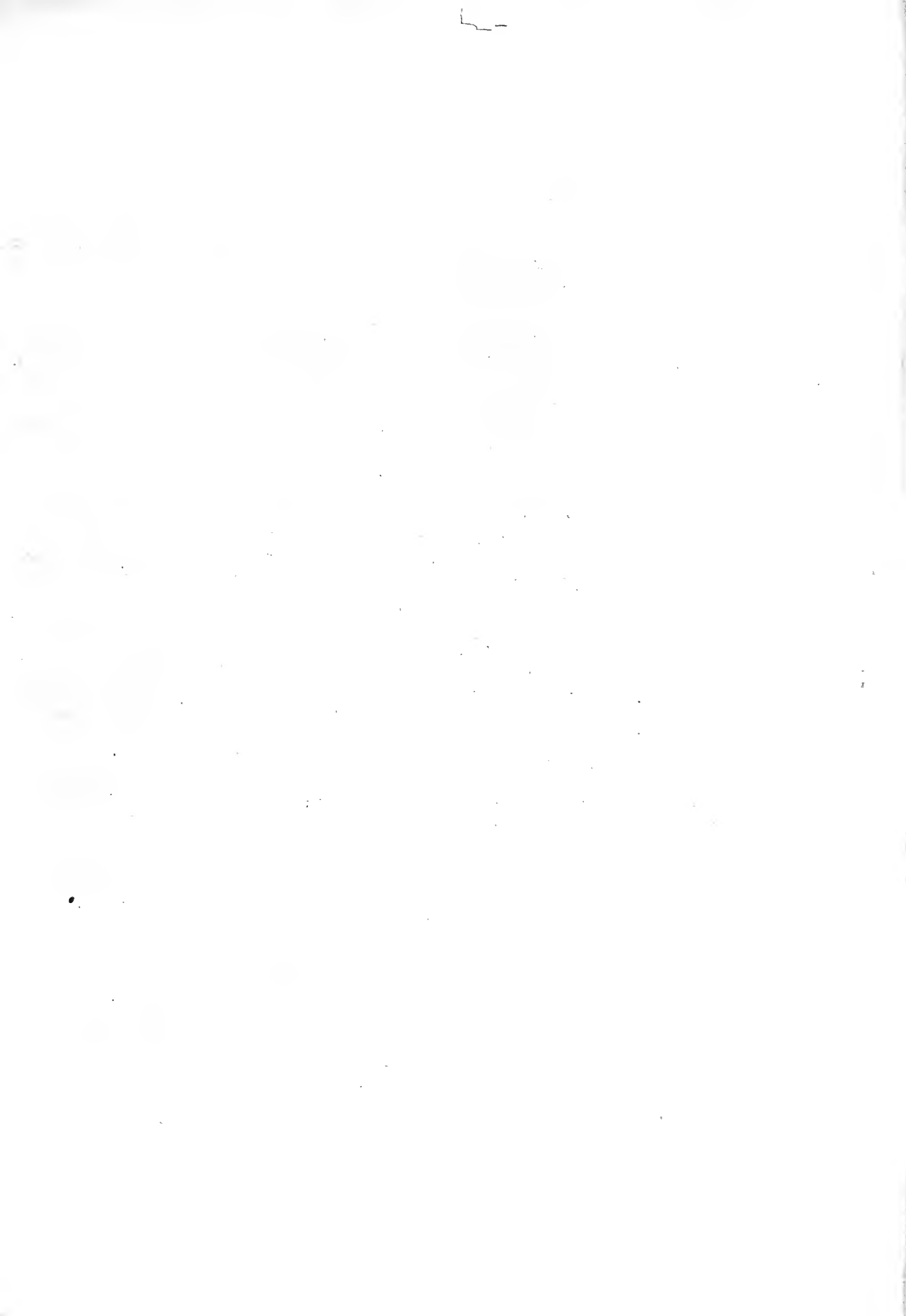
My absence in Hawaii added my work to the already heavy burdens of my assistants; and two members of our small office force were away on sick leave.

Taking it all in all, the Service has not known as busy a time in several years. Hereafter we expect the bulletin to issue monthly.

Very cordially yours,

STEPHEN T. MATHER,

Director.



Every member of the Department may well be proud of the showing made in the Victory Liberty Loan.

Standing of the Bureaus of the Department
at end of the drive:
(Washington force)

Office	No employees	Amount subscribed	Percent of employees subscribing
Pensions	794	\$ 233,950	100
Mines	259	144,150	100
Reclamation	100	17,750	100
Alaskan			
Eng.Com.	7	3,350	100
Parks	16	8,500	100
Land	490	88,700	92
Indian	330	84,700	90
Patents	931	151,900	89
Survey	569	100,450	89
Education	187	24,900	85
Secretary's	367	61,850	60

Washington and Field

Office	Washington	Field	Total
Pensions	\$233,950	\$ 16,100	\$ 250,050
Mines	144,150	242,900	387,050
Reclamation	17,750	151,150	168,900
Alaskan Eng.Com.	3,350	149,000	152,350
Parks	8,500	34,100	42,600
Land	88,700	126,000	214,700
Indian	84,700	230,650	315,350
Patents	151,900	-----	151,900
Survey	100,450	37,400	137,850
Education	24,900	10,600	35,500
Secretary's	61,850	-----	61,850

The Interior Department Exhibit

Beginning May 19th the Department held an exhibit of the activities of its thirteen different Bureaus for the benefit of the new Congress and the public. The entire main corridor of the first floor running from 18th to 19th Streets was used for this purpose. The auditorium presented a daily program of motion pictures. The exhibit continued for two weeks and each Bureau, in the best spirit of rivalry, endeavored to make its section the prize winner.

National Park Service Exhibit.

The National Park Service exhibit, which was shown in the northeastern alcove under a bower of pines and cedars, consisted of enlargements of photographs illustrative of the scenic range of the principal national parks. There was also shown a working model of a Yellowstone geyser in operation; also a large electric map showing the sixty established national park areas, only forty-one of which have yet, however, been placed under the administration of the Department of the Interior, National Park Service.

The national parks pictured were Mount Rainier, Crater Lake, Yosemite, Sequoia and General Grant, Grand Canyon, Glacier, Yellowstone, Rocky Mountain, and Lafayette. There were photographs of national monuments, including ancient Spanish missions, and specimens of the giant cactus of our far southwest.

Examples of the sublime scenery of the proposed Roosevelt National Park were shown in photographic enlargement.

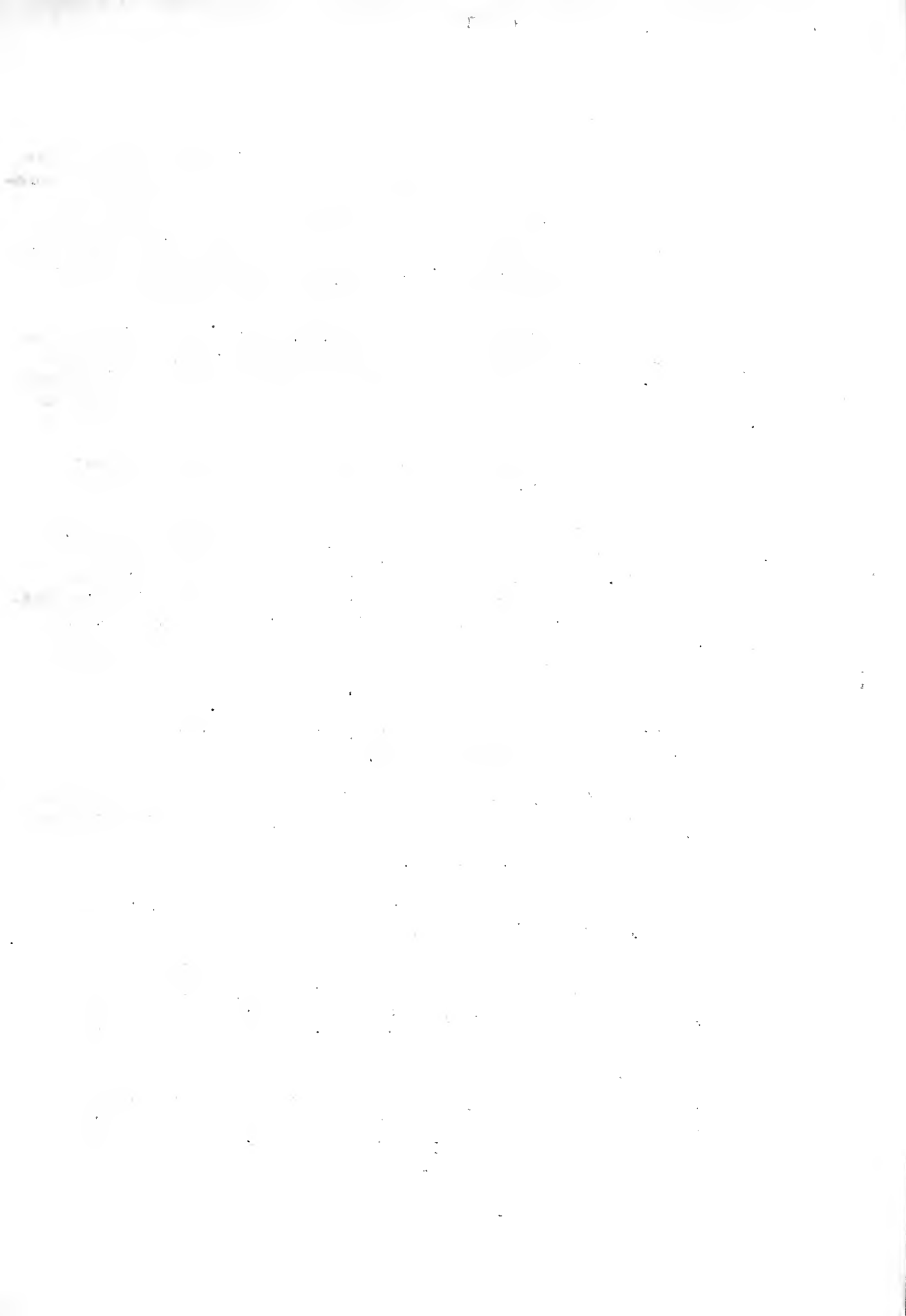
A feature of the exhibition was the winter scenery of Mount Rainier, Yosemite, and Rocky Mountain National Parks, which has recently been made accessible to visitors. Photographs showed winter sports in the Rocky Mountain National Park, which has led the others in this kind of development. But Yosemite is coming fast; a vigorous campaign is now on to raise money for an all-the-year-round automobile road which will enable many thousands to view the incomparable spectacle of Yosemite Valley snow bound. There were pictures of this spectacle in the exhibit.

There were also pictures in this exhibit of the fine hotels and the comfortable hotel-camps provided for tourists.

A park ranger in uniform, typical of the fine body of men who protect the national parks and care for the people who visit them, was present during the Exhibition.

Statement of mail and telegrams received in and dispatched from this Service during April, May and June, 1919:

	RECEIVED	April	May	June
Mail, first class		1743 pieces	2184 pieces	1275 pieces
Mail, second class		16 "	53 "	64 "
Telegrams		135 "	171 "	87 "
	DISPATCHED			
Mail, first class		1623 pieces	3190 pieces	1694 pieces
Mail, second class		412 "	495 "	534 "
Telegrams		61 "	163 "	92 "



The Interior Department Building.

The following extract from the report for the year 1918 of Mr. E. J. Ayers, Chief Clerk of the Department of the Interior, gives some interesting facts relative to the Interior Department Building, dealing with its dimensions, plan of construction, and modern equipment for official business.

The building has a frontage on E and F Streets of 401 feet 10 inches, and on Eighteenth and Nineteenth Streets of 392 feet 2 inches.

It is eight stories in height and its shape is the letter E, with a total area of 685,000 square feet, or about 16 acres.

The building is covered with a promenade tile roof, giving a recreation space of two acres.

The cubage of the building is slightly over 9,000,000 cubic feet.

As a comparison, I might mention that the cubage of the Treasury Building is 6,000,000 and the State, War, and Navy and the new Bureau of Engraving Buildings are approximately 7,000,000 cubic feet.

There are six entrances in addition to a private entrance for the Secretary of the Department; 6 inclosed stairways running from the basement to the top floor; also 12 elevators, 9 passenger, 2 combination passenger and freight, and 1 for freight only.

A building in the west court is used as a library. This is equipped with library shelving, being three tiers in height with glass floors, and has a capacity of 250,000 volumes in addition to cases for maps, offices for librarian, clerks, etc.

In the east court is an auditorium, equipped with 319 leather covered opera chairs, with stage, retiring rooms, operating room for motion pictures, etc.

At the south of the auditorium is the press room, where the large number of maps prepared by the Survey are printed. On the top of this wing is the largest photographic laboratory in the United States, complete with dark rooms, etc.

On the E Street side of the building special rooms are provided for the chemical analytical, physical, petroleum, and mineralogical laboratories of the several bureaus occupying the building.

The appropriation for the building, including approaches, was \$2,596,000

A few figures:

For daytime lighting of this building there are a few more than 5,000 windows.

The building contains 52 toilet rooms, 830 lavatories, each being supplied with hot and cold water.

Ninety-six drinking water fountains in the corridors in addition to 38 lavatory fountains in the principal offices.

Eighteen thousand six hundred tons of structural terra cotta.

Six thousand two hundred tons of structural steel.

Five million four hundred thousand common brick.

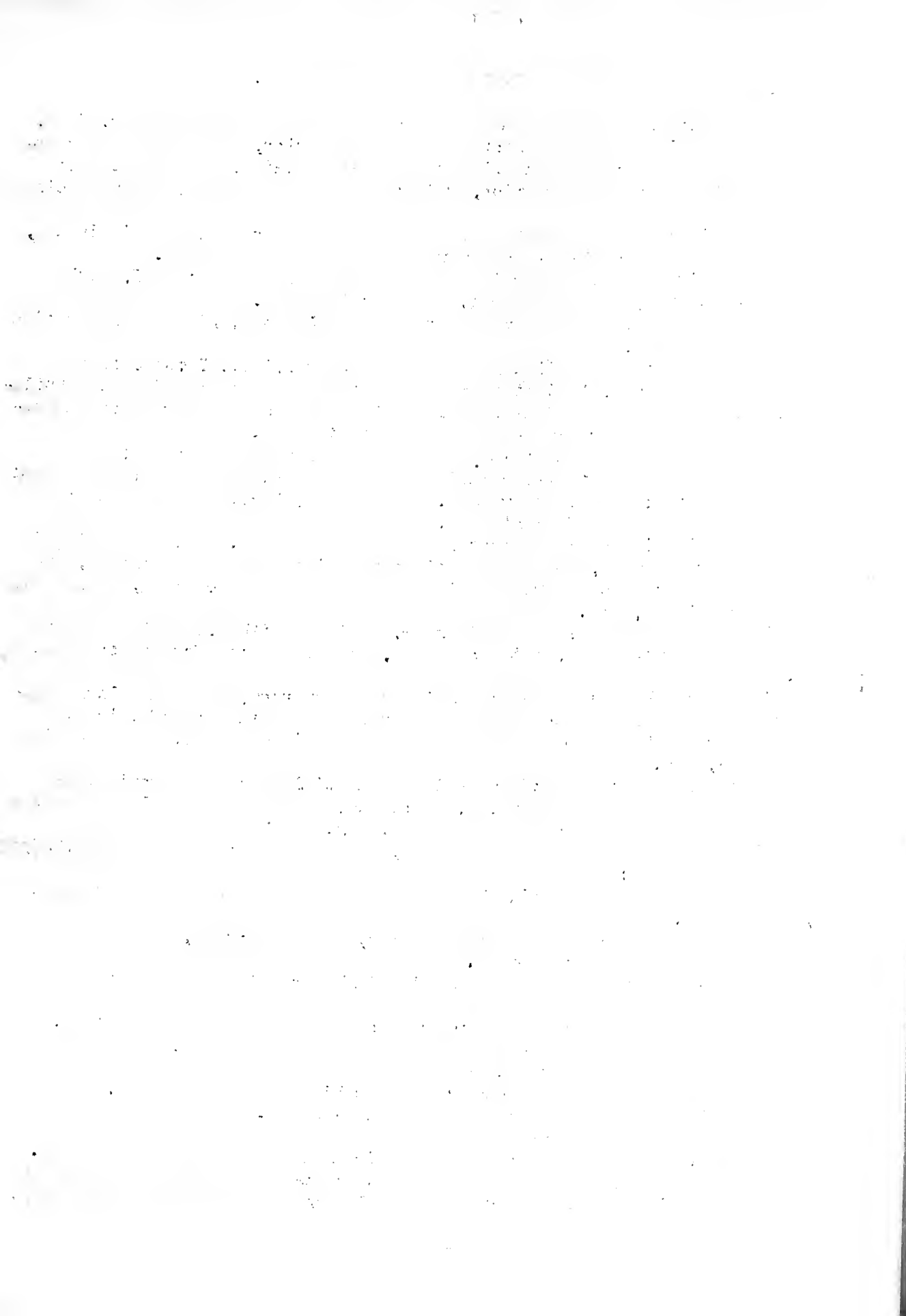
One hundred and eighty thousand cubic feet of limestone.

Twenty-five miles of water and soil pipes.

Ten miles of heating pipe

The total wire in the building is a trifle more than 100 miles.

The terrazzo floors in the corridors would make a sidewalk 6 feet wide on both sides of the Avenue from the Treasury Building to the Capitol.



There are 28 miles of slate base in the offices.

The lighting fixtures total 3,625.

Heating apparatus: The building heated by direct radiation. The boiler plant consists of six boilers, equipped with downdraft furnaces, designed for the consumption of low-grade bituminous fuel with smokeless combustion, with a boiler capacity of 900 horsepower. The entire system of piping is designed for vacuum return circulation.

The electricity for light and power will eventually be furnished by the central light, heat and power plant. At present it is being supplied by the Capitol power plant.

A conversion plant of 1,000-kilowatt capacity is provided for converting high-tension alternating current to direct current at a voltage of 110-230 volts. Rotary converters of the booster type are installed in duplicate units.

A complete system of signaling is provided for fire and policing purposes. A non-interfering fire-alarm system has 53 stations and a watchman's time-recording system and intercommunicating telephone system are combined with the fire-alarm system. By means of this it is possible for the officer in charge of the watch to keep in touch with his entire force in any part of the building. A unique silent calling device is located near every station. All employees on watch duty can be instantly communicated with, either individually or collectively.

An automatic electric clock system is provided. There are now 116 clocks connected, located as requested. Provision, however, is made for an installation of 600 secondary clocks.

March 3rd last saw a novel innovation in the way of a lunch room and dining hall for the officials and employees of the Department, which was that day opened for general service, in a structure devised and erected for the special purpose on the roof of the building, across the F Street front. Practically all glass and iron, the panoramic view of the city that spreads out on all sides is a delight to the eye, and a joy to the soul, which the visitor will not soon forget.

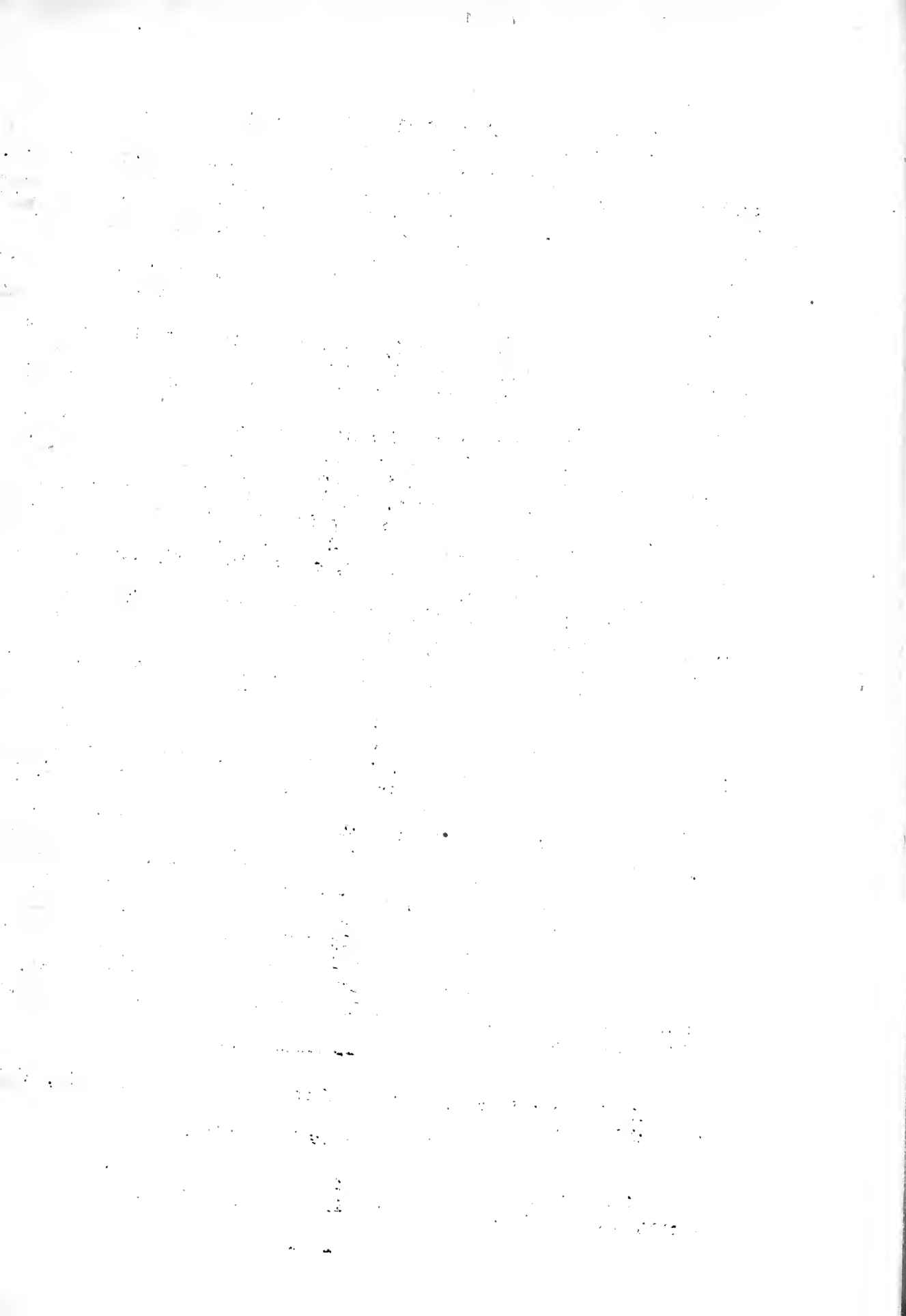
The lunchroom, however, is not entirely an esthetic proposition, but contemplates something more substantial. The floor space totals 9,000 square feet, which is occupied by three dining rooms; one for officials, which seats about 50 persons, the main dining room seating 500 persons, while a smaller dining room is set apart for employees. In the main dining room is a counter of battleship style; on one side food is served a la cafeteria, and on the other there is table-d'hote service.

This provision for the comfort and convenience of our people in their daily service puts the finishing touch upon this great business home of the Interior Department.

The Director's report to the Secretary rendered June 14, 1919, contains the following:

Hawaii Park Inspection.

"I was only present at the office for the last several days of the month, the forepart being spent in connection with a trip to Hawaii where



I made an inspection of the Hawaii National Park, followed by a brief visit to Yosemite National Park and Denver on my return home. During my absence, which began with March 30th, Assistant Director Albright was acting director of the bureau.

"My trip to Hawaii was in company with Landscape Engineer C. P. Punchard, Jr., and while there we made quite an exhaustive study of the area which it is proposed to be included in the park. I visited the active volcano of Kilauea as well as the extinct volcano Haleakala on the Island of Maui, where I spent one night at an altitude of 10,000 feet. While at Kilauea I gave some thought to the suitability of that location for the eventual establishment of an administrative headquarters for the park.

"With the aid of Governor McCarthy, who extended me every courtesy and was of invaluable help to me during my stay on the islands, and through the kindness of Mr. L. A. Thurston and Land Commissioner Bailey of the Territory, especially, I was able to make very satisfactory progress in arranging for the exchange of private lands within the park area necessary to be included in the park for Territorial lands.

"The Bishop and Baldwin estates and other private interests concerned showed a distinct desire to cooperate with the Department and when I left the islands it was with the understanding that Governor McCarthy would advance negotiations with these parties for the acquisition of the necessary lands as far as he consistently could so no unnecessary delay would ensue after formal authority for the exchange had been given by Congress.

"As a result of my visit I have every reason to believe that by fall the proposition will have advanced to such a point as to make it proper for you to submit an estimate for the protection, maintenance and improvement of this remarkable and unique reservation."

The Roosevelt National Highway.
Reprinted from a recent newspaper editorial.

The Midland Trail, which for years has been known as one of the main Transcontinental Highways, extends from Washington, the National Capital, thru Louisville, Kansas City, Denver, Grand Junction, Salt Lake City, Ely, Tonopah and Goldfield, to Big Pine in middle eastern California, at which place it forms two branch roads, one to San Francisco by either Yosemite National Park or Lake Tahoe, the other to Los Angeles by way of Mojave.

Recently R. R. Elmore, M. D., Vice-President of the Louisville Automobile Club, the widely known organization of Kentucky, suggested that the name of the Midland Trail be changed to that of the Roosevelt Trail. The matter was taken up with various individuals and organizations and the name of Roosevelt National Highway has been definitely decided on. The change is now undergoing general ratification.

There is a peculiar appropriateness in the new name, because it is the only transcontinental highway that leads from the National Capital direct to the already famous Roosevelt National Park, now in process of extension. From

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Washington to San Francisco by the Roosevelt National Highway, the distance is 2,930 miles. By railroad it is 3,110 miles. This great Highway extends thru twelve States, nine State capitals, one hundred and twenty-five counties and ninety-one countyseats.

It is already a favorite cross continent motor touring route and beyond question will gain great additional prestige from the wonderful developments which the future holds in store for the Roosevelt National Park.

Park to Park Tours.

Several Park to Park tours have been planned for this summer. One under the auspices of the Massachusetts Forestry Association began June 26 at Boston and is to end August 22. It is under the personal management of C. L. Babcock as tour director. The itinerary includes Rocky Mountain, Yellowstone, Glacier, Mt. Rainier, Crater Lake, Yosemite and Grand Canyon.

The tour of the Travel Club of America starts from New York City July 16, and the return there is scheduled for September 8. It contemplates a visit to the same national parks included in the tour of the Massachusetts Forestry Association.

A tour under the management of the Brooklyn Daily Eagle will begin about July 20. The party, a hundred and thirty strong, expects to go to Denver by special car. From there they will go by automobile through Denver's Mountain Parks. They will also go by automobile to Rocky Mountain National Park. Most of the party plan to go by automobile from Estes Park, Colorado, to Cheyenne, Wyoming, and then to Fort Russell for Frontier Day Celebration. Yellowstone and Glacier are also included in their itinerary. Some of them are to go all the way by automobile, while others make the longer distances by train. Mt. Rainer, also, may be visited.

Motor Travel

Mr. A. L. Westgard, of the American Automobile Touring Bureau, reports an unprecedented call for information relative to routes leading to Yellowstone and Yosemite National Parks and requests an additional supply of maps of all the national parks.

He predicts that transcontinental traffic, largely stimulated by desire to see the national parks, will reach a volume equal to the combined volume of five years heretofore.

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Motor Travel from Park to Park.

Unquestionably a new epoch in national park travel was begun when Secretary Lane announced on May 16th the plan for stimulating motor travel to Rocky Mountain, Yellowstone and Glacier National Parks by the inauguration of a motor line between these and intermediate points and operated under the management of Messrs. H. W. Child and Roe Emery. Already the projectors of this enterprise have received more requests for accommodations than they can take care of, and it is confidently believed this tour will shortly be a feature of park travel, and its scope enlarged as road and other conditions will permit.

Travel to the West by private automobile increased at a tremendous rate prior to the war, and the continued improvement of road conditions on the main highways, especially between the national parks, will result in bringing the private automobile traffic to phenomenal proportions.

Secretary Lane feels that the private motor car is going to be quite as important a factor in American tourist travel as the railroad facilities. He, however, is encouraging the use of every means to stimulate outdoor living and the enjoyment of our great natural resources for recreation, health, and observation, in order that the habit of using these resources may be firmly ingrained in the American people.

 Travel Statement for 1919, to include June 30th
 Yellowstone National Park.

To include May 31.

Miscellaneous travel	390				
<u>June Travel</u>	E N T R A N C E				
	North	West	South	East	Total
With Yellowstone Park Transportation Company	610	1,764		141	2,515
Miscellaneous Travel (mostly private automobiles)	1,537	1,637	144	747	4,065
TOTALS	2,147	3,401	144	888	6,580
SEASON TOTAL					6,970

Private Automobiles Licensed:

Northern entrance	405
Western entrance	434
Southern entrance	38
Eastern entrance	215
	1,092

REPORT OF JUNE, 1918, travel, for comparison:

Entered with Yellowstone Park Transportation Company	242
Miscellaneous, mostly private automobile travel	983
Total	1,225

264 private automobiles entered in June, 1918.

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JUNE TRAVEL IN THE YOSEMITE.

During the first 26 days of June 2,414 private automobiles entered the park, carrying 8,814 people. This compares with a total of 1,446 cars, carrying 4,916 people for the same period in 1918. Total travel by all means during this period in 1919 amounted to 12,623 people as compared to approximately 6,000 for last year -- in other words an increase of more than 100% in total travel.

From a recent press memorandum
(Yellowstone N.P.)

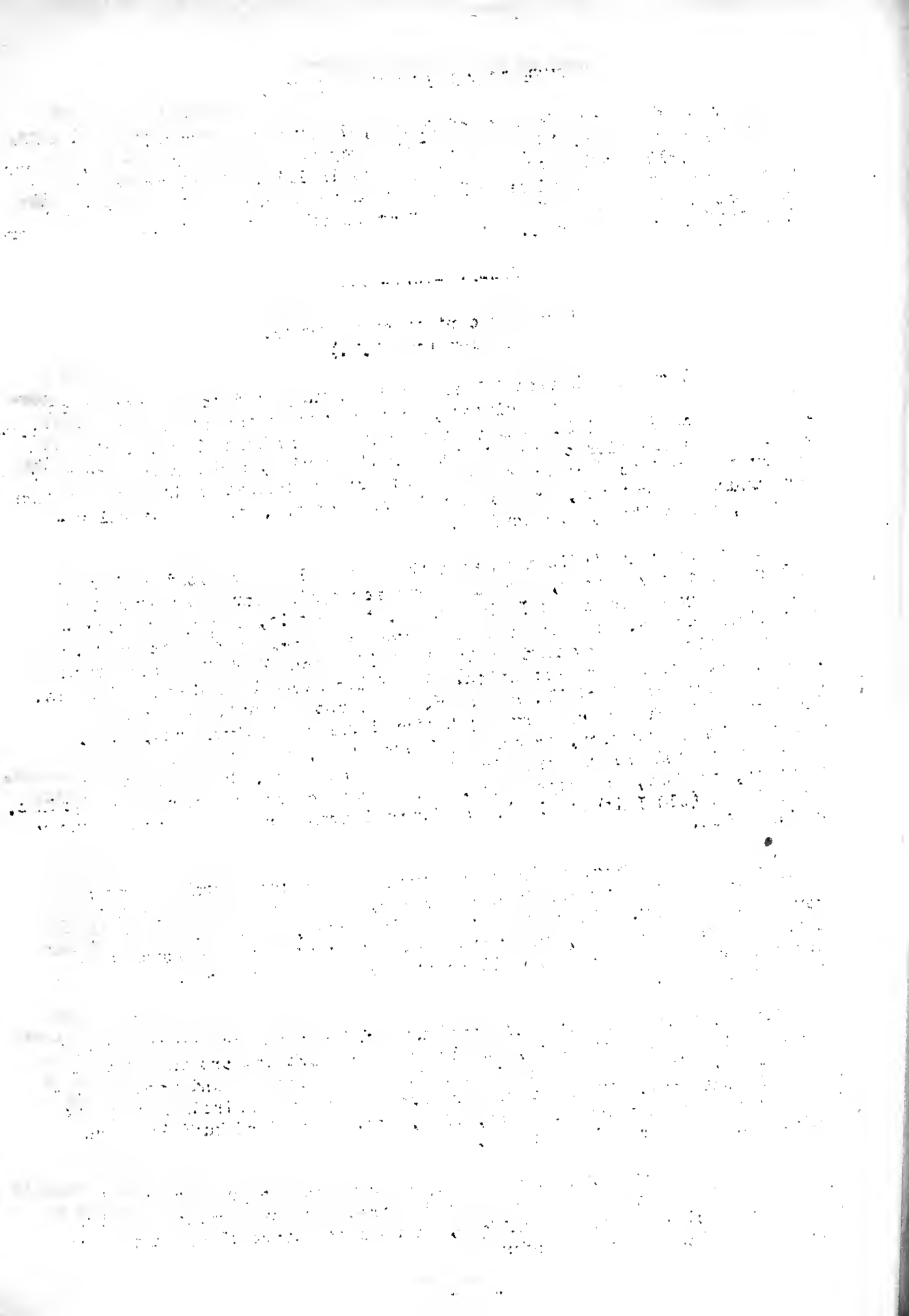
The Yellowstone National Park has been subjected to a grooming on a scale unprecedented in its history, preparatory to the opening of the tourist season on June 20th. All of this work is now being handled directly under the supervision of the National Park Service, under a comprehensive policy designed to protect the interests of the nation in the preservation for future generations, and use by the present one, of the natural resources, curiosities, and wonders.

There is every indication that the park will be visited by larger numbers than ever before, and all plans for caring for heavy travel are being made by the National Park Service, the hotels, camps, and transportation company. The comfortable seven and ten-passenger motor cars have been thoroughly overhauled by the Yellowstone Park Transportation Company and are in good condition. The Yellowstone Park Camping Company, under the management of Mr. Howard H. Hays, who recently resigned as manager of the Bureau of Service; National Parks and Monuments, U. S. Railroad Administration, to come to Yellowstone, is making extensive improvements and enlargements in all permanent camps, to add to their capacity, comfort, and appearance. The large hotels at Mammoth Hot Springs, Upper Basin (Old Faithful Inn), and Grand Canyon were ready for occupancy on June 20th.

The new road through Gardiner Canyon between the northern entrance and Mammoth Hot Springs has been completed, and is one of the prettiest drives in the park. Following a very mild winter, spring opened nearly a month earlier than usual, the result being that most of the roads in the park were cleared of snow and all points accessible for motor cars before the opening date.

Much work is being done cleaning up and improving the special camps assigned to private motorists, to give them as much comfort and convenience as possible. The water supply is carefully safeguarded, and wood is provided without cost. Night guards are provided at the principal camps to insure safety from thieves, bears, fire, etc. A herd of buffalo is on exhibition at Mammoth Hot Springs.

Due to the very warm, dry weather, precautions to prevent forest fires have been found necessary. Road patrols are made during the tourist season by special rangers in uniform, mounted on motorcycles, instead of using saddle horses as heretofore.



The United States Fish Hatchery on Yellowstone Lake was put in operation nearly a month earlier than normal. The prospects are good for a long season of excellent fly-fishing.

More than a thousand new metal signs for roads and names of interesting features have been purchased, and are being placed for the information and guidance of visitors.

Park County, Montana, is making extensive and much needed improvements to the Livingston-Gardiner road, which is the northern approach to the park, and this work is being supplemented by labor and funds contributed by citizens of the county.

Everything possible is being done to provide the maximum of comfort and pleasure to travelers, and a banner year is expected.

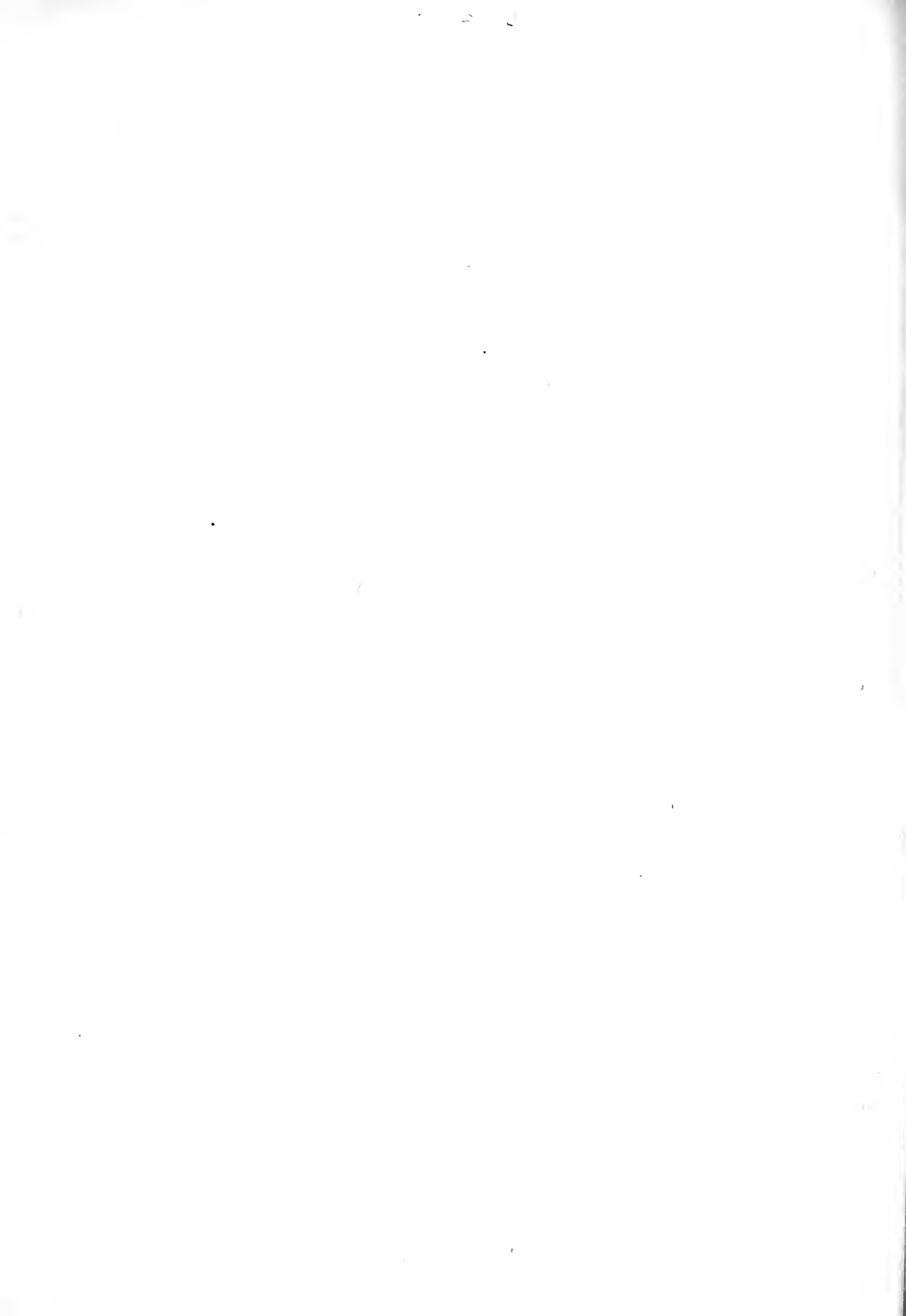
THE FIRST AEROPLANE IN YOSEMITE
(Contributed by Superintendent W. B. Lewis)

I believe the first serious thought of an aeroplane flight into Yosemite originated in late August 1918. During a visit of the Director to California when it was suggested by Mr. Boston Thompson, who accompanied the Director, that it be featured in connection with the ceremonies to be held on September 7th of that year in dedication of the Yosemite Power Plant.

Authorization for an official air service flight was immediately requested from Colonel E. Lester Jones, then Director of the American Air Service, who instructed the Commanding Officer at Mather Field, near Sacramento, California, to investigate landing conditions and report on the feasibility of the proposed flight. For some reason, although no investigation was made, an adverse report was made and the proposition was abandoned.

The next indication of interest in the matter was displayed by Mr. A. C. Pillsbury, photographic concessionaire in Yosemite, when in March 1919 he solicited the aid of the Service in securing a plane from the Air Service with which to fly into the Valley, with himself as photographer, with the idea of securing scenic motion pictures. The Director instructed the writer to negotiate with the Air Service authorities and after interesting a number of people in the proposition, principally on the basis of the publicity value such a flight would have on the Yosemite Highway Campaign, Lieut. Colonel H. L. Watson, at present in Command of Mather Field, was induced to visit the Valley May 13th and 14th. He was accompanied by Lieut. J. S. Krull, Flight Commander, and together they made a careful study of the whole situation, with the result that Lieut. Krull volunteered to make the flight but would not consent to carry a passenger as the dangers that were believed to lurk in the supposedly unusual air currents in and around the rim of the Valley were not to be trifled with and additional weight was believed to be distinctly undesirable.

The landing field selected was the Liedig Meadow where a smooth landing space 300 yards in length existed. The field lies lengthwise of



valley and boxed in at both ends by bends in the Merced River so it was not possible to extend the length of the actual landing space. Up the Valley, however, by removing a number of willows and cottonwoods, it was possible to extend the clear area thereby giving an additional clear space of about 250 yards in which to clear the main forests in descending to and arising from the actual landing field. This was done and on the morning of May 27th Lieut. Krull left Merced at 5.57 a.m. At 6.54 a.m. he hove in sight over Sentinel Rock at an altitude of 7,000 feet above the floor of the Valley. Flying over Glacier Point and up towards Half Dome, he began a series of turns descending in the vicinity of Washington Column to an altitude of about 500 feet from the ground when he made a straight shoot for the field where he made a perfect landing at 7.02 a.m. on almost exactly the spot he had selected nearly two weeks before. The first aeroplane to make the attempt had landed successfully in Yosemite Valley and it is needless to say that the writer breathed a sigh of relief for it had quite generally been conceded that the feat was impossible and any effort to negotiate it must end only in disaster.

As a matter of fact, the dangerous air currents and "bumps" and "pockets" failed to show up and Lieut. Krull reported his having encountered only the most stable conditions.

Likewise the belief that, on account of the high elevation of the Valley Floor (4,000 ft.), it would be impossible or at least very difficult to rise and get away, was proven to be without foundation when on the following morning Lieut. Krull rose from the field as easily as he had landed and sailed away out of the Valley after having flown entirely around the Valley rim and over Half Dome, Clouds Rest, and Mt. Hoffman.

Not quite eleven years ago, after long negotiations on the feasibility of auto travel into the park, the first automobile, under the strictest of regulations, came into the Valley. Although the trip was successful, it appeared the time was not yet ripe to mix automobiles and parks, with the result that another five years elapsed before the park was opened to this mode of travel. During the month just past, over 1,100 private automobiles visited the park carrying more than 4,000 people. What will be the effect of six years in air travel? May we expect a similar increase in air travel between now and 1925 to that experienced in auto travel between 1913 and 1919? The progress that has been made in the development of the aeroplane during the past five years and the possibilities that experts predict for future development undoubtedly justify the prediction such will happen.

There is no doubt in my mind but that the aeroplane will not be an uncommon sight in Yosemite from now on and who knows but that the Park to Park Air Line will be actually in operation long before the Park to Park Highway system is complete.

Airplanes and National Forests.

The Weekly News Letter of the U. S. Department of Agriculture of April 16th contains the following article:

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Army airplanes and captive balloons will cover portions of the national forests of California, Arizona, New Mexico, and other States this summer, to aid in detecting and suppressing forest fires. In compliance with an order from Secretary Baker directing the Air Service to cooperate with the Forest Service of the United States Department of Agriculture in this work, conferences are under way to determine where and to what extent the air scouts will supplement the forest rangers.

That there is a distinct and important place for aircraft in fire protection of timberlands is regarded by the Forestry officials as beyond doubt, but experimental trial of methods and possibilities will have to be the first step. This is now being planned for the coming fire season. Army airdromes and bases will be utilized for the experiments. Some of the bases near enough to national forests to be used advantageously are the flying fields at San Diego, Riverside, and Arcadia in southern California. Other points in the West and in the East are under consideration, including one near the White Mountains in New Hampshire.

One of the interesting possibilities to be tested is bombing fires to put them out. It is believed that bombs charged with suitable chemicals can be used with good results. Another plan to be tested is transporting fire fighters by dirigibles from which ladders can be lowered to the ground.

The chief use of the aircraft this summer, however, will be for fire detection. At present the Forest Service relies for this partly on patrol, usually by men on horses, motorcycles, or railroad speeders, and partly on watchers stationed at lookout points. Aircraft have many points of obvious superiority for both classes of detection work.

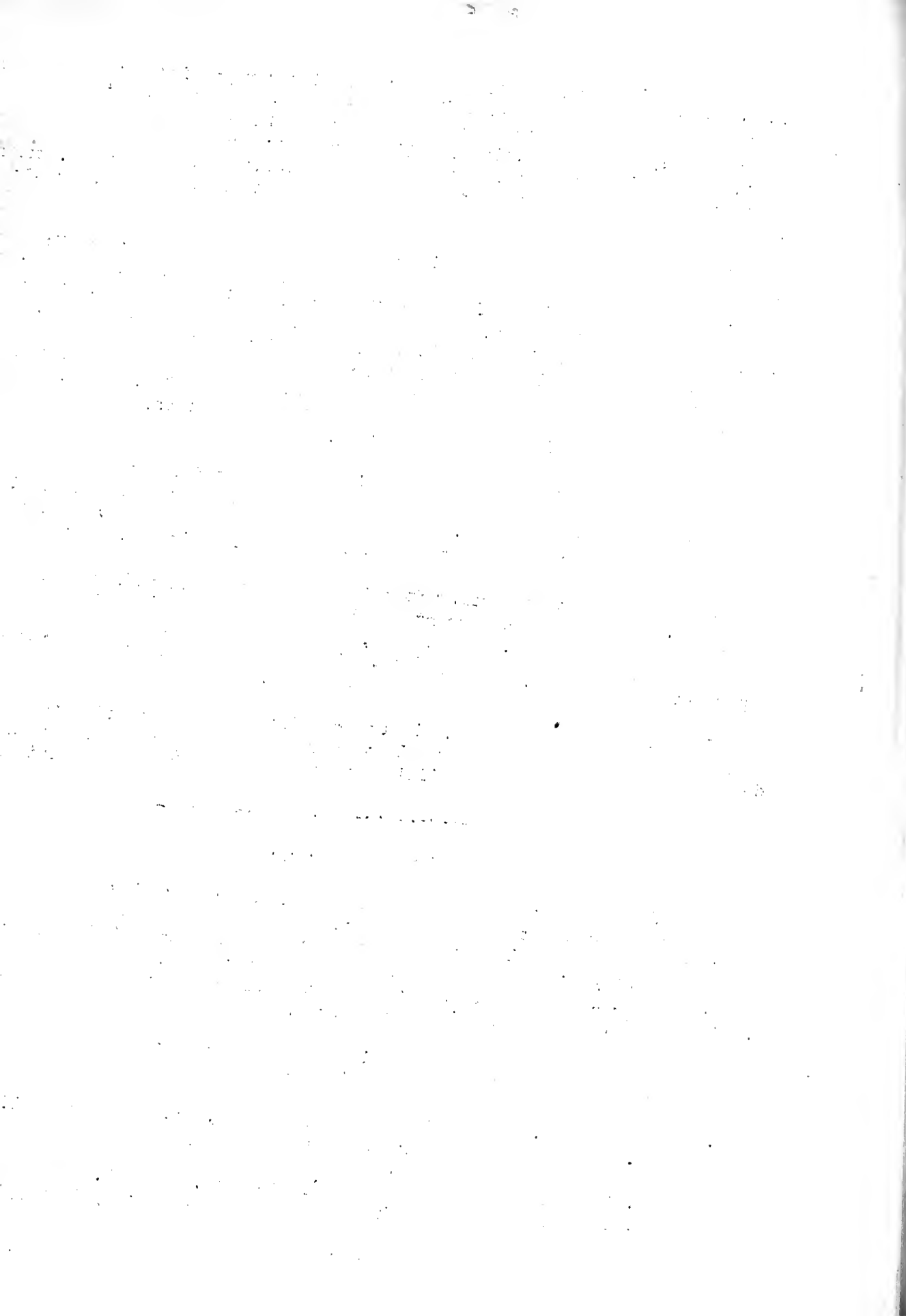
From the Army standpoint, the use of aircraft in protecting the national forests affords a valuable opportunity for training fliers and developing further the possibilities of aircraft and the art of flying.

Yosemite Lectures.

The University of California through its University Extension Division is offering a course of scientific lectures in Yosemite during June and July. They are known as the LeConte Memorial Lectures in honor of the name of Joseph LeConte, the famous naturalist and geologist. These lectures are receiving unusual attention, and covering the wide range of scientific subjects they do, are drawing large audiences.

The entire program, most of which will be given at the LeConte Memorial Lodge in Yosemite Valley, follows:

1. Professor W. L. Jepson, Department of Botany, University of California.
 1. The Origin and Distribution of Buttercups in Yosemite, Tuesday, June 24.
 2. The Biology of the Chaparral, Thursday, June 26.
 3. The Ancestry of the Yosemite Pines and Sequoias, Friday, June 27.



II. Professor Frederick William Babb, Lecturer, Literary Executor of John Muir.

1. John Muir, Nature and Yosemite, Tuesday, July 1.
2. Muir's View of the Valley's Origin, Thursday, July 3.
3. Muir's Services to the Nation, Friday, July 4.

III. Dr. F. Emile Matthes, Geologist, U. S. Geological Survey, Washington, D. C.

1. Origin of Yosemite Valley, as Indicated in the History of its Waterfalls, Tuesday, July 8.
2. The Highest Ice Flood in the Yosemite Valley, (to be delivered at Glacier Point) Wednesday, July 9.
3. The Origin of the Granite Domes of Yosemite, Saturday, July 12.

IV. Professor A. L. Kroeber, Department of Anthropology, University of California.

1. Tribes of the Sierra, Friday, July 11.
2. Indians of Yosemite, Saturday, July 12.
3. Folk-lore of Yosemite, Sunday, July 13.

Electric Development in Yosemite
(Contributed by J. W. Emmert, Chief Electrician, Yosemite, California).

With the completion of the 2000 kilowatt hydro-electric plant in the Yosemite Valley last year, we have a plant capable of taking care of the ordinary electrical needs of a city of thirty thousand. Electricity is used for heating and cooking, as well as lighting, in Yosemite. All of the camps, buildings, and main thoroughfares are well illuminated.

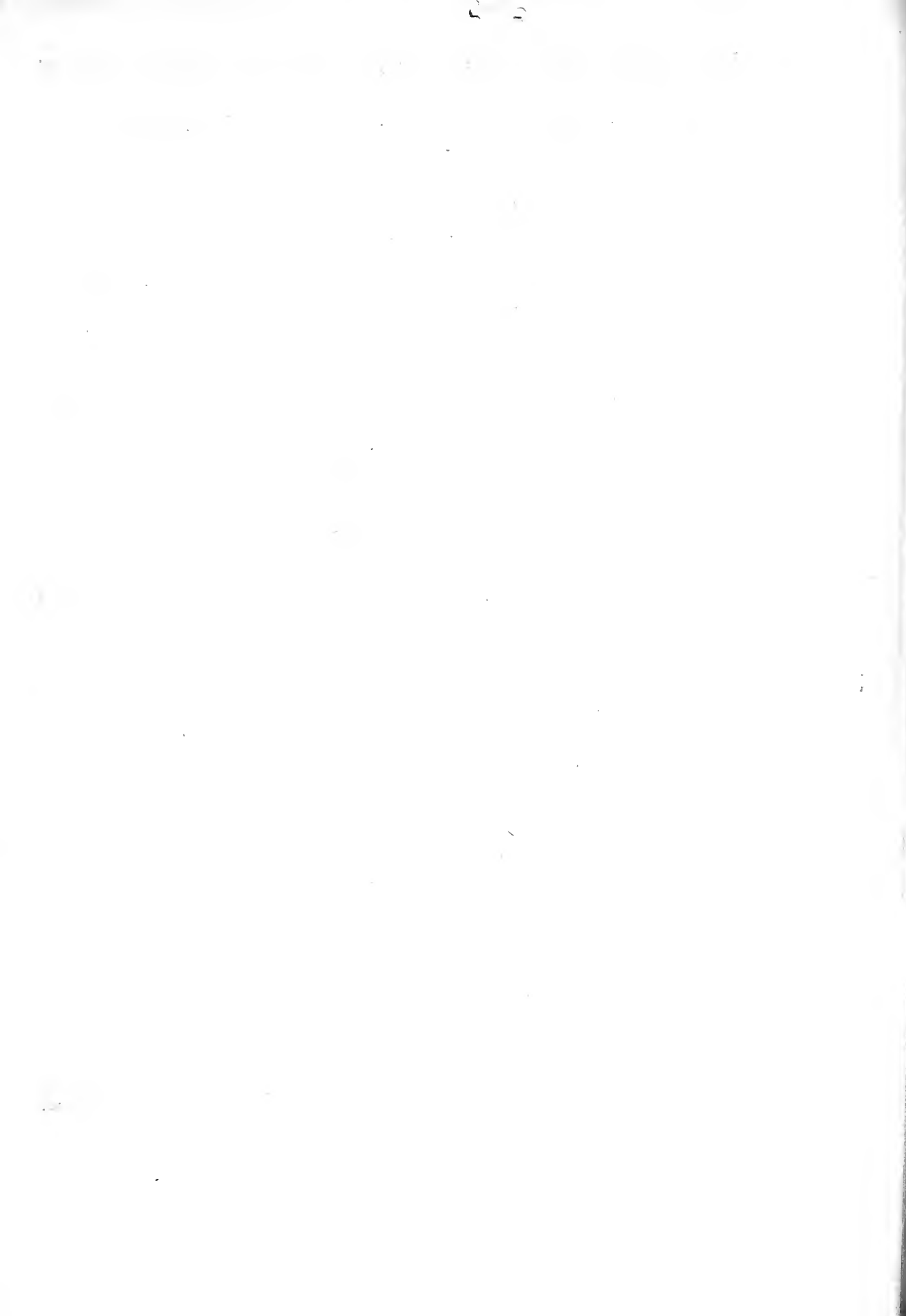
The school house, telephone exchange, electric plant, and all of the cottages at Camp Curry - about twenty-five - are heated exclusively by electricity. There are a number of other buildings having electrical heating as an auxiliary. Electric hot water and air heating is now being installed in the rooms of the Sentinel Hotel. Electrically heated water is supplied in the administration building and in the employees' club.

Camp Curry utilizes electricity wholly for baking and largely for cooking. During the busy season, last year, Camp Curry prepared over thirty-six hundred meals a day.

Personal Notes.

The Director has planned an official visit to some of the national parks and will be absent from Washington until the latter part of August on business connected with the Service.

Some of the members of his party will be:



Governor William D. Stephens of California
H. H. Saylor, Editor of Country Life in America
Dr. G. Lenox Curtis, of New York
Harry Chandler, President and General Manager of the Los Angeles Times
Gilbert Grosvenor, Editor of the National Geographic Magazine.
Charles Moore, Chairman of the National Commission of Fine Arts
Frederic T. Boles, of Chicago
E. O. McCormick, Vice-President of the Southern Pacific Company
Chester Rowell, Editor of the Fresno Republican
Allen Chamberlain, of the Boston Transcript

George Horace Lorimer, Editor of the Saturday Evening Post, who is making the trip from Philadelphia to Grand Canyon by automobile, expects to join Mr. Mather at Hammonds, just before they reach the Tioga Road on the west side of the Sierra Nevada Mountains.

Henry S. Graves, Chief Forester, is expected to join the party at Fresno for the trip down to Roosevelt Park.

The Director's itinerary includes Lake Tahoe; Yosemite National Park, where two nights will be spent with the Sierra Club at their camp in Tuolumne Meadows and a visit made to Waterwheel Falls and other scenic points; Fresno, and a dinner with representatives of the Fresno Chamber of Commerce; General Grant National Park, with a grand camp-fire either there or at Horse Corral Meadows; Roosevelt National Park; San Francisco; the proposed Redwoods National Park, in Humboldt County, California; Crater Lake National Park; Mount Rainer National Park; and Yellowstone.

Assistant Director Albright, recently appointed by Secretary Lane Superintendent of Yellowstone National Park, leaves in a few days to assume his new duties. He will, of course, continue to take an active part in carrying out the broader policies of the Service.

Mr. Arno B. Cammerer, for many years Assistant Secretary of the National Commission of Fine Arts, will succeed Mr. Albright as Assistant Director of the National Park Service. Mr. Cammerer has long been interested in national park affairs and comes to the Service with splendid enthusiasm.

Mr. Robert Sterling Yard, who has been so long connected with the Department as editor on national park matters, has resigned to become executive secretary of the National Parks Association, which was organized at the Cosmos Club, Washington, D. C., on May 29, 1919.

It is expected that the relations between the National Parks Association and the Service will be very intimate and cordial. Mr. Yard is splendidly equipped for his new duties by his deep interest in all national park affairs and his wide knowledge of the subject.

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Major R. W. Toll has been appointed Superintendent of Mount Rainier National Park, succeeding Mr. D. L. Reaburn, who enters the service of the Western Willite Road Construction Company, with headquarters at 463 I. W. Hillman Building, Los Angeles, California. Mr. Reaburn's administration of Mount Rainier was a very able one and his separation from the Service is deeply regretted.

Major Toll, who is an engineer of long experience, has lived for many years in Colorado. He made the Hawaiian trip in the Director's party, and assumed his new duties as Superintendent immediately upon his return from the islands. He is a mountaineer of experience and has shown deep interest in national parks and their development. His recently published "Mountain-eering in the Rocky Mountain National Park," which becomes one of the Service's pay publications, is a valuable contribution to national park literature. It is fortunate that his services could be secured for the benefit of Mount Rainier National Park.

Superintendent Sneed of Platt National Park has submitted his resignation, which became effective at the close of June 30, 1919. He is leaving this Service to accept the office of Commissioner of Confederate Pensions for the State of Oklahoma. The Service is very sorry to lose Colonel Sneed.

The Superintendency of Wind Cave National Park, left vacant by the resignation of Mr. T. W. Brazell, effective at the close of March 15, was filled by the appointment of his son, Mr. Roy Brazell, who entered on duty March 16, 1919. Mr. Roy Brazell's previous service in the park dates back to the season of 1915 when he was appointed a temporary ranger, serving in that capacity also during the seasons of 1916 and 1918. He left the Service at the close of May 10, 1918, to enlist in the United States Army.

Miss Edna M. Peltz, formerly of Mr. Yard's office in the Service, has just returned to duty after a visit to Rocky Mountain and Yellowstone National Parks.

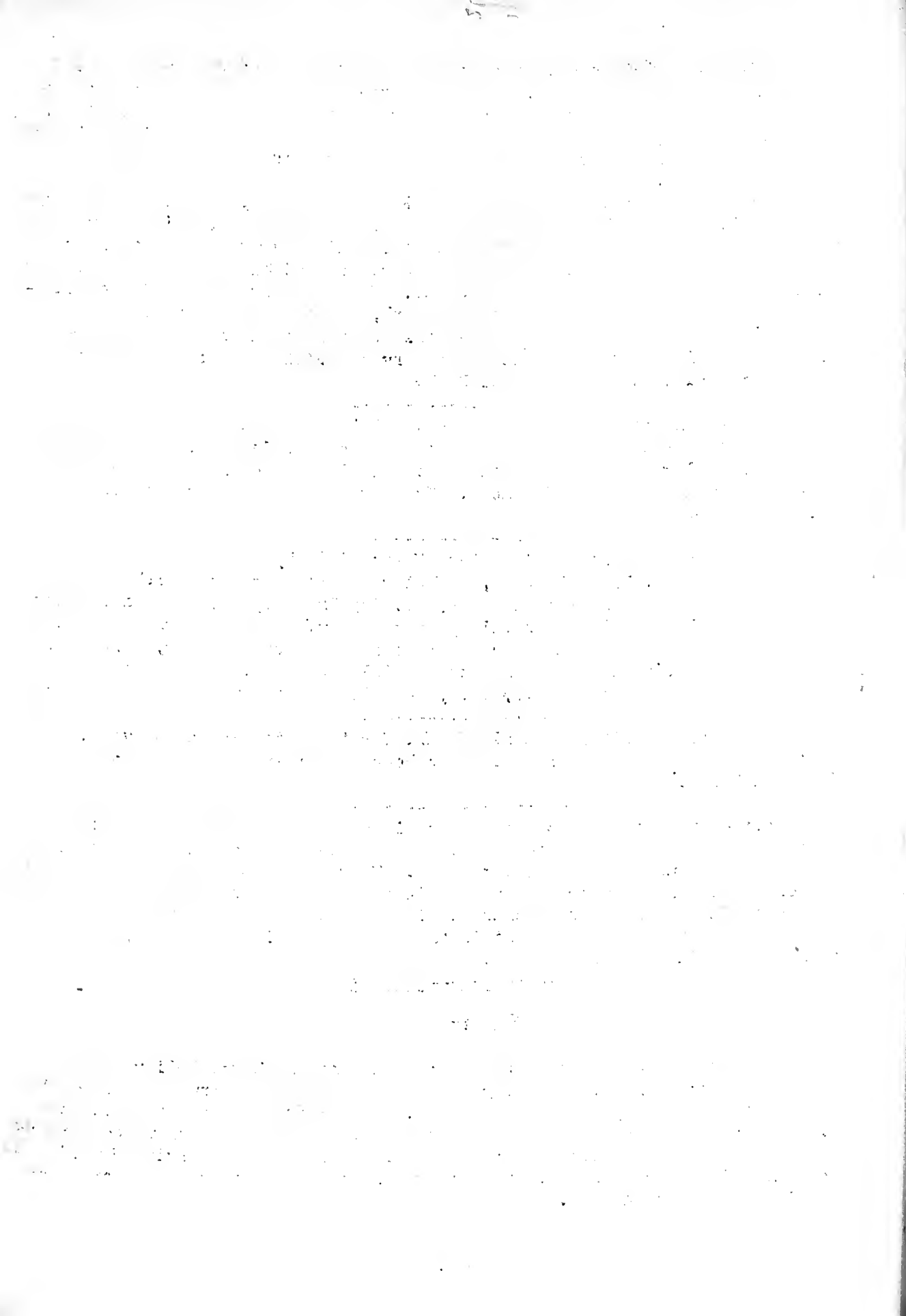
Forty-five employees of the National Park Service holding Department appointments left the Service to join the military and naval forces of the United States during the past two years. Many of these employees have kept in touch with the Service and have indicated their desire to return to their old positions after their discharge. To date twelve have reentered the Service, either by reinstatement in the positions which they left, or by reemployment in another capacity.

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News Items.

If anything occurs in your park or monument which you believe would be of interest to your fellow employees in other parks and monuments or in the office at Washington, please send it in. You might write and tell if you like the news letter - we would like to know. Address all communications to the Director of the National Park Service, "National Park Service News." All communications should be received not later than the 25th of each month for use in the current number.

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DEPARTMENT OF THE INTERIOR

NATIONAL PARK SERVICE NEWS

No. 3

August, 1919

To the Members of the National Park Service:

This issue of the News comes at a time when unprecedented travel to the parks and monuments has put every facility provided to the acid test. Not only have the concessioners with their extended equipments and large forces been pressed to meet the demands of an almost overwhelming influx of an enthusiastic and appreciative mass of tourists, but each member of the Service has been given a larger opportunity to exemplify by word and deed just what the Service itself promises the traveling public under such peak-load conditions; and through its members the Service appears to have measured up well to its high standards.

The park travel this season and the complimentary letters received indicate that not only are the national park tours proving wonderfully attractive to responsive visitors but that these visitors, as patriotic Americans sympathetic and appreciative of our aims, are spreading the news of the pleasures and benefits to be derived from such trips amongst their friends and acquaintances all over the land. For the National Park Service a satisfied and pleased visitor is the best advertisement; and courtesy in dealing with visitors under any and all conditions is the firm basis of success in our endeavors. The teamwork shown throughout the Service during this season should be an inspiration for the future and this makes us look with composure toward any demand the coming years may bring.

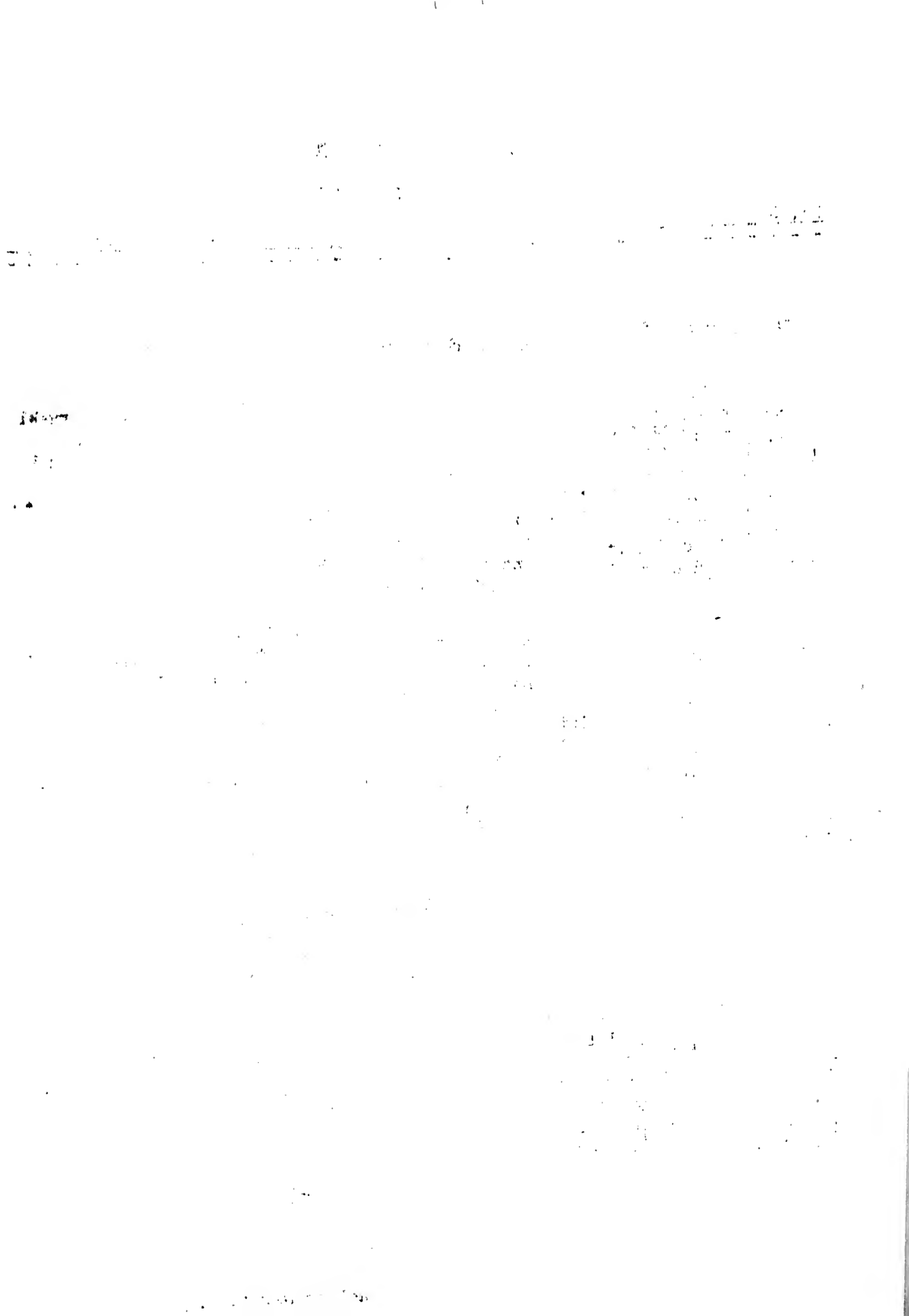
"It ain't the individual,
Nor the corps as a whole,
But the everlastin' teamwork,
Of every bloomin' soul."

This also gives me the opportunity as a newcomer in the midst of those who have served long and well in the Service in this way to express my sincere appreciation of the privilege accorded me by Director Mather to join them in the great work the National Park Service is doing. The Service gets closer to the happy, joyous side of people than other Government activities, since its aim is to provide for the health, pleasure, comfort, and recreation of the American people.

Cordially yours,

ARNO B. CAMMERER

Acting Director.



New Park Legislation

July 8, 1919, Mr. Lea of California submitted the following resolution in the House of Representatives:

Resolved, That the Secretary of the Interior be, and is hereby directed to investigate and report to the House of Representatives as to the suitability, location, cost, if any, and advisability of securing a tract of land in the State of California containing a stand of typical redwood trees of the species "Sequoia Sempervirens", with a view that such land be set apart and dedicated as a national park for the benefit and enjoyment of the people of the United States and for the purpose of preserving such trees from destruction and extinction, and also as to whether or not the whole or any part of such lands or the purchase price thereof would be donated to the United States, and the probable cost of maintaining such lands as a part of the national park system.

Government Employees Mutual Relief Association

The Service desires to call the attention of its field employees to the benefits of the Government Employees Mutual Relief Association, which is endorsed by the Secretary of the Interior, the Secretary of Agriculture, The Forester, and the heads of various bureaus of the Interior Department, the Department of Commerce, and the Interstate Commerce Commission.

This Association, composed of male employees of the departments named above, pays the following benefits:

"Loss of time during disablement preventing attention to official duties, and while not drawing salary and not have unused leave with pay; indemnity at rate of \$14 per week; total payment in any period of twelve months limited to \$150.

"Medical attention, for illness or accident preventing attention to official duties, or when not disabled but under medical care on account of accident or under necessary surgical treatment for sickness or accident: Doctor's fees not exceeding rate of \$28 per week, except in case of surgical operations, when actual charges not exceeding amounts scheduled in Constitution; medicine prescribed by doctor, not exceeding rate of \$5 per week; hire of nurse when directed by doctor, not exceeding rate of \$25 per week; hospital expenses when directed by doctor, not exceeding rate of \$15 per week; and such further amounts as the Governing Committee may deem reasonable and proper for unusual expenses due wholly and necessarily to such sickness or accident, not exceeding \$50; total payment in any period of twelve months \$300.

"Death benefits, payable upon receipt of proof of death, \$200, and actual cost of transportation of body to place of interment, not exceeding \$100.

"Benefits are paid immediately upon the receipt of the claim, when

properly certified and accompanied by paid bills. There is no red tape. Every eligible employee should take advantage of this opportunity for cooperation."

The officers of the Association are:

Morris Bien, President	E. M. Douglas, Vice-President
Reclamation Service	Geological Survey
C. H. Squire, Secretary,	George K. Denmark, Treasurer
1340 Parkwood Place, N.W.,	Geological Survey
Washington, D. C.	
George G. Anderson)	
Forest Service)	
W. J. Mangan,)	Finance Committee
Forest Service)	

During the past year the Association has been able to do a good work among its members through its ability to pay a great many claims growing out of the influenza epidemic. They have paid out nearly \$10,000 since last October, which is doing pretty well for a small cooperative association of this character.

A few members of the National Park Service are now affiliated with the Association, and new members from the Service are sought. Inquiries as to membership should be addressed to Mr. C.H. Squire, Secretary, who will be glad to send application forms to those desiring to join the Association.

Some suggestions from Mr. Charles P. Punchard, Jr.,
The Service's landscape engineer.

In a recent report Mr. Punchard recommends that an accurate map of the water and other underground systems in the settled portions of our national parks be made, in order that each succeeding superintendent may be in a position to tell what is under the ground and have a definite base upon which to work when changes, additions or improvements are made or contemplated. He states that Superintendent Lewis is constantly finding abandoned mains and lines of pipe which he and other older residents of Yosemite never knew existed.

Mr. Punchard in discussing suitable stones for walls says that in some localities there are two kinds of stone found - small glacial boulders which have been washed down in the streams until they are almost of a uniform size and smooth as polished stone, and also a volcanic stone, more interesting in color and of various sizes and shapes. He recommends the use of the volcanic stone instead of the glacial boulders, which makes an uninteresting wall and have a smoother surface which offers no oppor-



tunity for the cement to catch and hold unless the stones are broken. If any great weight is to be held by these smooth stones they will squeeze out of the wall and thus weaken it.

In regard to the forests, he thinks their appearance in the immediate vicinity of the roads may be improved by removing trees which fall across the road and cutting them into serviceable lengths for firewood, instead of cutting them in two and throwing them on the side of the road to decay. When trees are felled for telephone lines and other necessary work, the fallen trees should be cut into four-foot lengths, piled and then hauled to the places where it can be used when needed. If this practice had been followed in all the parks, very little virgin forest would have to be cut to supply fire-wood for local domestic uses.

Two Park Arrests

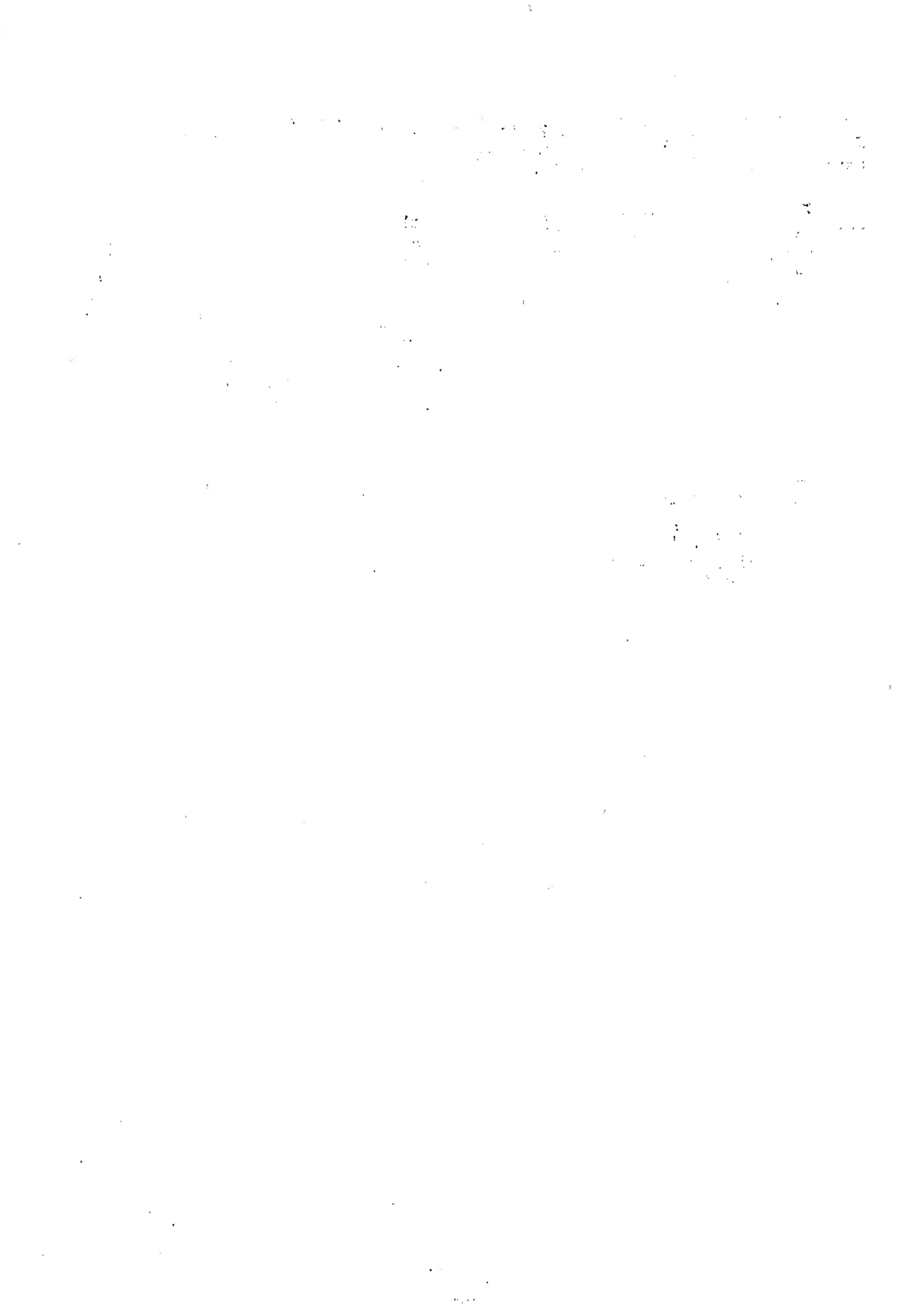
There are as many definitions of a gentleman as there are individuals to define the term, but the two instances cited here recall one man's idea of the word: "A gentleman is a man who performs every duty in the kindest possible way - who can even make an arrest without forgetting his dignity or the consideration due another."

In one of the parks a ranger arrested a motorist for speeding. The deed was done in such a way that instead of resenting it, the speeder wrote a letter to the Secretary of the Interior in which he praised the ranger for the manner of the arrest and for the spirit which animated him in the performance of his duties. The writer stated that as he was an employer of men he felt qualified to judge men, and he recommended the ranger to the Secretary for consideration for a place higher up in the service of his country.

The other instance happened in another park. A tourist overheard some friends joking a man about having been arrested. The man took the jokes good-naturedly and finally said in a delightful southern drawl: "Well, it was worth being arrested to see the courteous and considerate manner in which the ranger performed his exceedingly disagreeable duty."

Mount Rainier

Superintendent Toll reported in June that the snow was greater in depth than in June of last year, the drifts on each side of the fourth crossing bridge over the Nisqually River being from 25 to 30 feet deep. The snow here was blasted with dynamite to assist melting. By the first of July the road was open to Narada Falls and blocked by snow beyond that point. A road force dragged the drifts to remove snow from the road and blasted the drifts with dynamite and TNT. In order to be effective for snow removal, it was found that the blasting charge had to be placed near the bottom of the drift and close to the road. This resulted in small holes in the road surface, which were repaired after the road was opened to traffic. July 19 the road from Narada Falls to Paradise Valley was opened to public travel.



The Northwestern Ski Club held its annual tournament in Paradise Valley on June 29, which was attended by several hundred visitors.

Dr. W. P. Taylor, in charge of the Biological Survey party, arrived at Mount Rainier National Park early in July and was later joined by other members. They will remain in the park until the latter part of September, camping in various locations. They are engaged in field work for a publication on the birds and mammals of the park.

The Massachusetts Forestry Association party, seventy-eight in number, visited the park July 21-24.

July 26, the Mountaineers, eighty to one hundred in number, entered the park and started on their "Around the Mountain" trip, which will occupy three weeks.

July 27, Four or five hundred members of the Order of Eastern Star visited the park from Seattle, where the organization was holding its national convention.

More than two hundred members of the West Coast Lumbermen's Association visited the park July 29-30, holding some of their convention meetings there, the rest being held in Tacoma and Seattle.

The Standard Oil Company completed the construction of its service station at Longmire Springs, July 5.

Guides have taken twelve parties, numbering sixty-nine visitors, to the summit of Mount Rainier during July, the first ascent being on July 2d.

	Mount Rainier Travel for June and July			
	1918		1919	
	Automobiles	Visitors	Automobiles	Visitors
June	808	3,723	650	3,192
July	2,586	12,347	3084	14,159

Travel was less in the park during June of this year than the corresponding month last because the snow was heavier and the road to Paradise Valley was not opened until almost two weeks later.

Crater Lake

Considerable snow shoveling by the Crater Lake Company enabled automobiles to reach Anna Spring June 18th and the following day the road was open to Fort Klamath. By snow plowing and shoveling automobiles reached the Lake June 30th. Automobiles were six days later reaching Anna Spring and twelve days later reaching the Lake this season than in 1918.

The trail from the Lodge to the water was covered in many places by

huge snow banks, but trails were shoveled along the top of the banks and the trail was perfectly safe for travel June 30th.

There is more money to be made by the boats on Crater Lake than anything else in the park, so on July 9th ten steel row boats, four small launches and one thirty-six foot launch were shipped from Salem, Ohio, for use in the park. The former equipment consisted of seven row boats and a small launch. Fishing is excellent this season and this has increased the demand for boats.

The Superintendent reports that the roads in Crater Lake are better than they have ever been at corresponding dates, but they are getting somewhat rutted and very dusty, especially near the entrances. The Rim Road was open for travel August 3d.

The Massachusetts Forestry party came to Crater Lake via Medford July 28th and left by way of Klamath Falls July 30th.

Travel has been exceptionally heavy during July and the stage lines have been well patronized. 1, 646 automobiles and 6,125 visitors entered the park in July.

Y O S E M I T E

In June the total number of people utilizing the public camps was 4,934 of which 4,530 were automobile campers. The number in camp at one time averaged about two thousand people, about twice the number camped at one time during previous years.

Mr. J. E. Patterson from the Bureau of Entomology, arrived in the Yosemite in the early part of June to continue insect control studies. Ten trees were cut and treated on the floor of the Valley, and in addition an intensive cruise of the entire valley floor was made, as well as studies of outlying districts.

Except for very extensive activities of the needleminer in the lodgepole pine in the Tenaya Basin, Mr. Patterson reported the park forests as being in unusually good condition and practically free from insect depredations.

Mosquito Control

Mosquito control under the direction of Ranger Adair was continued up through June 18th, when the absolute lack of breeding on the floor of the valley indicated that it was unnecessary to continue intensive operations further. Ranger Adair was, however, retained for service on the floor of the valley and watched the mosquito situation closely in connection with his regular ranger duties. All possible breeding places were inspected in July, but no breeding was taking place.

Major Geiger of the U. S. Public Health Service made a visit of inspection about the middle of June and was much pleased with the success of operations. Mosquito control work in the Yosemite this year has demonstrated the fact that the mosquito nuisance can be entirely eliminated. With oil available on the ground another season and with the practical knowledge of the situation gained from the experience of this year, the evil can be fought even better next season.

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Medical Service

Medical service in the Yosemite showed an increase of about 100% over June of 1918, indicating the necessity for such service increased in proportion to the travel.

The most serious injury in the Yosemite was that sustained by a government employee who was bitten by a rattlesnake while working on the construction of the El Portal telephone line. Suffering from three distinct bites, he was rushed to the hospital, arriving within half an hour after the accident. He is now practically convalescent and will undoubtedly suffer no permanent injury.

Travel

Travel in July in the Yosemite held up wonderfully, all camps and hotels being filled practically to capacity during the entire time. The public camping grounds accommodated 7,215 campers, or over 40% of the total travel to the park for the month. The total number of people entering the park during July was 17,070, as compared with 8,302 in July 1918, and slightly over 11,000 in July 1917. Of the 17,070 who entered in July 1919, 13,215 came in 3,667 private automobiles, 2,789 by railroad, 760 by automobile stage line, and 306 walking, driving, etc.

----- S E Q U O I A

In Sequoia the fishing was excellent in June in all the streams and many tourists enjoyed catching the full limit. The fishing remained fairly good throughout July.

The superintendent reported on July 10th that after much effort on the part of Tulara, Fresno, Kings and Kern counties the State Fish and Game Commission established a temporary hatchery on the Middle Fork of the Kaweah River, five miles east of Three Rivers. If conditions prove favorable, they will build a big permanent hatchery in the near future.

A consignment of trout was distributed and liberated in different waters of the park early in July.

June travel in Sequoia was the heaviest in the history of the park. Travel continued heavy throughout July.

Bears were numerous around the camps in July, but complaints of their depredations were few.

Among the distinguished visitors to Sequoia and General Grant in July were the Secretary of Agriculture, Hon. David F. Houston and Mrs. Houston; the Swiss Minister to the United States, Hans Sulzer, and Madame Sulzer; Col. H. E. Graves, the Forester; and Director Mather

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GRAND CANYON NATIONAL PARK

Arrangements have been made looking to the administration of Grand Canyon National Park by the National Park Service. Mr. William H. Peters, Assistant Engineer, has been designated as acting superintendent, and instructed to proceed to Grand Canyon at once to take charge of administration, and road and trail improvement work. Civil Engineer George E. Goodwin will also go to Grand Canyon soon to confer with Mr. Peters regarding administrative and improvement features to be undertaken in the park.

G L A C I E R

The Superintendent reported that in June a total of 350,000 trout fry were planted in the waters of Glacier National Park, divided as follows: 75,000 brook trout in Appistoki Creek; 50,000 in the north fork of the Cut Bank River; 125,000 in McDermott Lake and 100,000 in the upper end of Lake McDonald. All of the trout planted appeared to be in fine condition and it is believed that each planting will prove successful.

In July 569,000 trout fry were planted, of which 344,000 were rainbow advanced fry and 225,000 Montana grayling.

Fires and Roads.

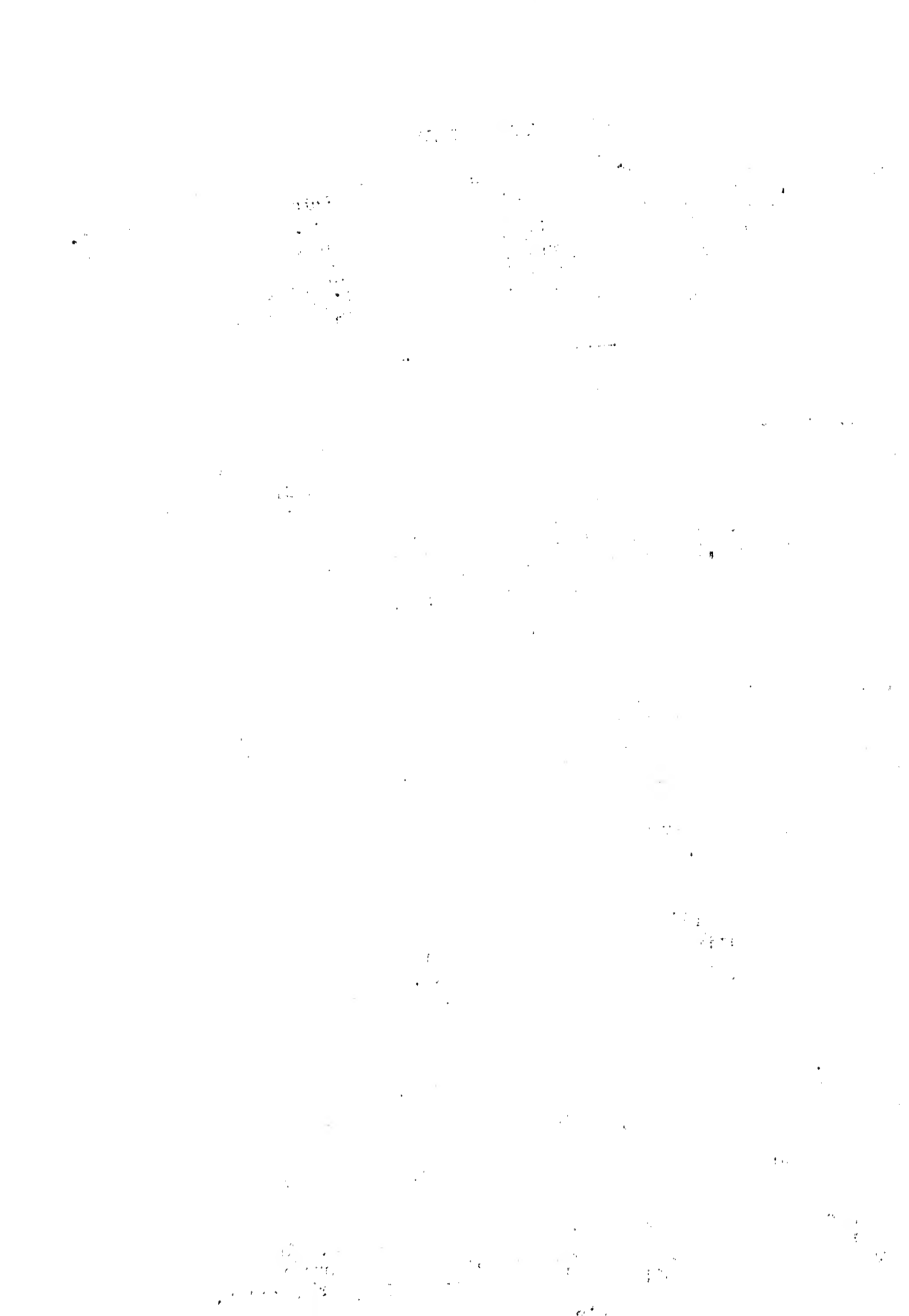
The hot and dry weather seems universal in the national parks this summer. In Glacier the extreme drought and high winds have made forest fires more prevalent and harder to fight. The roads were also badly affected by the weather conditions. The forest fires have been kept under control by cooperation between the park rangers and the Forest Service. Erroneous reports of fire conditions appearing in the press have interfered with travel to the park by private automobile; but if it were not for the smoky atmosphere, few tourists would know there were fires in the park.

On July 9th the party of the Massachusetts Forestry Association entered Glacier, visiting all the principal points of interest. They left the park by way of Lewis's on Lake McDonald, being entertained on the eve of their departure by Wajor Wren and Supervisor Warner of the Forest Service.

The Howard Eaton horseback party was unusually large this year, numbering 175. They entered the park on July 19th, starting over the Mount Henry Trail to Two Medicine. They spent fifteen days in the park, leaving by way of Lake McDonald.

Professor Standly, of Washington, D. C., entered the park the latter part of July. He is studying the flora.

The superintendent reports a great increase in travel. The total number of visitors to the park in July was 8,827, as compared with 2,608 in July last year. 4,674 of these came in private automobiles.



YELLOWSTONE

Park-to-Park Route

In line with the Secretary's announcement of May 16 last of the establishment of a public automobile service between Rocky Mountain, Yellowstone and Glacier National Parks, it is interesting to note from a report of Superintendent Albright that he in company with the managers of the transportation lines in Yellowstone and Glacier parks and the secretary of the Helena Chamber of Commerce completed on July 23rd an automobile run from Yellowstone to the Rocky Mountain park, a distance of 809 miles, in 30 hours and 45 minutes, making an average running time of more than 26 miles per hour. This is a very creditable performance, taking into consideration the fact that condition of the roads more than any other element will be the limiting factor in the development of a large future park-to-park automobile travel.

Fish Hatchery.

On July 16th Landscape Engineer Charles P. Punchard, Jr. submitted suggestions for the improvement of the Fish Hatchery grounds at Lake Station. The Fish Commission has agreed to follow Mr. Punchard's suggestions. The hatchery, residence, and all buildings are to be stained dark brown with dark green roof; dead trees are to be removed; and rough places in the grounds are to be graded. When this work has been completed the Fish Hatchery and grounds will present a very pleasing appearance.

Roads and Fires

Yellowstone also has had its troubles with hot and dry weather and attendant forest fires and bad roads. There were a great number of small fires as well as several which gained considerable headway, threatening at times to become disastrous, but all were finally subdued without at any time interfering with travel. By unusual effort the roads were kept in such condition that complaints of dust and roughness were few.

Many tourists enjoyed the fishing along the roads, and a few took time to visit fishing places remote from the regular routes. Dr. H. M. Smith, U. S. Fish Commissioner, has been in the park since July 8th, engaged in a careful examination of the conditions relating to culture of fish and stocking the park waters.

A small band of cow elk seen on Mary Mountain had with them 75 per cent of their own number in calves.

81 calves have been born in the tame buffalo herd this season. Elk, deer, antelope and bears are frequently seen by travelers.

Travel

In the Yellowstone travel for the month of July has broken all records. July 16th was the biggest day in the history of the park, almost a thousand people having entered that day. A total of 24,090 tourists visited the park in July, as compared with 6,580 in June, 1919, and 8,084 in July 1918. The number of private automobiles in July was 4,457,

The first part of the document discusses the importance of maintaining accurate records of all transactions. It emphasizes that every entry should be supported by a valid receipt or invoice. This not only helps in tracking expenses but also ensures compliance with tax regulations. The document further outlines the procedures for handling discrepancies and the role of the accounting department in providing timely reports to management.

In addition, the document highlights the need for regular audits to identify any potential issues or fraud. It states that the audit process should be thorough and unbiased, involving all relevant departments. The findings of the audit should be used to improve internal controls and prevent future occurrences. The document also mentions the importance of staying updated with the latest accounting standards and regulations to ensure the accuracy and reliability of the financial statements.

Finally, the document concludes by reiterating the commitment to transparency and integrity in all financial reporting. It encourages all employees to adhere to the highest standards of ethical conduct and to report any suspicious activities immediately. The document is signed by the Chief Financial Officer and the Controller, underscoring their responsibility for the accuracy and completeness of the financial information presented.

carrying 16,784 persons.

Mr. Homer S. Cummings, chairman of the Democratic National Committee visited the Yellowstone with his party, July 15 to 19.

Mr. Hans Sulzer, the Swiss Minister, and party were in Yellowstone July 25 to 30.

ROCKY MOUNTAIN

The Cloud-burst

On July 30th the most disastrous cloud-burst in many years occurred in Rocky Mountain National Park, completely destroying eight miles of road on the Middle St. Vrain. This road is used largely for freight and mail, being the shortest route into the Park. All bridges were washed out and five automobiles were stranded in the stretch. It is believed that it will take 200 men approximately 60 days to put this road in condition to travel. On the South St. Vrain three bridges were washed out. The damage to these roads makes it necessary to transfer all passengers, freight and mail through the Big Thompson Canyon, which is a very narrow road and not adequate to handle even normal traffic. As soon as the South St. Vrain road is fixed, which will be in the course of a few days, the traffic can be divided.

Travel

Total travel to Rocky Mountain Park by actual count up through July 27th was 8,231 machines and 37,240 persons. The average weekly entrances through the Estes Park and Longs Peak gateways approximate 5,000. The Denver Tourist and Publicity Bureau and the Denver hotels report that about one hundred persons per day are turned away from Rocky Mountain National Park because they cannot secure accommodations.

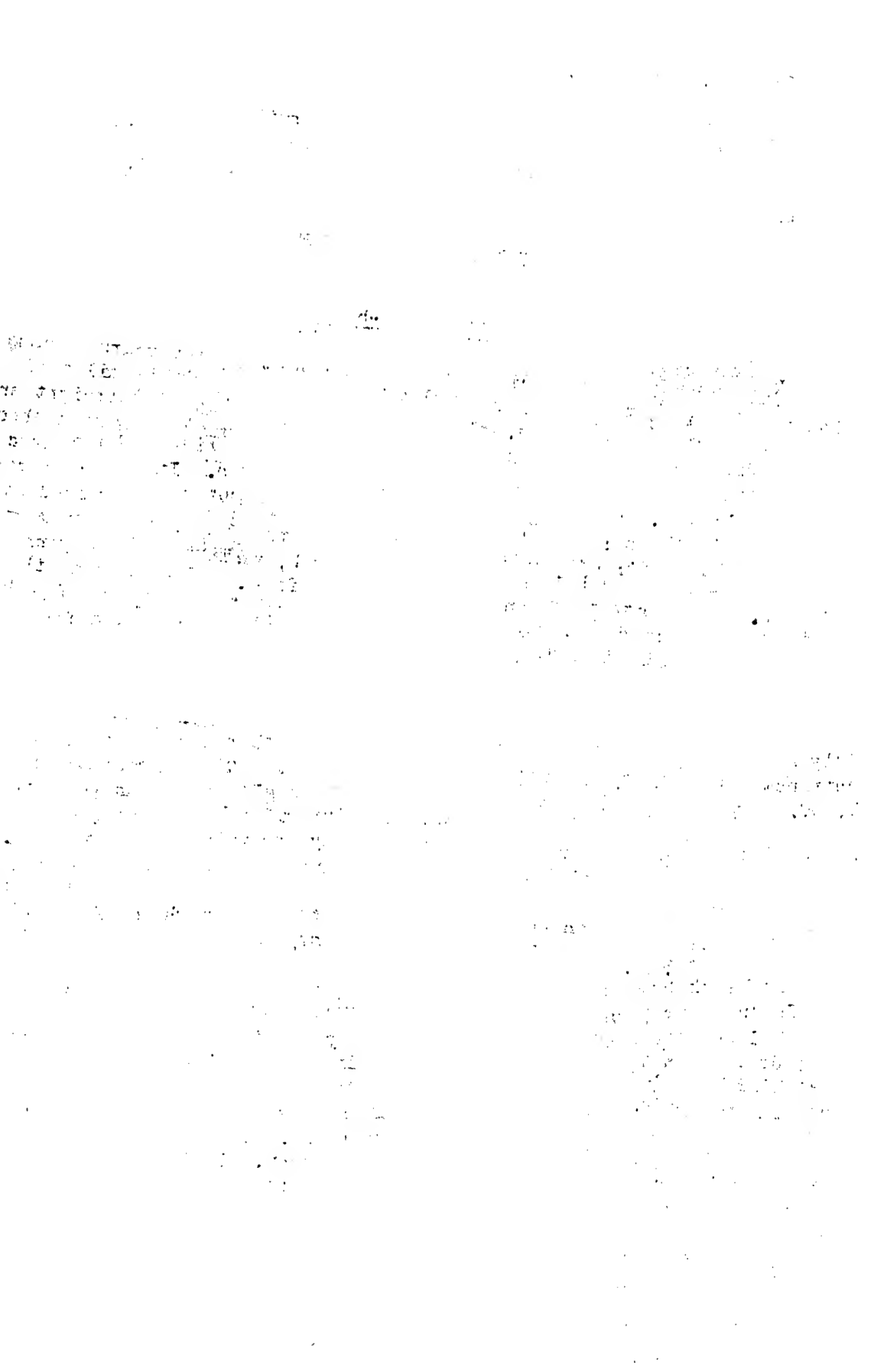
Mountain sheep can be seen any time in the neighborhood of Specimen Mountain, in the northwestern part of the park, one party counting 175 head on that range.

One black bear was reported seen along the Glacier Basin Road.

In June two young men attending the YMCA Conference found a herd of deer near Bear Lake. In the herd was a young fawn. They scattered the herd and ran the fawn down, bringing it into the YMCA Conference Camp. These young men were removed from the park and have promised to report to all superintendents, should they ever again visit a national park and secure a copy of the regulations. The fawn was badly hurt and is being cared for by the superintendent. It is improving and as soon as it recovers sufficiently to be able to take care of itself, it will be turned loose.

On July 1st the Massachusetts Forestry Association party visited the Rocky Mountain National Park.

The Travel Club of America tour reached the park July 21st. The superintendent addressed both of these parties on the subject of national parks.



On July 22d, the superintendent went to Denver to meet the Brooklyn Eagle party. Mr. Albright also met the party in Denver and they all went by automobile from Denver via Boulder and the South St. Vrain Canyon to Longs Peak Inn, where the party had luncheon, and where addresses were made by Mr. Enos Mills, Mr. Albright and Mr. Way. In the afternoon the entire party drove over the Highline Drive and Fall River Road.

M E S A V E R D E

Superintendent Rickner reports that heavy and frequent showers during July necessitated work on the roads in Mesa Verde the entire month. The roads have been kept in good condition and the rains have not stopped travel.

Experimental Gardening

The experimental corn crop is doing well and gives promise of a big yield. The corn field has been cultivated by the rangers when other duties permitted. There are two experimental gardens on the mesa, one near Mummy Lake and one near Cliff Palace.

Tourist travel held up well in spite of the rains. The total number of visitors during the month was 574.

	July 1919	July 1918
In private cars	448	336
Concessioners'	112	33
Other means	<u>14</u>	<u>16</u>
	574	385

W I N D C A V E

Travel .

Superintendent Roy Brazell reports that tourist travel through Wind Cave National Park and in that section of the country has been and still continues to be the heaviest they have ever experienced, in spite of the exceptionally dry weather, which has nearly exhausted the water supply. There were 1886 visitors to the Cave during the month of July. 443 of them coming in with the transportation concessioner and 1443 by private conveyance. This is the greatest number of visitors conducted through the Cave in any one month since his connection with the park, and exceeds by 375 the month of July 1917, which had been considered the record-breaker. Camping parties were quite numerous.

Bird life in Wind Cave is on the increase.

1. The first part of the document discusses the importance of maintaining accurate records of all transactions. This is essential for ensuring the integrity of the financial data and for facilitating the audit process. The records should be kept in a secure and accessible format, and should be updated regularly to reflect any changes in the data.

2. The second part of the document outlines the various methods used to collect and analyze the data. This includes the use of statistical techniques to identify trends and patterns in the data, as well as the use of regression analysis to test hypotheses about the relationships between different variables. The results of these analyses are presented in a clear and concise manner, allowing the reader to understand the key findings of the study.

3. The third part of the document discusses the implications of the findings for policy and practice. It highlights the need for continued research in this area, and provides recommendations for how the findings can be used to inform decision-making. The document concludes by emphasizing the importance of transparency and accountability in the reporting of research results, and the need for ongoing communication and collaboration between researchers and stakeholders.

4. The fourth part of the document provides a detailed description of the data sources and the methods used to collect and analyze the data. This includes information about the sample size, the data collection process, and the statistical techniques used to analyze the data. This section is intended to provide the reader with a clear understanding of the methodology used in the study, and to ensure the reproducibility of the results.

5. The fifth part of the document discusses the limitations of the study and the potential for bias. It acknowledges the fact that the study is based on a specific sample and that there may be some limitations to the generalizability of the findings. However, it also highlights the strengths of the study, such as the use of a large and diverse sample, and the use of rigorous statistical methods to analyze the data.

6. The sixth part of the document provides a summary of the key findings of the study and discusses the implications for policy and practice. It highlights the need for continued research in this area, and provides recommendations for how the findings can be used to inform decision-making. The document concludes by emphasizing the importance of transparency and accountability in the reporting of research results, and the need for ongoing communication and collaboration between researchers and stakeholders.

P L A T T

Superintendent Ferris reports that in the portion of Platt National Park locally known as Bromide Park, which is made up of Bromide, Medicine and Sodium-Chlorid Springs, the number of visitors during July totaled 19,848. These people took from the springs a total of 4,198 gallons of Bromide water, 1,041 gallons of Medicine, and 730 gallons of sodium-chlorid. Two hundred gallons of water were shipped from these springs, making a total of 6,219 gallons of water removed in July.

H O T S P R I N G S

Dr. William P. Parks, superintendent of Hot Springs Reservation, reports that the summer patronage of that resort is materially increasing and that a vast number of visitors has been handled through the office during July.

The First Assistant Secretary of the Interior, Mr. Alexander T. Vogelsang, accompanied by Mrs. Vogelsang and his secretary, Mr. J.G. Massey, spent three weeks at Hot Springs during July.

L A F A Y E T T E

Since the establishment of the Sacagawea National Monument, Maine, which was later designated as the Lafayette National Park, there has been a marked improvement in regard to conservation of plant and animal life. No wood has been stolen from Lafayette Park in the last year, which is a contrast to the year before.

A certain part of the park is naturally a favorite winter haunt of deer, and under the protection given they have rapidly increased by the incoming of wanderers from the mainland. They are now in the park in numbers, a herd of seventeen having been seen recently.

This same portion of the park is also a natural haunt and nesting ground of partridges - ruffed grouse - the most valuable game bird in New England. These birds are in present danger of extermination through destructive shooting and their immediate protection is of great importance. Partridges are now on the increase in the park.

1. The first part of the document discusses the importance of maintaining accurate records of all transactions. It emphasizes that proper record-keeping is essential for the integrity of the financial system and for the ability to detect and prevent fraud. The text notes that without reliable records, it would be difficult to verify the accuracy of financial statements and to identify any irregularities.

2. The second part of the document outlines the various methods used to collect and analyze data. It describes the process of gathering information from different sources, such as interviews, surveys, and document reviews. The text also discusses the importance of ensuring the reliability and validity of the data collected, and the need to use appropriate statistical techniques to analyze the results. The document highlights the challenges of data collection and analysis, and provides suggestions for how to overcome these challenges.

3. The third part of the document focuses on the importance of transparency and accountability in the financial system. It argues that transparency is essential for building trust and confidence among investors and other stakeholders. The text discusses the various ways in which transparency can be achieved, such as through the publication of financial statements and the disclosure of key information. It also emphasizes the need for strong governance and oversight mechanisms to ensure that the financial system is operated in a fair and equitable manner.

4. The fourth part of the document discusses the role of technology in the financial system. It notes that technology has revolutionized the way in which financial services are delivered, and has opened up new opportunities for innovation and growth. The text discusses the various types of technology that are being used in the financial industry, such as artificial intelligence, blockchain, and big data. It also highlights the challenges of integrating technology into the financial system, and provides suggestions for how to address these challenges.

5. The fifth and final part of the document provides a summary of the key findings and conclusions. It reiterates the importance of maintaining accurate records, collecting and analyzing data, ensuring transparency and accountability, and embracing technology. The text concludes by noting that the financial system is a complex and dynamic environment, and that it is essential to continue to monitor and adapt to changes in the market. The document ends with a call to action, urging all stakeholders to work together to ensure the integrity and stability of the financial system.

Excavations in the Southwest

The Service is much interested in the archeological work now going on in some of the reservations in the southwest.

A permit was granted June 16 to Dr. Clark Wissler, American Museum of Natural History, New York City, to conduct archeological investigations at the Pueblo Bonito site within the limits of the Chaco Canyon National Monument. This monument is in northwestern New Mexico, about seventy-five miles from Gallup. The Pueblo Bonito contained originally about 1200 rooms and is one of the biggest prehistoric ruins yet discovered in the southwest. The permit covered the removal of short sections from some of the timbers in the ruin, in order that a special study of the tree rings might be made with a view to determining their relative ages; also the making of a few minor excavations in some of the rooms to check up data secured on the Hyde expedition, on which a publication is about to be issued by the American Museum of Natural History.

Gran Quivira.

Gran Quivira is one of the most important of the early Spanish mission ruins in the southwest, reached by a good road from Mountainair, New Mexico, twenty-four miles distant. A permit was granted on July 22 to Dr. Edgar L. Hewett, Director of the School of American Research, Santa Fe, New Mexico, to excavate these ancient ruins. Work will be reported at the end of the season.

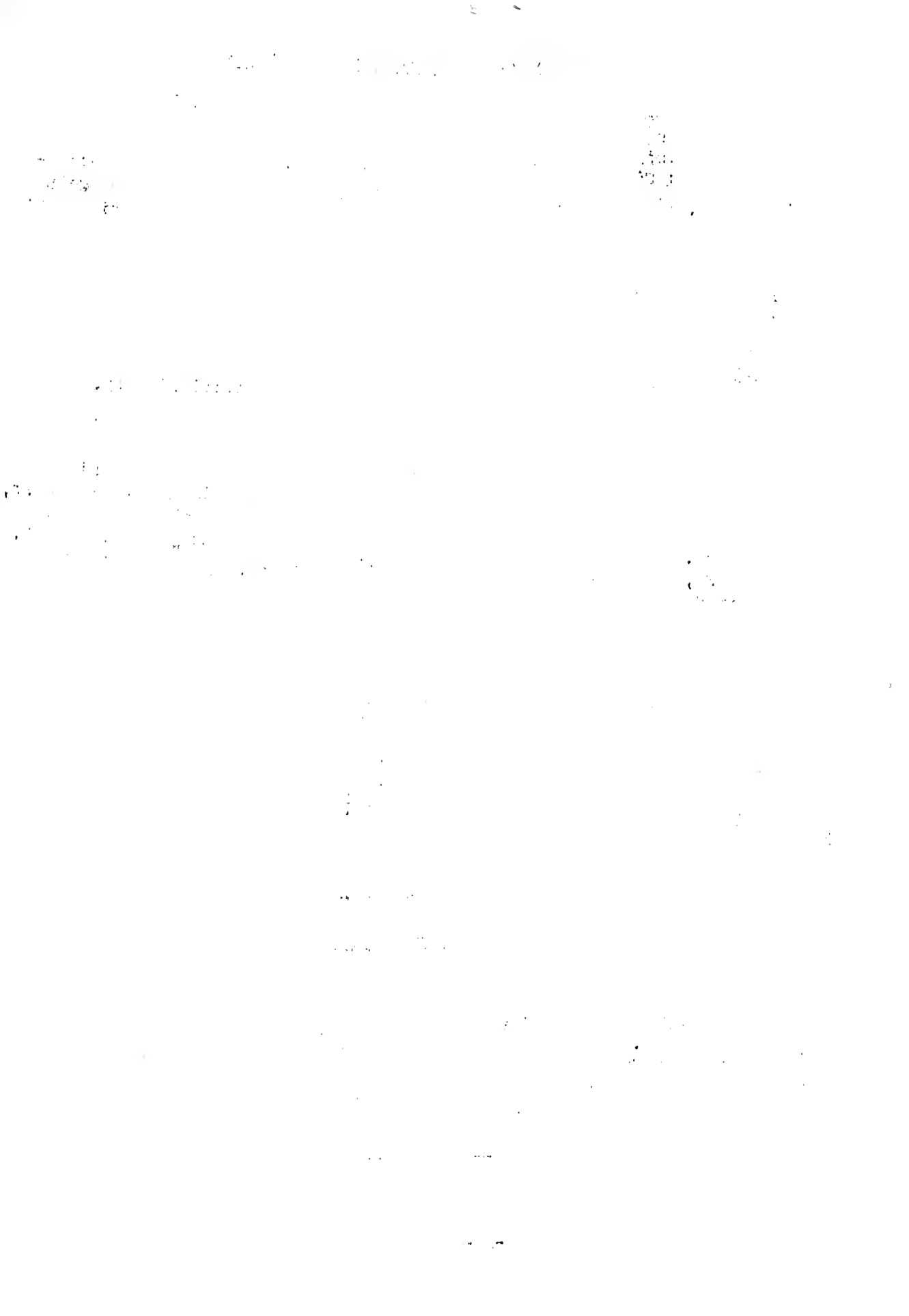
Mesa Verde

Excavations are now being made in the Mesa Verde National Park by Dr. J. Walter Fewkes, Chief of the Bureau of American Ethnology, by the cooperation of the Smithsonian Institution and the Service. \$3000 has been allotted by the Service for this work. The work planned is the restoration of the Square Tower of Peabody House, this tower being the highest structure in the park. The trail up to this ruin is now over sloping rock crossed by means of a rope anchored to a tree above. This will be replaced by an iron railing and a safe trail will be made.

CASA GRANDE NATIONAL MONUMENT.

Casa Grande is located in southern Arizona on the Southern Pacific, the monument being about fifteen miles from the village. Its designation has recently been changed from Casa Grande Ruin to Casa Grand National Monument. Mr. Frank Pinkley, the custodian, reports 383 visitors to the reservation during the month of June, and 162 automobiles. This compares well with 145 visitors for the same month last year. During the fiscal year, 1436 automobiles entered Casa Grande.

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TUMACACORI MISSION

Mr. Pinkley, of Casa Grande, who is also custodian of Tumacacori Mission, made an inspection trip there the latter part of June. He reports that since his last trip to the Mission the debris has been removed from the nave of the church, where it had been lying to the depth of nearly four feet. The floor plan of the church is now laid bare and several very interesting discoveries have been made. It is thought that it was not the intention of the designers to seat a congregation in the church, but that its purpose was to impress and overawe. The facade was not only ornamented with columns, mouldings and statues, but was further decorated by painted designs, and must have been an impressive sight.

Mr. Pinkley concludes his report with the following paragraph:

"The primitive mind of the native must have been greatly impressed by the climax. After having examined the decorated facade as he approached the church, he entered the vestibule and saw, framed by the arch of the choir loft, the four large and two small altars of the nave, the great arch of the sanctuary, and behind that, and framed by it, the raised floor of the sanctuary, bearing the high altar with its figure of the crucifixion and the secondary statues overhead and at the sides."

EL MORRO NATIONAL MONUMENT.

This monument is situated about fifty-five miles from Gallup, New Mexico. The custodian, Mr. Evon Z. Vogt, reports a good many visitors this summer, many of whom came in from Grants, over a new road. The citizens of Gallup are interested in the construction of a new road from there to El Morro, via Ramah. This road is to be classed as a state highway.

Mr. Vogt is much incensed by the fact that some tourists have inscribed their names on Inscription Rock near some of the old Spanish inscriptions of the 17th and 18th centuries. Study is being given to the means to be employed to prevent the recurrence of such vandalism.

MUIR WOODS NATIONAL MONUMENT.

In Muir Woods, just across the bay from San Francisco, a water supply system for the picnic grounds has been installed in a first-class manner. It is giving excellent service and will be much used.

SHOSHONE CAVERN NATIONAL MONUMENT.

This monument is located about four miles southwest of Cody, Wyoming, on the Cody Road into the Yellowstone. A trail has been completed to the cave, with steps up to the entrance. Some work has also been

THE HISTORY OF THE UNITED STATES

The history of the United States is a complex and multifaceted story that spans centuries. It begins with the early Native American civilizations, such as the Mayans, Aztecs, and Incas, who built sophisticated societies in the Americas. The arrival of European explorers in the late 15th century marked the beginning of a new era, as they sought to establish trade routes and colonies. The United States was founded in 1776, and its early years were characterized by a struggle for independence and the development of a unique political system. The American Revolution led to the signing of the Declaration of Independence and the Constitution, which established the framework for the nation's government. The 19th century was a period of rapid expansion and industrialization, as the United States grew from a small coastal nation to a continental power. The Civil War (1861-1865) was a pivotal moment in the nation's history, as it resolved the issue of slavery and preserved the Union. The 20th century saw the United States emerge as a global superpower, leading the world in the development of nuclear energy and space exploration. The Vietnam War (1955-1975) and the Watergate scandal (1972) were significant events that shaped the nation's identity and its role in the world. Today, the United States continues to be a major force in global affairs, and its history remains a source of inspiration and reflection for people around the world.

THE AMERICAN WEST

The American West is a region of vast natural beauty and rich cultural heritage. It is a land of mountains, rivers, and plains, where the rugged beauty of the landscape has inspired generations of artists and writers. The West is a place of opportunity and adventure, where the dream of a better life has drawn people from all over the world. The American West is a story of exploration and discovery, of the search for a new frontier. It is a story of the pioneers who braved the hardships of the journey to build a new life in a new land. The West is a place of freedom and independence, where the individual is free to pursue his or her own dreams. The American West is a place of hope and possibility, where the future is bright and the possibilities are endless. The West is a place where the past meets the present, where the old ways of life are still being practiced and the new ways are being discovered. The American West is a place where the spirit of adventure and exploration lives on, and where the dream of a better life is still being pursued. The West is a place where the American dream is being lived, and where the future is being built. The American West is a place of endless possibilities, and it is a place where the American dream is being realized.

done on the interior of the cave to make it passable and safe for tourist parties in charge of a competent guide. This work makes the cave, known locally as Frost Cave, accessible to the public, and brings its rooms and crystal formations within reach of those using the Cody entrance to the Yellowstone.

ZION NATIONAL MONUMENT.

Mr. Walter Ruesch, custodian of Zion, reports that the weather in June was very dry - not so much as a drop of rain falling during the month. This of course made the roads very dusty, but a good deal of work was done on them so that they only awaited the summer rains to be in good condition. In July there was plenty of rain.

Deer and blue grouse were noticed on the western rim and are thought to be increasing rapidly, while on the valley floor deer are frequently seen. Signs indicate that they are increasing.

The number of visitors in June was 219, many of them being doctors and college professors. In July there were 340 visitors.

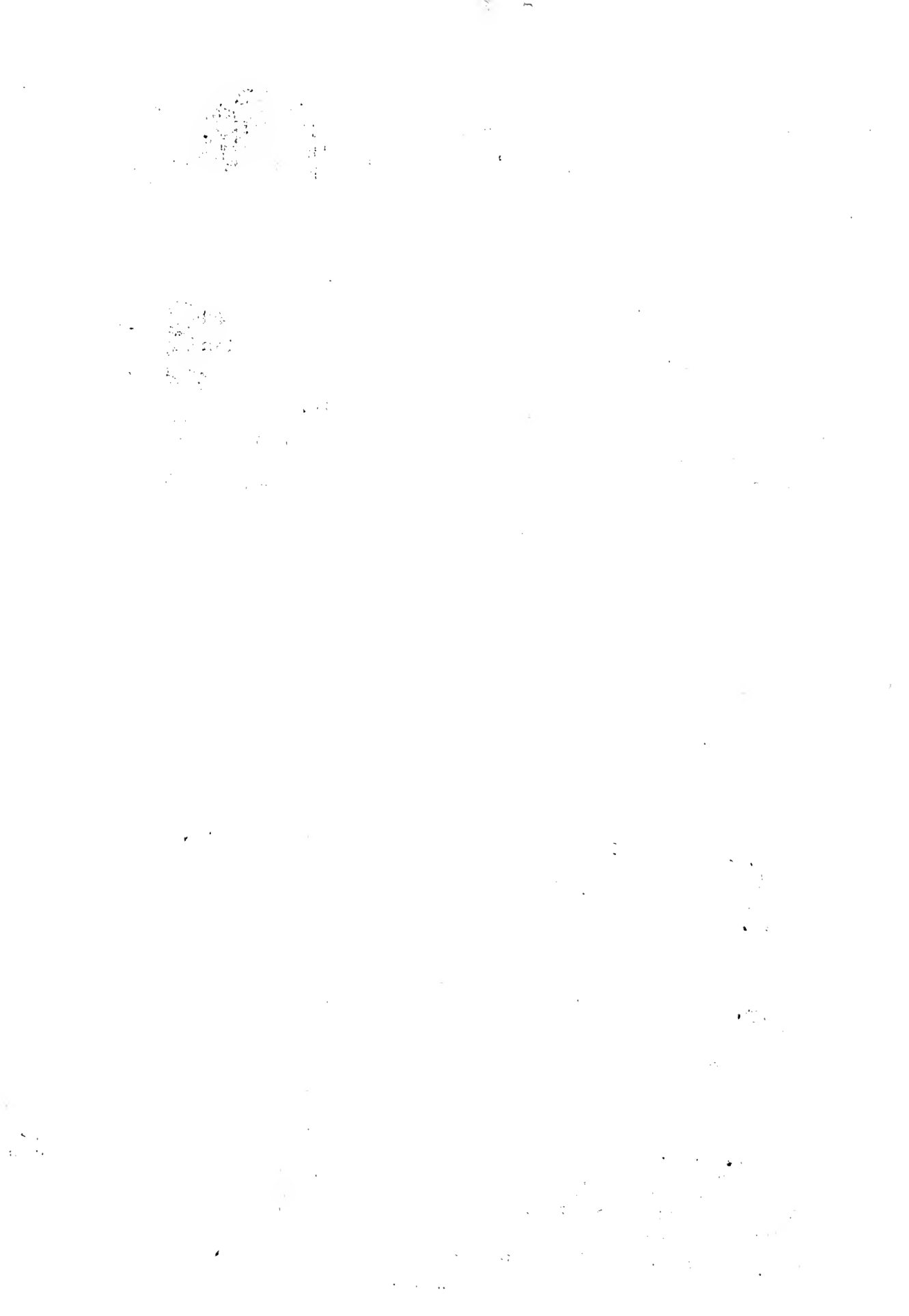
Personal notes.

Director Mather has finished his inspection of Yosemite, Sequoia, and General Grant National Parks and the proposed Roosevelt National Park. He is now planning to visit Crater Lake, Mount Rainier and Yellowstone before his return to Washington.

Mr. Charles P. Punchard, Jr., the Service's landscape engineer, has made his inspection and report of conditions in Yellowstone. He arrived in Visalia, California, the latter part of July for his inspection of Sequoia.

Mr. Thomas Ferris, of Oklahoma, on July 16th succeeded Col. Richard E. Sneed as superintendent of Platt National Park. Col. Sneed resigned to accept the office of Commissioner of Confederate Pensions for the State of Oklahoma.

Mr. A. E. Demaray, of the Washington office, has just returned from a western trip which included visits to Muir Woods, Yosemite, Sequoia, Grand Canyon and the Petrified Forest. He was accompanied by Mrs. Demaray and their little daughter, four years old. She made all the trail trips with her mother and father and was the youngest child who had been at Merced Lake this summer.



Mr. Eben Z. Vogt, of Ramah, New Mexico, custodian of El Morro National Monument, accompanied by Mrs. Vogt, made a recent visit to Grand Canyon. There he met George Horace Lorimer, editor of the Saturday Evening Post, and Samuel G. Blythe, who told him they were coming to visit Zuni and El Morro some time. Mr. Vogt states that Mr. Lorimer made some citron remarks to him about the condition of the Arizona and New Mexico roads.

However, Mr. Lorimer had a perfect right to feel disgruntled at the condition of the roads in that part of the country. He reports in a letter to Mr. Albright that when they struck New Mexico they began to have daily cloudbursts which continued until his car expired with a final grunt!

News Items

If anything especially interesting for the news happens in your park or monument, please let us know about it. Address your communication to the Director of the National Park Service, "National Park Service News". It will help the Service.

(1367)

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3. The third part of the document focuses on the role of technology in data management and analysis. It discusses how modern software solutions can streamline data collection, storage, and analysis, thereby improving efficiency and accuracy.

4. The fourth part of the document addresses the challenges associated with data management, such as data quality, security, and privacy. It provides strategies to mitigate these risks and ensure that the data remains reliable and secure.

5. The fifth part of the document concludes by summarizing the key findings and recommendations. It stresses the importance of ongoing monitoring and evaluation to ensure that the data management processes remain effective and up-to-date.

6. The sixth part of the document provides a detailed overview of the data management framework, including the roles and responsibilities of the various stakeholders involved. It also outlines the key performance indicators (KPIs) used to measure the effectiveness of the data management processes.

7. The seventh part of the document discusses the future directions of data management, including the integration of artificial intelligence and machine learning to enhance data analysis capabilities. It also highlights the need for continuous learning and improvement in the data management field.

8. The eighth part of the document provides a comprehensive list of references and resources used in the research. It includes books, articles, and online resources that provide further information on data management and analysis.

9. The ninth part of the document includes a glossary of key terms and definitions used throughout the document. This helps to ensure that all readers have a clear understanding of the terminology used.

10. The tenth part of the document is a conclusion that summarizes the main points of the document and provides a final thought on the importance of data management in the modern business environment.

DEPARTMENT OF THE INTERIOR
NATIONAL PARK SERVICE NEWS

No. 4.

September, 1919

TO EMPLOYEES OF THE INTERIOR DEPARTMENT:

To thrive by thrift one must spend wisely and practice self-denial. But we wisely hold some money for unforeseen emergencies. The best way is to make up one's will to a system of savings. Thrift and War Savings Stamps afford an excellent system to provide for the future.

It is hoped the employees of this Department will continue to practice the lesson of thrift that was brought to us as one of the necessary results of the War. The systematic campaign for buying War Savings Stamps has for its object the financial benefits to the purchaser and assistance rendered the Government in using money to pay our War obligations and expenses.

Mr. Willis B. Magruder, of the Patent Office, is chairman of the Thrift and War Savings Stamp committee for the Interior Department.

The following persons have charge of the sales of War Saving and Thrift Stamps in their respective Bureaus.

Secretary's Office	W. H. Robinson
Indian Office	F. H. Daiker
Land Office	S. H. Weeder
Bureau of Mines	J. L. Cochrane
National Parks	G. C. McClain, Jr.
Patent Office	A. D. Merritt
Pension Bureau	J. M. McCoy
Bureau of Education	J. F. Abel
Geological Survey	Miss H. V. Corey
Reclamation Service	Mrs. Ella W. Ballard
St. Elizabeth's Hospital	George W. Kreis
Howard University	E. L. Parks

Begin a system of saving today. Make up your mind as to how many stamps you will buy each pay day and then see the representative in your bureau and tell him what you intend to do. He will see that you don't forget your resolution.

Cordially yours,

FRANKLIN K. LANE

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5. The fifth part of the document discusses the importance of data governance and the establishment of clear policies and procedures. It stresses that a strong governance framework is necessary to ensure that data is managed in a consistent and compliant manner.

6. The sixth part of the document explores the role of data in strategic planning and performance management. It shows how data-driven insights can help organizations identify trends, opportunities, and areas for improvement, leading to better overall performance.

7. The seventh part of the document discusses the importance of data literacy and training for all employees. It emphasizes that having a data-driven culture requires that everyone in the organization has the skills and knowledge to work effectively with data.

8. The eighth part of the document provides a summary of the key points discussed and offers recommendations for further action. It encourages organizations to continuously monitor and improve their data management practices to stay competitive in a data-driven world.

9. The ninth part of the document discusses the future of data management and the emerging trends that will shape the industry. It highlights the growing importance of artificial intelligence, machine learning, and big data in driving innovation and growth.

10. The tenth part of the document concludes with a final thought on the value of data and the role of the organization in harnessing its power. It reiterates that data is a valuable asset that, when managed correctly, can provide a significant competitive advantage.

11. The eleventh part of the document provides a detailed overview of the data management process, from data collection to data analysis and reporting. It includes a flowchart that illustrates the steps involved in each stage of the process.

12. The twelfth part of the document discusses the importance of data security and the various measures that can be taken to protect sensitive information. It covers topics such as access control, encryption, and regular security audits.

13. The thirteenth part of the document explores the role of data in customer relationship management (CRM) and how it can be used to improve customer service and loyalty. It discusses how data can be used to identify customer needs and preferences, and to tailor marketing and sales efforts accordingly.

14. The fourteenth part of the document discusses the importance of data in supply chain management and how it can be used to optimize operations and reduce costs. It highlights how data can be used to track inventory levels, monitor production processes, and identify areas for improvement in the supply chain.

SUGGESTED POLICY OF CONSERVING THE NATIVE FLORA OF
NATIONAL PARKS AND OF MAKING ALL IMPROVEMENTS
NATURAL AND HARMONIOUS WITH THE
SURROUNDINGS.

(Contributed by Marsden Manson, C. E., Ph.D., Mem. Am.
Soc. C. E., San Francisco, California.)

(1) The range of native flora in the national parks is both grand and beautiful. It affords all that is necessary, from the noblest trees to the most humble plants, to make them instructive and attractive.

In some selected and very accessible area, and around each hotel or stopping place, it is suggested that this range of flora should be completely represented, and every foreign species ruthlessly eradicated. In some instances forest weeds have been introduced and plants from remote regions brought in and cultivated to "beautify" the grandest spots on the continent, the native flowers of which afford all the opportunities for beautifying the grounds which the skill of man can ever properly utilize.

For instance, Yosemite Valley has many foreign trees and plants, and lacks the introduction of species native to the park and some of these are now, and have been for centuries back, perishing.

One of these species is represented by a single specimen which I nurtured by "surreptitiously" breaking the rules and destroying common shrubs and trees to give it more room and light.

(2) Hotels and houses, sign boards, etc., are of the Coney Island type of architecture instead of massive gray granite or other local stone. Bridges are of steel and wood instead of reinforced concrete masked by rough quarry faced stone. Sign boards are on a painted plank instead of on a rough hewn massive native boulder surrounded by native shrubs and vines with the arrow and names cut as if done in the stone age.

Cottages and other buildings should follow the suggestions as to hotels. Gray tiles, or in some instances a dark neutral should replace shingles or tiles of inharmonious colors.

In trees -- the disappearing and perishing yew or the California "nutmeg" are certainly more beautiful than the ailanthus from China or the black locust from Asia Minor, and in far better taste. The same is true of a dozen other species of trees and plants I could name.

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TO THE CHIEF OF POLICE, NEW YORK CITY

FROM THE NEW YORK POLICE DEPARTMENT

RE: [Illegible]

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PIGEONS WILL PROTECT FORESTS

(From AMERICAN FORESTRY, August, 1919)

The War, Navy and Interior Departments, according to information just received by the Manufacturers Aircraft Association, New York, are co-operating in the forest patrol. The idea of such a guard against timber fires occurred simultaneously to the Forest Service and to the air service of the Army. Now comes the Navy Department with the offer to establish pigeon lofts in the forest reserves and to provide the forest airplane patrol with carrier pigeons whose duty it would be to carry messages direct to home relief stations whenever a fire is discovered.

The pigeon branch of the Navy is expanding under the direction of Lieutenant McAtee, and recruits are now sought for this service, which is so closely akin to aviation that it is under the same general administration.

During the war there was no opportunity to train men for this important duty, but now a special school has been opened at Anacostia, D. C., and twenty enlisted men are receiving daily instruction in the training and keeping of carrier pigeons. At the same time these men have opportunity to put their learning to practical uses.

The pigeon branch of the Navy has 2,500 birds. Plenty are available for the forest patrol. Experiments are going on constantly in the effort to increase the efficiency of the birds. Pigeons took an important part in naval warfare overseas. It has been proved that pigeons can fly at a speed at least equal to that of a sea plane or flying boat.

MOUNT RAINIER

Construction has been begun on a powder house to store the TNT received from the War Department. A frame building is being erected 14 feet by 18 feet in size. The location selected as the most suitable is on the Tahoma Creek Trail, and as far from the main road as a truck can be operated.

Forest Fires

Mount Rainier suffered from forest fires during the month and from the excessively dry weather which prevailed in most of the parks. The air was filled with haze during much of the month from the smoke of fires in the vicinity. The Forest Service lookout on Anvil Rock reported that on August 31st the smoke of fourteen fires was visible from his station.

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The Mazamas, the mountaineering club of Oregon, held their annual outing in Mount Rainier, camping on Mazama Ridge from August 3 until August 17. Their stay in the park was saddened by the death of one of their party, Mr. John D. Meredith of Portland, who lost his life while climbing Little Tahoma Peak. This peak had been ascended by but two men prior to this year and is considered a difficult and dangerous ascent. On August 4, Mr. Meredith and Mr. Lee Benedict, both of the Mazama party, left camp in the morning and climbed to the top of the peak, reaching the summit about 5:30 P. M. The descent proved to be slow and difficult. At 9:15 when they had made only the first part of the descent, on the east side of the peak, Meredith called to his companion that he was losing his nerve, and a moment later he fell some forty or fifty feet, and then rolled several hundred feet. It is probable that he fainted before falling. Death must have been instantaneous. Mr. Meredith was an overseas soldier, aged twenty-four years, and unmarried.

Director Mather arrived in the park on August 17. On August 19 he made an inspection trip to the north side of the park, in company with Mr. David Whitcomb, President of the Rainier National Park Company and Major Everett G. Griggs, Director of the company, and others, including the superintendent of the park. The party visited the Carbon River Ranger station, the terminus of the Carbon Glacier, Spray Park, and other points of interest on the north side. The trip occupied four days. The Director returned to Longmire Springs and Paradise Valley on August 24, and left the park the following day.

Travel

The total number of visitors for August, compared with last year, and also for the season to date:

	August	Jan. 1. to Aug. 31
1918	18,286	35,447
1919	<u>21,301</u>	<u>49,354</u>
Increase this year -	13,015	13,907
Percentage of increase	71%	39%

Travel for the Labor Day period broke all records, the figures being as follows:

	Cars	Persons
Saturday, August 30	467	2,065
Sunday, August 31	633	3,761
Monday, September 1	<u>114</u>	<u>529</u>
Total -	1,414	6,355

The greatest demand for accommodation that occurred during the year was on the night of Sunday, August 31, preceding Labor Day. The number of visitors accommodated by the Rainier National Park Company on that date was as follows:

National Park Inn and Annex, Longmire Springs,	433
Paradise Camp -----	311
Paradise Inn -----	<u>485</u>
Total -----	1,229



In addition to the above, more than 150 people spent the night in the lobby of Paradise Inn. The National Park Service secured from the War Department the loan of 500 blankets which were used by the Rainier National Park Company on this occasion.

The Knights of Pythias held their annual initiation at Alta Vista, above Paradise Valley, at sunrise on August 11th. About three hundred members attended the initiation.

The Brooklyn Eagle party visited Mount Rainier August 8 and 9.

The Travel Club of America party visited the park August 9-12.

Three hundred and twenty-nine members and guests of the National Editorial Association visited the park August 13 and 14.

A party of thirty Boy Scouts from Seattle camped at Paradise Valley from August 18 to August 25.

The Washington State Bankers' Association held a convention in the park from August 21 to 24. About four hundred and fifty members and guests attended the convention.

The first electric automobile to reach Paradise Valley made the trip on August 18. The trip was made by a demonstration car for advertising purposes.

Ascent of Mount Rainier

The guides of the Rainier National Park Company have taken twenty-three parties containing two hundred and nine visitors, to the summit this month. In addition to this number, about eight members of the Mazamas made the ascent, making a total of about two hundred and eighty-nine who have reached the summit during August, and about three hundred and fifty-eight for the season to date - the largest number reaching the summit in any season.

C R A T E R L A K E

Fires

Electric storms occurred on the 6th, 13th and 19th of August, starting a few small fires which were quickly brought under control. One fire in the forest reserve west of Union Peak got across the park line, but no damage was done as it was confined to snow brush on an old barn.

The season in Crater Lake has been very dry and the roads on the lower levels where the soil is light are considerably cut up and very dusty.

The Rim Road was cleared of snow and the first automobile of the season went around the lake August 3d.

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The labor situation continues difficult . A number of school boys who were working in the park have now left to attend school, and with the scarcity of labor in the locality and saw mills paying a minimum wage of \$4.50 per day, it is becoming difficult to secure laborers.

Crater Lake Lodge.

Three fire escapes were installed on the Lodge during the month, and there are now ample means of escape in case of fire.

Travel

	Visitors	Automobiles
Travel for the month	7,039	1,828
" to date	13,995	3,733
" to same date, 1918	<u>10,162</u>	<u>2,424</u>
Gain over last season	3,833	1,311

August 11th the National Editorial Association visited Crater Lake. Including the drivers there were about three hundred and fifty in the party. Governor Olcott of Oregon, and Mayor Baker of Portland accompanied them.

Director Mather, accompanied Madison Grant and Charles P. Punchard, Jr., arrived late that same night. As all accommodations at the Lodge had been reserved for the Editorial Association, the Director's party had to use their sleeping bags, which they were fortunate to have with them.

August 16th the Travel Club of America, a party of seventeen, conducted by Charles C. Heyl, came to Crater Lake via Medford. They departed August 18th via Klamath Falls.

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Y O S E M I T E

Fires

Yosemite has been very fortunate in the matter of forest fires, no fires of any consequence being reported during the month, in spite of the dryness of the season.

In August the road through Yosemite Village was surfaced with river gravel, approximately 210 cubic yards of gravel being placed on it.

1947

1. The first part of the report deals with the general situation of the country and the progress of the work done during the year.

2. The second part deals with the work done in the various departments and the results achieved.

3. The third part deals with the financial position of the organization and the budget for the next year.

4. The fourth part deals with the personnel and the work done by the various staff members.

5. The fifth part deals with the general conclusions and the recommendations for the future.

Annual Report 1947

The following is a summary of the work done during the year 1947.

General

The work done during the year 1947 has been very satisfactory and has resulted in a number of important achievements. The following is a summary of the work done in the various departments:

Department	Work Done
Administration	1. The administrative work has been carried out in a very efficient manner.
Finance	1. The financial position of the organization has been improved.
Personnel	1. The personnel work has been carried out in a very efficient manner.
Technical	1. The technical work has been carried out in a very efficient manner.

The work done during the year 1947 has been very satisfactory and has resulted in a number of important achievements. The following is a summary of the work done in the various departments:

1. The administrative work has been carried out in a very efficient manner.

2. The financial position of the organization has been improved.

3. The personnel work has been carried out in a very efficient manner.

4. The technical work has been carried out in a very efficient manner.

The work done during the year 1947 has been very satisfactory and has resulted in a number of important achievements. The following is a summary of the work done in the various departments:

Financial Position

The financial position of the organization has been improved during the year 1947. The following is a summary of the financial position:

Item	Amount
Income	1000
Expenses	800
Surplus	200

The work done during the year 1947 has been very satisfactory and has resulted in a number of important achievements. The following is a summary of the work done in the various departments:

The roads in the valley at the beginning of the season could almost have been called boulevards, but now they are badly rutted, the river gravel with which they are surfaced having decomposed rapidly under the unusually heavy travel. Superintendent Lewis states that the only final solution of the road problem in the Yosemite seems to be the paving of the roads. They are spending enormous sums for road maintenance and the roads are now in such bad condition that if they are not resurfaced at the beginning of next season, as they should be, it must certainly be done the following year. He suggests that in connection with any program that the Service may undertake looking toward securing a general appropriation for park road improvement, an item at least to start the paving of these roads should be given the most serious consideration in the near future.

In regard to the labor situation, Mr. Lewis states that it is uncertain in every respect but that it is particularly bad in respect to trail work, as it is almost impossible to secure competent men to go out into the mountains on that kind of work.

During August a stock of 170,000 fish from the experimental hatchery at Happy Isles were planted in the different waters of the park. They were rainbow and spotted trout and steel heads.

Contract was recently let to the Utah Construction Company for the construction of the main Hetch Hetchy dam, and it is understood that the contractor will take over the city's camp at Hetch Hetchy on September 1, and proceed with the work.

Insect Control

Insect control on a small scale was continued during the month of August by Mr. Patterson of the Bureau of Entomology, the work consisting principally of a study of the life and habits of the needleminer in connection with its activities in the Tenaya Basin and around the Tuolumne Meadows.

On August 7th an accident occurred in which a man named John Moore was killed by being struck by the loose end of a guy wire while engaged in taking down a gin pole.

SEQUOIA

Fires

A forest fire was started on the morning of August 18th along the southern border of Giant Forest about one and a half miles from the tourist camp, and never before within the memory of man has the wonderful Giant Forest been so threatened with partial or perhaps complete destruction.

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The fire was discovered about 11.00 A. M., and within less than thirty minutes after the alarm was given all available men were on the scene, and by heroic efforts the fire was surrounded after having spread over ten acres.

The fire did but little damage other than to the Chimney Tree, which it practically destroyed. This tree is a sequoia twenty-four feet in diameter with its top broken off one hundred and seventy feet above ground. In some past time it was hollowed out by fire so that one might crawl through an aperture and look out through the top, which was fringed by green branches. This fire entered into the immense hollow of the tree, and drawn up through the chimney, it burned away the sides, leaving two charred halves as the remainder of what has been one of the objects of special interest to park visitors in the Giant Forest.

Fish

A consignment of trout was distributed and liberated in the waters of Sequoia as follows:

August 28,	Middle Fork Kaweah River	15,000 steel-head
" 29,	Lower Marble Fork River	8,000 black spotted
" 30,	Lower Marble Fork River	10,000 " "
" 30,	Upper Marble Fork River	5,000 steel-head

Travel

Total travel figures for the season are as follows:

Total travel with Transportation Company	272
" " , private	20,429
" " , trails, all sources	2,004
Grand total, people	22,705
" " private automobiles	3,510

Wild Animals

Deer and bear are very numerous and quite tame.

The following letter has been received in the office at Washington:

"Gentlemen:

When in the Sequoia National Park this year, I picked a red snow flower.

Today I learn that I should not have picked that flower.

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There were no signs anywhere and no one there told me - instead people all admired my pretty flower and none even knew its name. This - the name - I learned by seeing it pictured in colors in a San Francisco store.

Please accept my sorrow that I picked the flower, and believe me me

Faithfully yours,
Astrid Kimball

September 5, 1919
From Casa Loma
Hope Ranch
Santa Barbara, California."

GENERAL GRANT

Total travel figures for the season are as follows:

Total travel with Transportation Company	75
" " ; private	18,221
" " ; trails, all sources	354
Grand Total people - - - -	<u>18,650</u>
" " private automobiles	3,626

GRAND CANYON

Fires

Like her sister parks, Grand Canyon suffered from hot and dry weather during August, there being frequent electrical disturbances, but very little rainfall. Six small fires occurred, caused apparently by lightning but they were all extinguished before they had gained any considerable headway.

Camps

Two public camps were maintained during August, one near Grand Canyon village and one at Grand View, but no accurate check could be kept of the number of campers because of the lack of ranger service.

Water is obtained by these campers at Grand Canyon from the Santa Fe Depot, where a charge of twenty-five cents per day per family or party is made. As all the water has to be hauled by rail from Flagstaff, a distance of ninety-six miles, this charge does not seem unreasonable. Owing to the absence of water on the south rim, these are the only available camping sites. Later the superintendent intends to submit recommendations and estimates for catchment areas and cisterns to supply these and other public camps with free water.

Labor and Supply Markets

Owing to the distance from any large labor and supply markets, difficulty is being experienced in securing labor and supplies. It has been found necessary to bring men from Flagstaff, and to pay most labor \$4.00 per day.

Wild Animals

On the South Rim animals are apparently scarce. Reports from the North Rim indicate a large number of deer, some mountain sheep, and many lions. In a three day exploration trip on the North Rim a tourist reports having seen twenty "lion kills" - deer killed by mountain lions - and says few of these deer were used for food. This condition would indicate a large number of lions.

Because of the press of other business, it has been impossible for the superintendent to spare the time necessary for a trip to the North Rim. This visit is contemplated for the last week in September, at which time it is hoped to establish communication between Rims by the wireless telephone.

Travel

Automobiles entering Grand Canyon during August could not be checked because of the lack of rangers, so that only approximate travel figures can be given. The El Tovar management states that the travel for August 1919 slightly exceeds that for any similar period since 1915. Camping facilities are ample for the present, but all indications point to a great increase in travel of this sort next year.

Estimated number of campers during August	1200	
People registered at hotel and camp	<u>3839</u>	
Total -		5,039

Visitors

Among the visitors at Grand Canyon during August were:

Mary Roberts Rinehart
Robert Sterling Yard
Civil Engineer George E. Goodwin

GLACIER

Fires

It being very dry in August in Glacier, all of the fires reported on July 31st continued burning throughout the month and in addition several new ones started, some of them developing into serious fires.

The labor situation in that vicinity improved a little so that it was not quite so hard to obtain fire fighters, but much valuable forest has been destroyed and some beautiful scenery made less beautiful. The south slope of Lower Two Medicine Lake suffered very much, the fire there immediately developing into a top fire by reason of the high winds, and getting beyond control. By August 31st this fire had burned over an area of about 9000 acres, 3000 of which are inside the park. The maximum crew engaged in fighting the Two Medicine fire was about seventy-five men.

The total cost of all fires in the park up to the present time is approximately \$30,000.00. It is believed that unless there is relief by rain in the near future the total cost of fires for this season will amount to from \$40,000.00 to \$50,000.00.

The only relief from the drought of the present season was experienced between August 1st and 5th, during which time a rainfall of .894 inches was recorded.

Fish

A total of 201,000 trout fry were planted in lakes and streams on the east and west sides of the park during August; they consisted of black spotted advanced fry and rainbow trout fry.

Travel

Travel fell off from the 8,827 tourists of July to 6,901 tourists for August. The decrease was probably due for the most part to the forest fires and the poor atmospheric conditions resulting not only from the fires burning within the parks but also from smoke blown in from the many fires around it.

A slight decrease was noted in the number of tourists entering by private automobile at both the Belton and St. Mary entrances. Road conditions were not so good during August, due to the extremely dry season. The accounts of the fires raging in the park were exaggerated, so that many tourists were deterred from visiting the park.

Among the visitors to Glacier in August were Mr. LeRoy Jeffers, Secretary of the Bureau of Associated Mountaineering Clubs of North America; Mr. Horace M. Albright, Mr. Theodore Noyes, editor of the Washington Star; and Professor Walter A. Stafford, of the University of California.

On August 6th, Mr. John Kendrick Bangs visited the park. He delivered a lecture in the auditorium of the Glacier Park Station on "Devasted France".

The Brooklyn Eagle Party arrived in Glacier August 2. While there they were entertained by talks by Mr. Albright, Superintendent Payne, Professor Standley, who is making a study of the flora of the park, and who addressed them on that subject; and by Miss Bassett, a member of the party, who spoke on the geology of the park and the effect of glaciers. Mr. Davidson, a Canadian, told of the bad stretch of road between Babb and the Canadian boundary and of the cost of putting it in passable condition. The members of the party immediately took the matter up and subscribed \$1120.00 to make the needed repairs.

The first part of the document discusses the importance of maintaining accurate records of all transactions. It emphasizes that every entry should be supported by a valid receipt or invoice. This ensures transparency and allows for easy verification of the data. The text also mentions that regular audits are necessary to identify any discrepancies or errors in the accounting process.

In addition, the document highlights the need for clear communication between all parties involved. Regular meetings and reports should be held to keep everyone informed of the current financial status and any upcoming challenges. This proactive approach helps in addressing issues before they become major problems.

Furthermore, it is stressed that the accounting system should be updated regularly to reflect the latest changes in regulations and industry practices. This ensures that the organization remains compliant and that its financial reporting is accurate and reliable.

The document also provides a detailed overview of the accounting cycle, from identifying transactions to preparing financial statements. It explains how each step contributes to the overall accuracy and integrity of the financial records. Key points include the importance of double-checking entries and maintaining a clear audit trail for all transactions.

Moreover, the text discusses the role of technology in modern accounting. It notes that using accounting software can significantly reduce the risk of human error and streamline the reporting process. However, it also cautions against over-reliance on technology and stresses the importance of understanding the underlying principles of accounting.

Finally, the document concludes by reiterating the importance of ethical behavior in accounting. Accountants have a duty to provide accurate and honest information, and they should always act in the best interests of their clients and the public.

In summary, the document provides a comprehensive guide to effective accounting practices. It covers everything from basic record-keeping to advanced financial analysis, and it emphasizes the importance of accuracy, transparency, and ethical conduct throughout the entire process.

The Flower Lady

The Glacier Park Hotel Company secured the services of Miss Gertrude Norton of Salt Lake City, to gratify the desire of tourists to know the wild flowers. She spent four weeks at the Many-Glacier Hotel, identifying flowers which the tourists brought to her and taking parties out on wild flower expeditions. Her work was very popular and she was kept busy.

On August 6th, Robert Singer, a sixteen year old boy of Evanston, Illinois, swam across Lake McDonald between Lewis's Hotel and Kelly's Bay. The distance was a mile and a half and was covered in an hour and five minutes. As the water is very cold, this was quite a feat.

YELLOWSTONE

Fires

The weather conditions in Yellowstone were unusually hot and dry during the month of August so that the forest fires were unusually bad. The situation was not relieved until August 31st when there was a heavy rain, which helped conditions both inside the park and around it.

In fighting the fires in the Yellowstone, the Service was badly hampered by the fact that most of the available labor in the northwest was employed by the Forest Service in fighting big fires in western Montana and northern Idaho. They are still short of labor in the Yellowstone, but the rains are subduing the forest fires outside the park, thus releasing men for road construction work. The road crews in the Yellowstone are to be commended for fighting the fires inside the park without demanding the high wages paid outside for fire fighting. They had forty-four laborers hired especially to fight fires from August 17th to August 31st.

Fish

As a means of conserving the supply of fish in Yellowstone Lake the camping and hotel companies were prohibited by an order effective July 20th from catching fish in the park for the use of the hotels and camps. A total of 5,327 pounds of native trout were caught for supplying the hotels and camps during the season - most of them in June and July, when the fishing was fairly good. The fishing was not good during August unless people took the trouble to leave the roads and go to places where the waters had not been constantly whipped by travelers.

In August some black-spotted trout eggs were shipped out of the park, and in addition 571,800 trout fry were planted in small streams adjacent to Yellowstone Lake.

The Greater Yellowstone Project

In almost every case tourists who visited the extension area were enthusiastic over the possibilities of developing this region as a part of the park, and expressed a willingness to help advance the interests of the project in every feasible way.

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But on the other hand the people of the Jackson Hole continued their fight against the extension. They held a meeting at Jackson on August 25th to which they invited the Governor of Wyoming. The Governor invited Superintendent Albright; and Commissioner Clay Tallman of the General Land Office was also present.

During the month Mr. W. C. Gregg, of Hackensack, New Jersey, made a trip into the extension area and took what were probably the first pictures of the headwaters of the Yellowstone, a stream flowing from an enormous glacier near the Continental Divide. The people who traveled through the Upper Yellowstone country have become very much interested in the extension.

Wild Animals

The wild animals were in excellent condition throughout the month and there was plenty of good forage for the elk, deer, antelope, and mountain sheep. But owing to the drought a hard winter for the wild animals is expected. The superintendent is trying to get all the hay possible, but thus far it has been hard to secure and the prices have been exorbitant. They are also cutting all the available native grass in the park which is suitable for feed. An attempt was made to get bids for hay shipped into Yellowstone from Minnesota and other western states, believing they could ship it in for less than they could buy it in the neighborhood, but few bids have been received. It has been very dry in the Jackson Hole country and grave apprehensions are entertained for the elk in that vicinity. Their hay crop is very short there.

A Yellowstone Bear Story

The bears are always a great attraction to all visitors around the hotels and camps, but one young black bear has carried off the palm. He had climbed up a tree to a knot hole about ten feet from the ground to steal a supply of bread crusts that some red squirrels had brought from the automobile camp and stored there. He put his head into the knot hole but alas, when he was ready to withdraw it, he found himself held fast, and all his violent efforts to free himself were in vain. There he had to stay until he was chopped out. About fifty people gathered around to watch the performance, and the bear was finally rescued without injury to himself or to the rescuer. Fortunately there was a limb at a convenient place below the knot hole so that the bear could rest his weight on it, or he would have been strangled to death early in the game. So frantic were his struggles that he lost his balance several times and turned completely over. In order to protect the chopper, it was necessary to hold the bear's hind feet with ropes.

It should have been a very shamefaced little bear that was finally released from his uncomfortable position, and if it didn't completely cure him of stealing, this experience should at least teach him to beware of knot holes that aren't of goodly size.

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An Unusual Accident

An elderly man, a member of the U. S. Chamber of Commerce party, stumbled and fell into Prismatic Lake on August 16th. He was wet to the neck and was burned somewhat, but not dangerously. He was able to travel in an ambulance and left with the party in a private car on August 18th. Prismatic Lake is quite large and while it is very hot in the center, it is, of course, cooler around the edge where the accident occurred.

Travel

Travel to the park was unusually heavy during the month of August, all records for August and for the season to date having been broken. The year 1915 has been the record breaker heretofore, 51,895 people having visited the park that season. But it can no longer claim the record, 56,231 visitors having toured Yellowstone this season at the close of August.

4,410 private automobiles entered during August 1919, carrying 16,668 persons; the total for August being 25,171 visitors.

In August of 1918, 2,170 cars came into the park, carrying 8,166 persons, and the total number of visitors was 9,665.

The season's travel will exceed 60,000.

Visitors

Among the visitors to Yellowstone during August were:

Huston Thompson, Federal Trade Commissioner
Walter L. Fisher, Former Secretary of the Interior
William Hamilton Osborne, writer for the Saturday Evening Post

James Dorrance, writer for the Red Book and Munseys
Louis W. Hill, of the Great Northern Railroad
H. A. Noble, of the Glacier Park Hotel Company
LeRoy Jeffers, of the Associated Mountaineering Clubs
Famous Players-Lasky Company, taking moving pictures
The United States Chamber of Commerce party and the
Governors' party - about twenty in each party.

Park-to-Park Touring

The Transportation Company in Yellowstone now hands cards to its passengers carrying the sign of Yellowstone Park (a Yellowstone bear) and of Glacier Park (a mountain goat), and advertising the Yellowstone-Glacier automobile trip as "Geysers to Glaciers"; 365 miles to Glacier Park. Automobiles leave Mammoth Hotel, Yellowstone, for Glacier Park Hotel, Glacier, Mondays and Thursdays at 7:30 A. M., arriving Helena at 6:30 P. M., and Glacier Park Hotel 7:00 P. M. second day, driving 193 miles the first day and 197 the second. The fare is \$35.00 including war tax.

1. The first part of the document discusses the importance of maintaining accurate records of all transactions. It emphasizes that this is crucial for ensuring the integrity of the financial statements and for providing a clear audit trail. The text also mentions the need for regular reconciliations to identify any discrepancies early on.

2. The second part of the document outlines the various methods used to collect and analyze data. It describes how different types of data are gathered and how they are processed to extract meaningful insights. The text highlights the importance of using reliable data sources and the need for thorough validation of the information collected.

3. The third part of the document focuses on the analysis of the collected data. It details the various statistical techniques and models used to interpret the results. The text explains how these analyses help in identifying trends, patterns, and anomalies within the data, which are essential for making informed decisions.

4. The final part of the document discusses the application of the findings. It describes how the insights derived from the data analysis are used to inform business strategy and operational decisions. The text also mentions the importance of communicating these findings effectively to the relevant stakeholders and the need for ongoing monitoring and evaluation.

New Entrance to Yellowstone

The September number of the Colorado Highways Bulletin reports that public spirited citizens of Riverton, Wyoming, have organized a company with a capitalization of \$50,000 to build a thirty-five mile strip of the Wind River Road between Riverton and Jackson Hole, which will afford a new route to the southern entrance to Yellowstone National Park.

ROCKY MOUNTAIN

Fires

In Rocky Mountain there were several small fires during August, but they did no material damage to timber or other natural conditions. The fire hazard during August was less than earlier in the summer, because of the heavy rains the first part of the month.

Roads

The road to Lyons and Longmont, by way of the Middle St. Vrain, which was put out of commission by the disastrous cloud-bursts on July 30th, is still closed to travel. It is expected, however, that this road will be opened within the next few days, at which time the road down the Big Thompson will be closed to permit of double tracking and other extensive improvements.

Work on the Fall River Road is progressing very satisfactorily considering the shortage of labor. It is expected that this road will be completed the early part of next summer.

Wild Animals

More deer than usual at this season have been seen in the neighborhood of LongsPeak. Five deer were seen near Thunder Lake, an unusual record for Wild Basin. A few mountain sheep were seen above timber line in Glacier Gorge. There is abundant evidence that black bear are now in Mecker Basin. Grouse are fairly abundant. Several kinds of small birds have been unusually conspicuous, flocking together for fall migration.

The little fawn which was separated from the herd and run down by two young men attending the YMCA conference, and which has since been cared for by Superintendent and Mrs. Way, is now well and happy.

First Airplane in the Park

On August 8th, A. M. Lendrum and I. B. Humphreys made the first airplane flight from Denver to the Rocky Mountain National Park. The flight was successful in every way, and was made in fifty minutes.

Travel

Travel increased in the Rocky Mountain National Park during the month of August. Up to and including August 31, a total of 14,025 vehicles and 66,151 passengers, actual count, had entered the park through the Longs Peak and Estes Park entrance. The count misses approximately

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twenty per cent, due to persons coming in by way of the Devil's Gulch, or over the regular routes after the checkers have gone off duty. The figures given above do not include the Wild Basin entrance, or the Western Slope or Grand Lake entrance. Last year, for the corresponding date, the grand total of travel showed 10,756 vehicles and 51,051 passengers, an increase of approximately 35 per cent, by actual count, this year over last. During the months of July and August the weekly average was in excess of five thousand through the Estes Park and Longs Peak entrances. The record weeks for the summer were the first week in July, with a count of 1,757 vehicles and 8,061 passengers, and the last week in August, with a count of 1,242 vehicles and 6,687 passengers.

The lack of hotel accommodations has prevented thousands of people from visiting the park this season. Many of the hotels have kept a record of the number of people turned away from lack of room. This list totals 10,487 for the Longs Peak and Estes Park entrances alone, while approximately three thousand have been turned away at Grand Lake since June first.

M E S A V E R D E

Mr. Thomas Rickner, superintendent of Mesa Verde National Park, reports that the heavy rains of July made it necessary to have the entire length of the road in the park graded and dragged during August. The roads are now in good condition.

Travel

Tourist travel was very good until the latter part of August, when the number of visitors dropped. Mr. Rickner attributes this falling off to the railroad troubles. The number of people visiting the park in August was 934, as follows:

Tourists in private cars	814
" with transportation companies	102
" in wagons	11
" on horseback	6
" on foot	<u>1</u>
Total -----	934

From the Colorado Highways Bulletin for September:

"As the Bulletin goes to press many delegates from seventeen states had arrived at Durango, Colorado, for the convention of the National Old Trails Association. Standish L. Mitchell, secretary of the Automobile Association of Southern California, was in the chair for President J. M. Lowe, of Kansas City, who was East on business. Mitchell had piloted a party of several cars from Los Angeles by way of Gallup,

New Mexico. The visitors were to be entertained later by a trip into Mesa Verde National Park."

W I N D C A V E

The weather continues to be hot and dry at Wind Cave, which is favorable for tourist travel, but which is hard on the range and watering facilities.

Travel

Mr. Roy Brazell, superintendent of Wind Cave National Park, reports that there were 2,457 visitors to the Cave during August, 448 coming with the transportation concessioner and 2,009 by private conveyance. So far as he has been able to ascertain this breaks all records for the number of visitors conducted through the Cave in any one month. This unusual number, he thinks, is due in part to the advertising campaign of the Hot Springs Commercial Club, and the entertainment it has offered to visitors in that part of the Black Hills.

Camping parties are quite numerous in the park. A large proportion of the tourists carry camp equipment and do not seek accommodations at hotel.

P L A T T

Superintendent Ferris, of Platt National Park, decided to build a road, the foundations of which were laid by a former superintendent, Col. A. R. Green. The road is almost completed and is now in use as a thoroughfare. In constructing this road a good clear water spring was found, which has been walled up and cemented, thus giving the park another spring.

Almost all the parks report unusually hot and dry weather during August. Platt, however, reports a precipitation during the month of 7.24 inches, which exceeds the record rainfall for any other month since the local weather bureau was installed a year ago. The total rainfall since the first of the year is 29.92 inches.

The number of visitors to the Bromide Park during August totaled 29,325. These visitors took from the springs a total of 4,795 gallons of Bromide water, 514 gallons of Medicine, and 1,144 gallons of Sodium-chlorid. The only water shipped during the month was 135 gallons of Sodium-chlorid water. No Bromide nor Medicine waters were shipped during the month because of the scarcity of these waters and the number of visitors who had to be supplied.

THE UNIVERSITY OF CHICAGO

DEPARTMENT OF CHEMISTRY

LABORATORY REPORT

Name: _____ Date: _____

Objectives

The purpose of this experiment is to determine the molar mass of a volatile liquid by measuring the mass of a known volume of the liquid in a flask of known volume. The experiment involves heating a flask containing a volatile liquid in a boiling water bath until the liquid has completely vaporized and the flask has cooled. The mass of the condensed liquid is then measured, and the molar mass is calculated using the ideal gas law.

Procedure

Materials

Materials used in this experiment include a 125 mL Erlenmeyer flask, a boiling water bath, a balance, a thermometer, and a volatile liquid. The procedure involves heating the flask in the boiling water bath until the liquid has completely vaporized and the flask has cooled. The mass of the condensed liquid is then measured.

The results of the experiment show that the molar mass of the volatile liquid is approximately 44 g/mol. This value is consistent with the molar mass of carbon dioxide, which is 44.01 g/mol.

The experiment was conducted under the following conditions: a boiling water bath at 100°C, a flask volume of 125 mL, and a pressure of 1 atm. The results of the experiment are summarized in the table below.

Conclusion

H O T S P R I N G S

Dr. Parks, Superintendent of Hot Springs Reservation, reports that the roads on Hot Springs, West and North Mountains were gone over in August and kept grassed. All the lawns on the Reservation were given special attention, and the flowers, shrubbery and hedges were kept well trimmed and cultivated, and the grass neatly trimmed. All this makes the reservation present a very attractive appearance, and is a feature commented on by visitors.

The splendid patronage has continued during the month of August, which has necessarily added to the duties of the office in supplying the wants of the large number of people who came there for information.

Government Free Bathhouse

The average number of persons bathed daily at the Government Free Bathhouse during August was 345, which was a considerable increase over the average number bathed daily during the month of July.

T U M A C A C O R I

Mr. Frank Pinkley, custodian of the Tumacacori National Monument, in southeastern Arizona, reports that he has just made an inspection trip there from Florence, where he is located as custodian of the Casa Grande National Monument. He made the trip in the new Ford truck lately purchased for Casa Grande. He found the roads in the southern part of Arizona in fair condition, no particularly bad spots but the surface gone from some stretches so that twelve to fifteen miles an hour was all one could make in comfort. He says the range around Nogales looks well and the cattle he saw were in good condition.

Two prospectors camping in the vicinity of the mission have offered to put down a well on the monument grounds and their offer has been accepted. The present well is at some distance and is in rather bad condition. It will be a convenience to visitors to have fresh water on the grounds.

Mr. Pinkley also reports that the Tumacacori Mission ought to be roofed this year.

Z I O N

Fires

Zion National Monument has escaped any serious fires in August. One fire was discovered, caused by campers leaving burning coals, but it was extinguished before any damage was done. The weather is very dry and springs are getting low

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Game

Deer have been seen on the valley floor by some of the visitors. The deer are becoming more plentiful each month owing to the excellent grazing in the canyon. The superintendent thinks it would be a good idea to place some elk in the valley - they would be an attraction to visitors, and grass would be available for their needs.

Travel

During August the Farm Bureau had an excursion to Zion.

The number of visitors to the Monument during August was 670, as compared with 92 visitors in the same month last year.

PERSONAL NOTES.

Miss Isabel Story, secretary to the Assistant Director of the Service, has gone to Yellowstone National Park for a vacation.

Mr. John Harvey, Chief of the Mails and Files and Appointments in the Office of the Secretary of the Interior, visited Hot Springs on August 15 and 16.

Mr. P. C. Standley, of the National Museum, has returned to Washington after spending the summer in Glacier National Park, collecting material for a handbook on the flora.

Mr. W. H. Peters has been designated acting superintendent of Grand Canyon, the latest member of the national park family, which was created February, 26, 1919. He arrived at the Canyon August 11th and took over the administration of the park. Mr. Peters is an engineer of experience. He was transferred to the Service as Assistant engineer at large from the Engineer Department of the War Department, May 6, 1919. His first assignment in the Service was Yosemite, from where he was detailed to Grand Canyon.



DEPARTMENT OF THE INTERIOR
NATIONAL PARK SERVICE NEWS

No. 5

October, 1919

To the Members of the National Park Service:

This number of the National Park Service News goes out to the parks at the moment when the superintendents and concessioners are about to meet in conference with me at Denver, so I am very glad at this time to give a word of greeting to those whom I will have the privilege of meeting next week in person at the Conference. I feel sure that this Conference will be of great value to all members of the Service both at Washington and in the field. The cooperation on the part of the field force with this office has been particularly gratifying during the past summer, which has been the greatest year of travel to the parks. We must gird our loins for a still more strenuous season next year.

My trip through the parks this past season was a very edifying one. I was able to visit by automobile practically all of the parks on the Pacific Coast, having visited General Grant, the proposed Roosevelt National Park country, Yosemite, Crater Lake and Mount Rainier; while I also made short visits to Rocky Mountain and Yellowstone National Parks by railroad.

In closing I want to let the Service know how much I appreciate the fine work that was done by Superintendent Lewis of Yosemite and Acting Superintendent Peters of Grand Canyon in entertaining their majesties, the King and Queen of the Belgians, who visited these two parks during the last month, and whose interesting accounts of these visits will appear in the next new bulletin. The impression made on his majesty was so great that we are informed by the Belgian Embassy here that he is considering the establishment of a national park in Belgium, operated along the lines of our own.

With greetings to all members of the Service,

Cordially yours,

STEPHEN T. MATHER,

Director.



Forest Fires of Spontaneous Origin

It is usually assumed that forest fires when not the result of a stroke of lightning are the result of carelessness on the part of lumbermen, campers, picnickers, or wayfarers. A French scientist, M. G. Raymond, denies this and furnishes several interesting hypotheses in a brief article in *La Nature* (Paris) to account for spontaneous fires.

He notes first that such fires always occur under the same conditions; namely, when the weather is dry, hot and windy. He considers it entirely possible that the dry and resinous branches of a pine forest might develop enough friction in a high, hot wind to strike fire, the cause being analogous to the method in which savages obtain fire by the use of a fire stick.

Again, minute drops of resin spherical in form might act as lenses to bring the sun's rays to a focus, thus setting fire to inflammable materials around them.

A third suggestion is that since the ground of a pine forest covered with needles and other decomposing matter often acquires a very high degree of heat in the summer months, often a temperature several degrees above 100 degrees Fahrenheit, there might result catalytic effects in the presence of resinous substances. (From the *Scientific American*)

Motion Pictures from Airplanes.

A motion picture permit has been issued to the International Film Service Company, Inc., of New York to take scenic motion pictures of the national parks from airplanes. The Air Service has been asked to cooperate in the taking of these pictures.

The Native Mammals of Australia.

The following, taken from the news letter of the Smithsonian Institution, causes one to wonder if Australia has any reservations in which the wild animals may find a refuge as they do in our national parks.

The extract is from the report of Mr. Charles M. Hoy, who has been sent to Australia by the generosity of Dr. W. L. Abbott to collect the fast disappearing native mammals and birds.

"The extermination of the native mammals has apparently gone much farther than is generally thought. Many species that were plentiful only a few years ago are now almost, if not altogether extinct. The greatest agent working toward the extermination of the native mammals is the fox; next comes the cattle and sheep men who distribute poison by the cartload in the effort to reduce the rabbits. This has also caused or helped to cause the extermination of some of the ground inhabiting birds. Another great agent is the bush fires which sweep over the country. These are often lit intentionally to clear out the undergrowth and thus increase the grass. Owing to the great increase in the price of rabbit skins and the consequent increase in trappers

1947

The first part of the report deals with the general situation in the country. It is noted that the economy is in a state of depression, and that the government is facing a serious financial crisis. The report also discusses the political situation, and the role of the military in the government.

The second part of the report deals with the specific situation in the city. It is noted that the city is in a state of chaos, and that the population is suffering from severe shortages of food and clothing. The report also discusses the role of the police in the city, and the impact of the military on the civilian population.

The third part of the report deals with the future of the country. It is noted that the country is in a state of transition, and that the government is facing a difficult task. The report also discusses the role of the military in the future, and the impact of the military on the civilian population.

CONCLUSION

The situation in the country is very serious.

It is hoped that the government will take prompt action to deal with the crisis. The military should be used to maintain order, but not to oppress the civilian population.

RECOMMENDATIONS

The following recommendations are made:

1. The government should take immediate steps to stabilize the economy. This includes reducing government spending, and increasing revenue.

2. The government should take steps to improve the distribution of food and clothing. This includes setting up a rationing system, and increasing production.

3. The government should take steps to improve the political situation. This includes holding free and fair elections, and ensuring that the military is under civilian control.

4. The military should be used to maintain order, but not to oppress the civilian population.

the rabbits are fast ceasing to be a pest, and in some sections have become quite scarce. The foxes, which are everywhere, after killing off the native mammals, are now turning to the rabbits, which also helps in their reduction.

"Disease has also played a great part in the extermination. The native bear died in thousands from a disease which produced a great bony growth on their heads. A mysterious disease also spread through the ranks of the native cat, Dasyurus viverrinus; the domestic cat also played a great part in their extermination. Even adult specimens of Dasyurus were often dragged in by the family cat.

Praise in a Complaint Letter.

A complaint letter which fills nine typewritten pages about the hotel and transportation companies in case of our parks closes thus:

"I believe we have in our National Parks a very great opportunity to foster certain qualities of quiet and love of nature that seem much needed in the haste of our life.

"In closing let me express my admiration for the evidently great regard for safety and comfort in the work on the roads, and too my appreciation of the fine, courteous type of men who were on duty in the Ranger Service."

Appreciation of our Efforts

Another letter - not one of complaint this time - contains the following:

"During the past summer I was a member of the Travel Club Conservation Tour and visited seven of the parks. It was a delightful trip and most enjoyable.

"Early in the season we were at Rocky Mountain Park where Superintendent Way gave us a very delightful, informal talk. Afterwards I had the pleasure of a long talk with him. He is very enthusiastic about the park, as you doubtless know. He told us of the large portion that is inaccessible because the small appropriation necessarily restricts development.

"I am sure you will be pleased to know how much everybody enjoys all of the parks, and how much those who have visited them appreciate your efforts in their behalf.

"We from the east do not realize until we get there and see it how many, many people come to the parks and camp. Nor do we realize the invigorating power of the combination of altitude, atmosphere, and scenery, with rest and freedom from worry, until we have felt it.

"But this is much longer than I intended and quite unbusinesslike so I must close, after repeating that I appreciate your efforts at providing and improving playgrounds for children - both small and grown up, and I'll gladly do whatever I can to assist".

New Park Legislation.

A bill to make the Zion National Monument into the Zion National Park has passed both the Senate and the House of Representatives, and is now in conference to adjust some minor amendments. Zion is in every way worthy to become a member of the National Park family.

M O U N T R A I N I E R

Weather Conditions

The first snowfall at Paradise Valley was September 27, when about two inches fell, but melted the next day. It snowed again at Paradise Valley on September 30th.

Nisqually Glacier

Measurements taken of the lower terminus of the glacier indicate a recession this year of about 50 feet. This is about the average rate of recession per year during the past generation, or since 1892.

Concessions

The directors of the Rainier National Park Company have authorized the construction of foundations and other preliminary work for two buildings that are to be erected next year. One is to be a camp building, replacing the buildings on the ridge above Paradise Inn, and the other is to be a club house containing an auditorium, guide room and club rooms.

The National Park Inn, at Longmire Springs, closed on September 15.

The Standard Oil Service station closed on September 25.

Special Visitors.

The U. S. Biological Survey party, which has been working in the park under the direction of Dr. W. T. Taylor, during July, August and September, collecting material for a publication on the birds and mammals of the park, completed its field work, which included a complete circuit of the mountain. Dr. Taylor left the park on September 30.

Mr. George E. Goodwin, Civil Engineer, National Park Service, visited Mount Rainier on September 2 to 4, inspecting the Nisqually and Carbon River districts.

Travel

Travel figures for September and for the year to date follow. The Labor Day travel was reported last month.

<u>Year</u>	<u>September</u>	<u>Jan. 1 to Sept. 30</u>
1919	5301	54,655
1918	<u>8324</u>	<u>43,771</u>
Decrease for September	3023	10,884 Increase for
Percentage increase		year, 25% for the
		year.

The decrease during September is due to the fact that the Sunday preceding Labor Day was August 31 this year, while last year it was September 1.

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The heavy travel on that day was included in the August report this year, while last year it fell in September. The number of visitors on that day last year was 3700, and this year it was 3761.

C R A T E R L A K E

Weather

Snow began to fall September 4 and continued very stormy with snow every day to include September 9. About three inches remained on the ground and impeded travel to some extent until September 11, after which date there was fine weather until the 30th, when another severe snow storm set in.

Fish

Fishing continued good during the entire season. On September 20, twenty-five thousand young rainbow trout were planted in the lake.

Game

Deer were plentiful this year and were very tame. The last snow storm had driven them to the lower levels and out of the park where they are being killed off. There was never known to be so many bears as this season. They have visited the camps daily and waited to be fed. They broke into the meat house on several occasions during the day and it was found necessary to incase it with barb wire. The bears were quite an attraction to the tourists. Mr. Sparrow, the superintendent of the park, expresses the hope that the bears will hole up in the park, for if they go to the lower levels for the winter he fears they be easily slaughtered, as they are so tame.

Travel

The snow storm of September 4 interfered with travel for a few days, after which it was about normal for the rest of the month.

Travel figures follow:

	Visitors	Automobiles
Travel for the month	2341	715
Travel to date	15,336	4,448
" " same date 1918	<u>12,378</u>	<u>2,936</u>
Gain over last year	3,958	1,462

Y O S E M I T E

Roads

All of the roads showed distinctly the effects of the exceedingly heavy travel and with few exceptions they were all probably more cut up than in any previous year for some time past. A two days rain beginning on the 28th of the month was an exceedingly great help and now that it is over all of the roads are in as good, if not better, shape than at any time during the season.

The new Mirrow Lake road, twenty feet in width, of easy grades, is now practically completed. It is a great improvement over the present almost impassable road to the Lake, and Mr. Lewis feels sure that it will be appre-



ciated by motorists when open to travel next spring.

Winter Ranger Force

In a paragraph in which he gives the names of the permanent ranger force and outlines his plans for their winter employment, Mr. Lewis says:

"The ranger force which comes in such direct contact with the people is generally considered by the public in the light of an encyclopedia of information on all subjects, and I have always maintained that the successful ranger should be more or less a jack of all trades and should be able to give assistance and advice under any and all conditions and on as many subjects as possible. As a result of the great increase in automobile travel and the constant requests that are made to the men for assistance on the roads, I feel that it is particularly necessary that each man should have a general idea of the operation of automobiles. To give them this knowledge is my principal reason for planning to give them as much time as possible in the machine shop during the winter.

Fish

During the month a total of 118,590 fish were planted in various lakes and streams in the park.

The planting of fish from the Yosemite Hatchery has been exceedingly successful, some 350,000 having been planted during the season. The planting of all these fish, particularly if it can be continued from year to year, will in time result in stocking the waters of the park to the extent that there should be a sufficient supply for all visitors who desire to fish, and it would indeed be a shame if the plans that have been under consideration for the past two years cannot be carried out and a permanent fish hatchery established.

Game

Deer seem to be exceedingly plentiful throughout the park and this is especially noticeable on the floor of the Valley where there seems to be more than usual.

Although open season on deer has prevailed outside of the park since August 15th, so far as could be ascertained hunters have not met with a great amount of success. The deer on account of the mildness of the season have kept well to the high country with the result that apparently comparatively few are drifting outside of the park. In fact it almost seems that the deer know they are protected within the park boundary and although numerous herds graze within comparatively short distances of the boundary, one sees comparatively few once the park line is crossed.

Travel

During the month a total of 2,806 people entered the park, of which 2,081 came in 630 private cars, 696 hauled by the transportation companies, and 129 by walking, driving, etc. Of the above amount 489 people were returned from Crane Flat and Aspen Valley in 152 return cars.

The railroad strike which took place during the latter part of August seems to have had a permanent effect on travel as there has been no tendency for travel to increase following the settlement of the strike. There has, however, been a relatively steady flow of travel but the flow was much lighter than was anticipated. Another factor that probably has contributed much to the falling off of the travel has been the condition of the roads, principally of those roads leading to the park, but also to some extent of those within the park boundary. The rain at the end of the month has put



all of these roads in much better condition than at any time during the season, and if weather conditions continue good in all probability October travel will be heavier than usual.

With the close of the month of September all camps and hotels were closed except the Sentinel Hotel on the floor of the Valley and the old Glacier Point Hotel, which is still receiving guests.

Zoo.

During the early part of the month the building on which work has been going on for the past year to be utilized as a zoo, was completed and the three lion cubs were transferred to it. At first the two Rocky Mountain lions were separated from the Yosemite lion. Shortly after transferring the animals, however, the female of the Rocky Mountain lion died from unknown causes, and shortly afterwards the Yosemite lion was turned in with the remaining Rocky Mountain lion.

The skin of the dead lion was preserved and has been prepared for mounting. The work will be done by Chief Ranger Townsley when time permits during the coming winter.

After considerable difficulty two black bears have been secured, one this year's cub and the other a yearling, both of which have been placed in the cage and are doing nicely.

Arrests.

Between 8.00 and 9.00 p. m. on September 11, two men stopped at the El Capitan checking station on the floor of the Yosemite Valley, in a Hudson roadster, and inquired the road to Yosemite Valley. Ranger William Heim told them that they would have to secure a permit for their automobile to enter the park, and proceeded to make one out. Upon asking for the fee of \$5.00 the applicant who gave the name of E. Wallis, stated he didn't have any money. Ranger Heim informed him that he could not proceed or leave the park without payment of the fee, and the young fellow stated that he would go out to the car and talk to his partner about it. When he got to the car, Ranger Heim heard them starting the car and ran out and jumped on the running board and warned them that they could not leave. He ordered them to back the car to his station while he telephoned for instructions. This they did, but as Heim was about to step off the car and enter the cabin, one of the men stepped out on the opposite side of the car, drew a revolver and called to the other man to come with him, and keeping Heim covered until they reached the brush, they quickly disappeared.

Ranger Heim telephoned the Ranger's office and within fifteen minutes Chief Ranger F. S. Townsley and Ranger Clyde Boothe were on their trail. They tracked the two men up through the rocks and timber and brush in the vicinity of Ribbon Falls on the west side of El Capitan. When they reached the granite boulders near the upper end of the talus it was impossible to follow the trail. The rangers were sure they had their men cornered, and placed a cordon of rangers around the lower end of the pocket and stationed three rangers on top of the cliff.

That evening, no further evidence of the two men having been seen, the rangers who had been out for the past twenty-four hours with no sleep and little water, were withdrawn, leaving a small detachment on the lookout. In the night, the two fugitives worked their way down out of the timber and to the river where they got water, and then walked on up the road to Yosemite Village. Here they stole food supplies from the residence of Mrs. John Wegner by entering the back porch. Then going to the residence of Electrician



S. H. Cookson, they took his Ford roadster which was standing in front of the house and pushed it down the road about 150 yards before starting the engine. Then they got in and started up, making a break for liberty.

As they passed the El Capitan checking station on their way out, Ranger Heim was awakened, and he immediately telephoned to the rangers and reported the car which failed to check out. Ranger George McFarlane at Crane Flat was ordered to stop the car and investigate. Armed with a double-barrel shot gun, he waited until the car appeared and ordered them to stop. They refused to do so and speeded up their car. McFarlane promptly shot the tire off one of the hind wheels and they both ducked and stopped the car. McFarlane ordered them to back up, and one of the men jumping from the machine ran back with a revolver in his hand, threatening to shoot. McFarlane covered him with his shotgun and ordered him to drop his revolver, which the outlaw did. McFarlane promptly placed both men under arrest and held them until Chief Ranger Townsley came out and got them and turned them over to the sheriff.

The Hudson roadster which they abandoned the first night, was found to have been stolen from the owner D. W. Wallis of Los Banos. They also admitted stealing a Ford touring car near Denver. They gave their names as Ray Foster and Howard Weeks, aged 19 and 18 years, respectively, and their residence as Central City, Nebraska.

The boys were prosecuted in Merced County, and given an indeterminate sentence of from one to twelve years.

The Ranger Service has reason to be proud of the results of this affair, as it developed that these boys had been trailed by the police for a month or six weeks from Colorado to California.

S E Q U O I A

Weather

Light precipitation of about one inch fell over the entire park area on the 29th and 30th of September, with snowfall above the 5,500 foot level. Those persons who were camped at the Giant Forest Camp had an opportunity to experience the beauties of a warm mountain snow storm, and all seemed to enjoy it. Many Californians who were there had never before come in contact with a snow storm.

Game

Deer and bear are very numerous and quite tame.

Travel

Travel continued about the same during the month of September. The following are the travel figures:

	Cars	People
Transportation Company	289
Private Automobiles	3,819	27077
Other travel, trails, all sources.....	<u>2116</u>
Total -	<u>3,819</u>	<u>29,482</u>

G E N E R A L G R A N T

Because of inability to secure labor, no improvements were accomplished in General Grant National Park during the month of September.



Travel

Travel continued heavy throughout the month.

Travel figures follow:

	Cars	People
Transportation Company.....		142
Private Automobiles.....	3,335	20793
Other travel, trails, all sources;		<u>412</u>
Total -	<u>3,335</u>	<u>21347</u>

G R A N D C A N Y O N

Fish

The following is an excerpt from the report of Acting Superintendent Peters:

"While unable to visit the north rim during September, the Acting Superintendent crossed the Colorado, and made a short trip through Bright Angel Canyon. In this Canyon flows Bright Angel Creek (so named by Major Powell for its contrast to Dirty Devil Creek, which he had named a day or two before).

It is believed possible to stock this stream with trout, unless future explorations prove it to be subject to floods from occasional "cloud-bursts."

In the Colorado and some of its tributary streams in the Grand Canyon are found the following species of fish:

- Bony tail, Humpback or Gila trout (Gila Elegans)
- Small cat fish
- White fish or White Salmon
- Humpback suckers
- Carp

None of these are game fish and abound mostly in the Colorado itself, making fishing difficult and uninteresting. More extensive acquaintanceship with the Park may result in the discovery of streams suitable for trout stocking, but these streams will of necessity be on the north side of the canyon.

It is believed that at a comparatively small expense an artificial lake could be built near Grand Canyon Village (on the south rim) which would support bass and pickerel or other game fish whose existence does not demand fresh, running water. Allocation for this lake has been tentatively selected and later an estimate of the cost of the necessary dam, excavation and stocking will be submitted."

1. The first part of the document discusses the importance of maintaining accurate records of all transactions and activities. It emphasizes the need for transparency and accountability in financial reporting.

2. The second part of the document outlines the various methods and techniques used to collect and analyze data. It includes a detailed description of the experimental procedures and the tools used for data collection.

3. The third part of the document presents the results of the study, including a comparison of the different methods and techniques used. It also discusses the implications of the findings and the potential for future research.

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9. The ninth part of the document discusses the broader context of the study, including the impact of the findings on the field of research. It also addresses the ethical considerations and the limitations of the study.

Travel

The figures below give the travel during September :

Persons using public camps	1090	
Automobile travelers registering at hotels ..	240	
Travelers arriving by train	3550	
Total -		4880

Travel was slightly less in September than in August, and the difference is in the number of campers. This is due to the cold weather and high wind experienced during the last week of the month.

North Rim of Grand Canyon

Mr. John Willy, editor of the Hotel Monthly, made an automobile trip to the north rim of Grand Canyon during September, starting from Salt Lake and going over the Arrowhead Trail as far as Nephi, eighty-three miles; then leaving the Arrowhead and taking the old Marysvale Road, now called the Yellowstone-Grand Canyon Highway, which is the most direct route from Salt Lake City to Grand Canyon. A start has been made to build a concrete highway from Salt Lake City to St. George, Utah, a distance of three hundred miles, to make the Arrowhead trail between these points one of the best in America.

The road then led through Marysvale and Panguitch, where a side trip was made to Bryce's Canyon, twenty-five miles distant, on a spur from the Yellowstone-Grand Canyon Highway. Mr. Willy reports Bryce Canyon as Grand Canyon in miniature, except that its formations are of infinite variety and carry the semblance of things animate. The colorings are more varied and fascinating than those of any other canyon.

Mr. Willy stayed at the Wiley camp at Bright Angel Point on the north rim. He states in his article in the October number of the Hotel Monthly that since seeing sunset from Hopi Point on the south rim of the Canyon a few years ago the Grand Canyon has been a magnet to him and has drawn him back for the third time - that it will continue to draw him as long as he shall live.

G L A C I E R

Weather

During the first ten days of the month a general rainfall was recorded throughout the park. As a result of this rain, the most of the fires were put out sufficiently to enable the superintendent to reduce the crews greatly. The atmosphere was also cleared of most of the smoke, and climatic conditions were generally greatly relieved.

On the 26th slight snow flurries occurred over the western portion of the park. On the east side, however, this storm assumed larger proportions and in places as much as two feet of snow fell.

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Fish

September second 6,000 black spotted trout fry from the fish hatchery at Glacier Park Station were planted in the waters of Halloway Lake; and on September fourth 8,000 black spotted trout fry were planted in the waters of Midvale Creek.

Due to the approaching cold weather, it was found advisable to close the fish hatchery for the season on September 3d. Generally speaking, the past season has been very successful in so far as this hatchery is concerned - all fry turned out being in excellent condition.

Game

On two or three trips into the remote sections of the park taken during the month of September, the superintendent noticed that all game appeared in excellent condition, especially as regards the deer and the mountain sheep. Large bands of sheep were seen in the Kennedy Creek and Belly River sections and many deer are to be found grazing along the foot hills in the North Fork country. Effort is being made to lay by stores of hay at the ranger's stations most suitable for feeding game during the winter so that in case of heavy snows, it will be on hand for feeding the game should browse become scarce.

On September first, Mr. E. F. Averill, predatory animal inspector under the Biological Survey, visited the west side of the park and inspected conditions preparatory to employing one or two hunters to trap predatory animals during the coming fall and winter. Mr. Averill stated that he planned to put at least one hunter at work in the North Fork country just as soon as a competent man could be secured.

With the approach of the hunting season, Mr. Payne thinks it will probably be necessary to employ several temporary patrols on the western and southern boundaries of the park to guard against poaching.

Forest Fires

At the close of the month, all of the fires in the park were practically out, with the exception of one or two guarded by small patrol crews. General showers fell during the first part of the month and again during the latter part - the last rain being followed by snow in most sections. This had tended to practically remove the fire hazard for the remainder of this year.

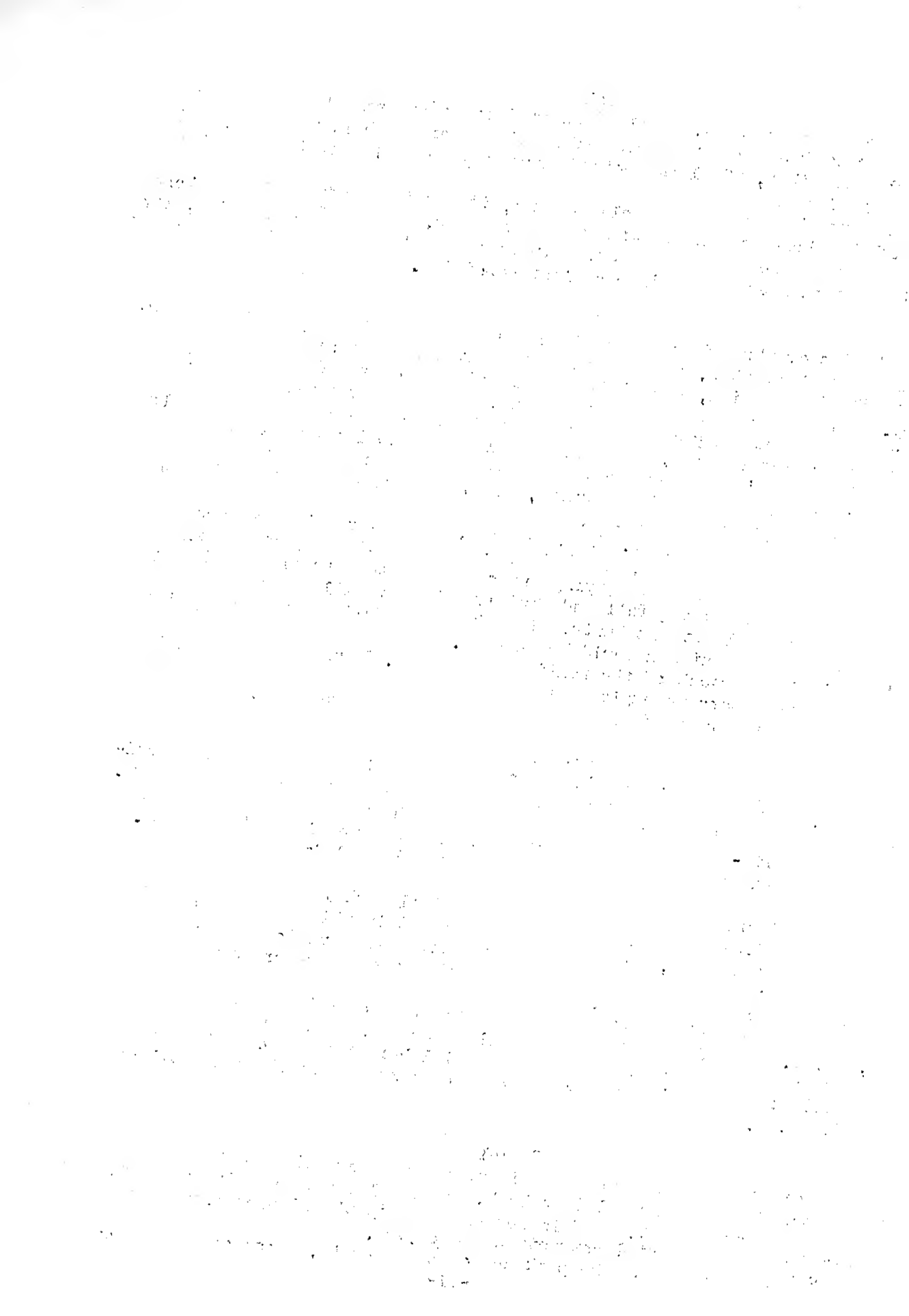
A small crew has been retained for patrol work in the Two Medicine fire. The fire is considered practically out in this district inside of the park boundaries, but several spot fires continue to burn on the reservation and it has been deemed advisable to keep the crews in the vicinity for any emergencies.

The total cost of all fires in the park to date has been approximately \$46,000.00. Added to this amount will be certain bills that have not been presented, as well as some additional labor charges for patrol crews that will probably bring the total cost to somewhere in the neighborhood of \$47,000.00.

Travel

There was a marked decrease in visitors during that part of the tourist season from September 1st to 15th, the total number of visitors entering the park numbering 1010. This number added to the figures previously reported brings the total entrants up to 18,956.

V visitors entering the park up to September 15, close of the season:



via Glacier Park Transportation Company	441
" private automobiles	397
" horseback .;.....	1
" mail stages	50
" boat from Waterton Lakes Park, Canada	<u>111</u>
Total -	1010

Labor Conditions

Owing to the scarcity of labor and the wages offered for men engaged on all classes of work, it was necessary to make an increase of 40 cents per day on all labor, to take effect October 1st.

YELLOWSTONE

General Conditions

Rain fell in quantities on eleven different days well distributed throughout the month. The total precipitation was equal to 2.51 inches. There was 7.9 inches of snow during the month. The total is about double the average precipitation for the month of September, based on a record of thirty years, and only one September during that time, when 2.85 inches of moisture were recorded, has exceeded this record. The snowfall of 7.9 inches beats the September record for thirty years.

Following a period of three months with scarcely any rain whatever with a consequent epidemic of forest fires of considerable size, this rain and snow were most welcome. But it came too late to mend much of the damage done to the winter range for stock and wild animals, though the grass in the mountains did revive to some extent.

Travel

The heavy travel of the previous months kept up well during September. The season for rail tourists closed on September 20, and hotels, permanent camps, the bath-house at Upper Basin, and the picture shops closed on that date. The general stores at Mammoth Hot Springs and Upper Geyser Basin remained open throughout the month, to accommodate private automobile travel, which continued to the end of September. The total travel for the month, 62,261, is beyond any prediction, and beats any previous year's travel (51,895 in 1915) by about 20 per cent. A notable fact in connection with private automobile travel is that of about 40,000 coming to the park in their own cars, about 25 per cent were from the state of Montana.

The roads in the park remained in good condition to the end of the season, and complaints in regard to them were rarely heard.

Travel figures for the month of September, and for September 1917 and 1918 are shown for comparison in the following tables:

		Travel for the month of September		Total visitors
		Private transportation	By rail	
	Cars	Visitors		
1919	780	2796	1646	4442
1918	400	1876	265	2132
1917	496	1946	1271	3217

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Wild Animals

The wild animals are all in fine condition. The unusual rains and snow storms brought them down in larger numbers than they ordinarily come in September, and elk, deer and antelope were frequently seen along the road by tourists. Alfalfa hay to the extent of about 470 tons was purchased, the price ranging from \$24 to \$26 per ton in stack near the feeding grounds, to \$32 per ton baled. This, with about 400 tons already on hand, will be several times as much as ever before available for feeding wild animals, and it is hoped will be sufficient for their needs.

Bears frequented the hotel and camp dump grounds, and since the hotels and camps closed, and most of their food supply cut off, have become more of a nuisance than ever.

Buffalo: Nothing was seen of the wild herd during the month. The tame herd was kept on the flats on Lamar River and in the adjoining hills. Six calves were born during the month, making a total of 88 calves born this season, of which 50 were males and 38 females.

Fish

Fishing was fairly good in streams and lakes away from the automobile roads, although but few take the trouble to go there. A statement was received from the Yellowstone Park Camping Company to the effect that they took a total of 2,164 pounds of fish from park waters to supply the camps. These were taken in June and July, and, of course, were inadequate to supply the full needs. A carload of Rainbow and Eastern Brook trout fry and fingerlings, furnished by the Bozeman, Montana, branch of the United States Fish Hatchery, were planted in park waters during the month.

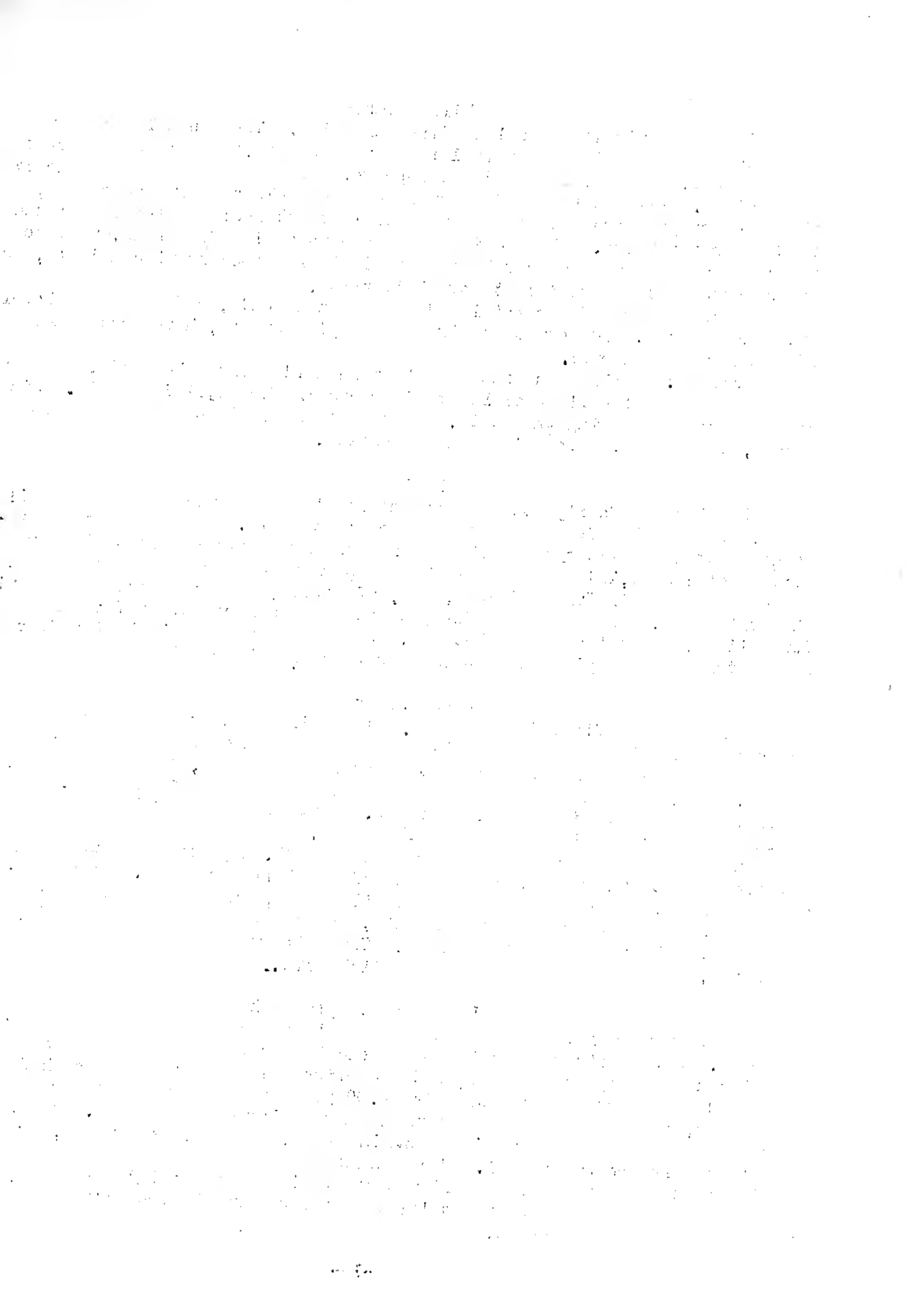
Forest Fires

On September first fires were still burning in a number of places; but heavy rains had them practically extinguished, and the men who had been fighting them were being returned to their work on roads, telephone lines, trails, etc., as rapidly as could be done with the transportation had. No further trouble was given by these fires. Two fires of considerable magnitude broke out the latter part of September.

One of these fires occurred on September 28, high in the mountains, not far from Fawn Pass, between Fawn Creek and the Gallatin River. It was extensive enough to be seen from several miles away, but before the rangers who were sent to locate it arrived there, the heavy snow came on and they did not find it necessary to continue. This fire was remote from any sort of travel, and was doubtless caused by lightning.

Labor and Supply Markets

There was no particular change in the labor conditions in and around the park. Difficulty was still experienced in securing the services of enough men to carry on the work, and the price paid for common labor had to be raised September 12 from \$3.76 to \$4.00 per day, and skilled labor in proportion, in order to keep the men already employed in the park. Agents were sent to Salt Lake City, Utah, and Missoula, Montana, to get men, but they were none too successful. The concessioners encountered the same difficulties, though in their case it was not so important to hold the help, as they were prepared to begin to lay them off as travel gradually dwindled toward the end of the season.



Policies

No absolutely new policies have been adopted, but the policy of permitting dogs in the park under any conditions, and permitting hunting parties to pass through over trails, has been thoroughly discussed from all angles, and orders issued tending to limit these practices to the least possible, necessary to prevent extreme inconvenience, or actual hardship.

Special Visitors

Director Mather visited the park officially from September 8 to September 12, inclusive.

Mr. G. E. Goodwin, Civil Engineer, National Park Service, arrived on September 14 to assist in preparation of estimates of all national parks.

Miss Elizabeth Frazer, writer for the Saturday Evening Post, spent several days in the park, beginning September 14. She was shown all over the park, and visited the Buffalo Farm and the Jackson Hole country.

Mr. Charles P. Punchard, Jr., Landscapè Engineer, National Park Service, was in Yellowstone from September 17 to 23, to take up certain landscape features in connection with improvements in the park.

Dr. Nicholas Murray Butler, President of Columbia College, visited the park from September 7 to 10.

The Famous Players Lasky Company, of New York, whose presence in the park was reported in the August report, finished their work and departed.

THE JACKSON HOLE COUNTRY

(By Hon. Clay Tallman)

The Jackson Hole Country is an area of roughly a million acres lying in western Wyoming just south of Yellowstone National Park. In years past, this region has been chiefly known to the outside world as a rendezvous for horse thieves and a place to hunt big game. It is still remote from railroads, and in the winter time is pretty much shut in- it has a telephone connection with the outside, however, and we were informed that during the war the high points in the war dispatches were 'phoned in, whereupon, the local exchange would, at a given signal, repeat the news to all connecting phones at once. The local residents were interested, too, for this frontier country furnished more than its quota of young men for the war.

In the main, Jackson Hole has been and is now a cattle country, for which it is ideal. In general, it consists of a valley along the upper reaches of Snake River, surrounded by high ranges of the Rockies, chief among which, from the standpoint of scenic grandeur, is the Grand Tetons. At the upper, or northerly end of this valley, is Jackson Lake, practically

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at the head of Snake River; the United States Reclamation Service has made this lake into a storage reservoir of over 600,000 acre-feet capacity for irrigation use in southern Idaho; this reservoir is one of the most practicable from the standpoint of capacity and cost of any in the country.

The casual observer would naturally think that such a place as Jackson Hole could present but few administrative problems of difficulties for the State or Federal Government; on the contrary, it presents several, the chief factors of which are the following;

(a) A proposed extension of Yellowstone National Park to the south, to include the principal portions of the Grand Tetons and a large area to the south and east of the park for scenic attractions, and to afford a natural boundary for the home of the elk.

(b) A proposed use of Leigh Lake and Jenny Lake at the foot of the Grand Tetons for storage for a Carey Act irrigation project, the use of which lakes for storage reservoirs beyond certain limits might impair their value from the standpoint of use for park purposes.

(c) Inter-state claims for water for irrigation; there is a possible use of some of the water of the Snake River drainage in Wyoming, but the use thereof may interfere with the water supply claimed and appropriated for use in Idaho.

(d) The Elk; the last large herd of elk in the United States have their summer range in the Park and adjoining territory and their winter range partly in the area proposed to be added to the park, and partly in the area farther south. It is here that the Department of Agriculture conducts a hay farm to provide winter feed for large herds of elk and thus prevent their destruction by starvation.

(e) The attitude of the people of Jackson Valley; they are quite generally opposed to the park extension, primarily because they want the territory for open cattle range; they profess to favor the preservation of the elk but not at the expense of their cattle business, either present or prospective.

These are some of the differences and conflicting interests that must be adjusted and harmonized with due regard to the importance of each. Surely the Grand Tetons, towering 14,000 feet high, straight up from a base plane of an altitude of about 6,500 feet, with their perpetual glaciers hanging over the beautiful lakes at the base of the mountains, constituting mountain scenery probably unsurpassed in the United States, should be made open and accessible to all the people; surely the last great herds of elk must be preserved and increased; consistent with these ends, the best utilization of the grazing and water resources should prevail.

(From the Land Service Bulletin)

1. The first part of the document discusses the importance of maintaining accurate records of all transactions and activities. It emphasizes that proper record-keeping is essential for transparency and accountability, particularly in financial matters. This section also touches upon the legal implications of failing to maintain such records, which can lead to severe penalties and legal consequences.

2. The second part of the document focuses on the role of technology in modern record-keeping. It highlights how digital tools and software solutions have revolutionized the way data is stored, accessed, and managed. This section discusses the benefits of cloud storage, data encryption, and automated backup systems, as well as the potential risks associated with digital data, such as cyberattacks and data loss.

3. The third part of the document addresses the challenges of data security and privacy. It explores various threats, including phishing, malware, and insider threats, and provides practical advice on how to mitigate these risks. This section also discusses the importance of regular security audits and the implementation of robust access control policies to protect sensitive information.

4. The fourth part of the document discusses the importance of data backup and recovery. It explains how regular backups can ensure that data is preserved in the event of a disaster or system failure. This section also covers the different types of backup strategies, such as full, incremental, and differential backups, and provides guidance on how to test and restore data from backups.

5. The fifth part of the document focuses on the legal and regulatory aspects of record-keeping. It discusses the requirements of various laws and regulations, such as the General Data Protection Regulation (GDPR) and the Health Insurance Portability and Accountability Act (HIPAA). This section also provides information on the retention periods for different types of records and the consequences of non-compliance with these regulations.

6. The sixth part of the document discusses the importance of data governance and the role of a data governance framework. It explains how a well-defined framework can help organizations manage their data assets effectively, ensuring that data is used in a consistent and compliant manner. This section also discusses the key components of a data governance framework, including data ownership, data quality, and data lifecycle management.

7. The seventh part of the document discusses the importance of data literacy and the role of training and education. It explains how data literacy is essential for making informed decisions based on data and for understanding the implications of data analysis. This section also provides information on the different types of data literacy training and the importance of ongoing education in this field.

8. The eighth part of the document discusses the importance of data ethics and the role of a data ethics framework. It explains how a data ethics framework can help organizations ensure that their data practices are fair, transparent, and respectful of individual privacy. This section also discusses the key principles of data ethics, such as transparency, accountability, and respect for autonomy, and provides guidance on how to implement a data ethics framework.

9. The ninth part of the document discusses the importance of data innovation and the role of emerging technologies. It explores the potential of artificial intelligence, machine learning, and blockchain in transforming data management and analysis. This section also discusses the challenges of data innovation, such as the need for skilled talent and the potential for bias and discrimination in AI systems.

10. The tenth part of the document discusses the importance of data collaboration and the role of data sharing. It explains how data sharing can lead to new insights and discoveries, but it also highlights the risks of data sharing, such as data breaches and loss of control over data. This section also provides information on the different types of data sharing arrangements and the importance of clear data sharing agreements.

ROCKY MOUNTAIN

Weather

The weather in Rocky Mountain National Park was generally fair during September, with frequent showers to heavy rains and one show fall of four inches, on September 21st.

Fires

Only one fire was reported this month, in Hallowell Park, caused by fire jumping right of way on new road that is being cleared. About one half acre of brush was burned by the time the park rangers arrived, but the fire was promptly extinguished.

Fish

Fishing conditions have been fair on the eastern and western slopes. The following fish were planted from the Estes Park Hatchery: 50,000 in Fall River; 20,000 in Glacier Creek, 20,000 in Cow Creek. All were native trout.

Wild Animals

Deer, elk and sheep are coming down from the higher altitudes, and are in very good condition. Many bear have been reported, one breaking into the kitchen at Bald Pate Inn. More mountain lions have been reported this year than ever before. Superintendent Way is making arrangements to get lion dogs and is starting an intensive campaign against predatory animals this winter.

Roads and Trails

The North St. Vrain Road to Lyons was opened to travel on September 10th, and on that date the Big Thompson road was closed to traffic, and work was begun on double tracking, which is expected to be completed by June 1, 1920.

Work on the Fall River Road has progressed very satisfactorily, but it is expected that weather conditions will soon put a stop to this work.

Travel

There has been a gradual falling off of travel during the month, the latter part of the month seeing practically the close of the season. The figures for the month follow:

	Autos	People
For week ending Sept. 7	680	3374
" " " " 14	478	2363
" " " " 21	475	2365
" " " " 28	149	803
	<u>1,782</u>	<u>8,905</u>

Checkers were not employed after September 26. With two or three exceptions the hotels in the Park were closed at the end of the month.

MESA VERDE

Weather

Very little rain fell during the month of September, and the roads

THE HISTORY OF THE

REIGN OF KING CHARLES THE FIRST

BY JOHN BURNET

IN TWO VOLUMES

LONDON: Printed and Sold by J. BARNARD, at the Crown and Anchor in St. Dunstons Church-yard, 1724.

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are in very good condition.

Archaeological Work

Dr. J. Walter Fewkes, Chief of the Bureau of Ethnology, Smithsonian Institution, who has done a great deal of archaeological work in the Mesa Verde National Park and other historic ruins of the southwest, has finished his work for this year; but he expects to return to Mesa Verde early in the summer of 1920. Square Tower House is now in fine shape and the trail to reach it is safe for all. The ruin is a fine one and attracts much attention. A very old type of building was unearthed on the mesa above Square Tower House and Dr. Fewkes considers it one of the most valuable finds, from an archaeological standpoint, that has yet been made. He calls it Pit House A, and says it represents the earliest type of building yet discovered in that section of the country.

Travel

Tourist travel fell off during the month of September, though weather conditions were very good.

The number of people visiting the park during the month was as follows:

Tourists in private cars	305	
" in C. R. Beer's cars.....	45	
" on horseback	4	
	Total -	354

W I N D C A V E

Travel

There were 860 visitors to the Cave during the month of September, 213 of them coming with the transportation concessioner and 647 coming by private conveyances. This is nearly three times the number of visitors handled in the month of September 1918, and exceeds by 102 the number conducted through the Cave in June of this year. This heavy travel for the month was beyond all expectations, as September is generally a very poor month for visitors. An unusually heavy run of tourists for October is expected.

Wild Animals

The bird life of the park does not appear to have been molested. Grouse are very plentiful and quite tame.

Skunks are becoming very numerous and are quite a pest. Five or six were shot or trapped during the month.

H O T S P R I N G S

Dr. William P. Parks, superintendent of the Hot Springs Reservation reports that the patronage during the month of September exceeded that of the same month in any preceding year. The total number of visitors is conservatively estimated at 9,860.

The average number of persons bathed daily at the Government Free bath house during the month was 302, a slight decrease from the number bathed daily during August.

1. The first part of the document discusses the importance of maintaining accurate records of all transactions. It emphasizes that proper record-keeping is essential for the integrity of the financial system and for the ability to detect and prevent fraud. The text notes that without reliable records, it would be difficult to verify the accuracy of financial statements and to identify any irregularities.

2. The second part of the document outlines the specific procedures that should be followed when recording transactions. It details the steps for identifying the parties involved, the nature of the transaction, the amount, and the date. The text also discusses the importance of obtaining proper authorization and documentation for each transaction, as well as the need to review and reconcile records regularly to ensure their accuracy.

3. The third part of the document addresses the challenges associated with record-keeping in a complex and rapidly changing environment. It highlights the need for clear communication and coordination between different departments and individuals involved in the process. The text also discusses the importance of staying up-to-date on relevant regulations and standards, and the need to invest in appropriate technology and training to support effective record-keeping practices.

4. The fourth part of the document provides a summary of the key points discussed and offers some final thoughts on the importance of record-keeping. It reiterates that accurate records are the foundation of a sound financial system and that everyone involved in the process has a responsibility to ensure their accuracy and integrity.

5. The final part of the document includes a list of references and a list of appendices. The references cite various sources of information used in the document, including books, articles, and government publications. The appendices provide additional information and data related to the topics discussed in the main text.

New Truck

The new two-ton Nash Quad truck, has been equipped with a new bed, and will be put in commission during October, which will greatly facilitate the work of distributing gravel over the mountain roads.

PLATT

Weather

September was the only month during the year when they did not have more than an inch of rain.

The park is experiencing an early fall. Usually the month of September is considered one of the warmest months of the year there, but this year it has been cool enough for fires on some days.

New Fountain

Superintendent Ferris sends in the following report:

"Relative to the fountain near the Bromide, I desire to say that a citizen of the town who brought in a fine well producing mineral water which seems to be a combination of the Bromide and Sulphur, and which is just outside the park limits, entered into a five-year agreement with me to furnish an inch flow for a fountain in the Bromide park. The citizens furnished the greater part of the pipe and I agreed to build the fountain, which has been done. It is comprised of a large circular cement basin with a revolving spray in the center which lets the water go from the pipe into the basin. This is quite an attraction in this portion of the park and is much appreciated by visitors."

Elk and Buffalo

Mr. Ferris also reports that the citizens are preparing to meet the expenses of transporting the elk and buffalo from Yellowstone National Park and from the Wichita Forest Reserve, and that he has been getting a pasture ready to receive them.

CASA GRANDE NATIONAL MONUMENT.

Weather

The weather was fairly good over the southern part of Arizona during September. The roads are in normal condition and more than the usual amount of fall and winter overland tourists are expected.

Travel

During the month of September there were 363 visitors and 138 automobiles in the Casa Grande reservation. This number compares well with the same month last year when there were 117 visitors and 50 automobiles - almost three times as many this year. It also compares well with August, when there were 264 visitors and 152 automobiles. The cooler weather prevailing in September helped to raise the number of visitors; but the increase over the same month last year shows that the monument is getting more widely known.

TUMACACORI

Travel

The number of visitors to the Tumacacori Mission during September was well up to the average.

Preservation of the Church

Custodian Pinkley still hopes to secure an appropriation for the roofing of the mission before the winter sets in.

Z I O N

Wild Animals

Game birds were seen in abundance on the western rim in September, particularly blue grouse.

Deer are also frequently noticed on the upper plateaus of the monument, with plenty of signs of them on the Valley floor. Utah has an open season on deer from the first to the tenth of November, and Custodian Ruesch fears that hunters will reach within the boundaries of the monument in their search for game. He will, therefore, keep a sharp lookout during the hunting season.

Travel

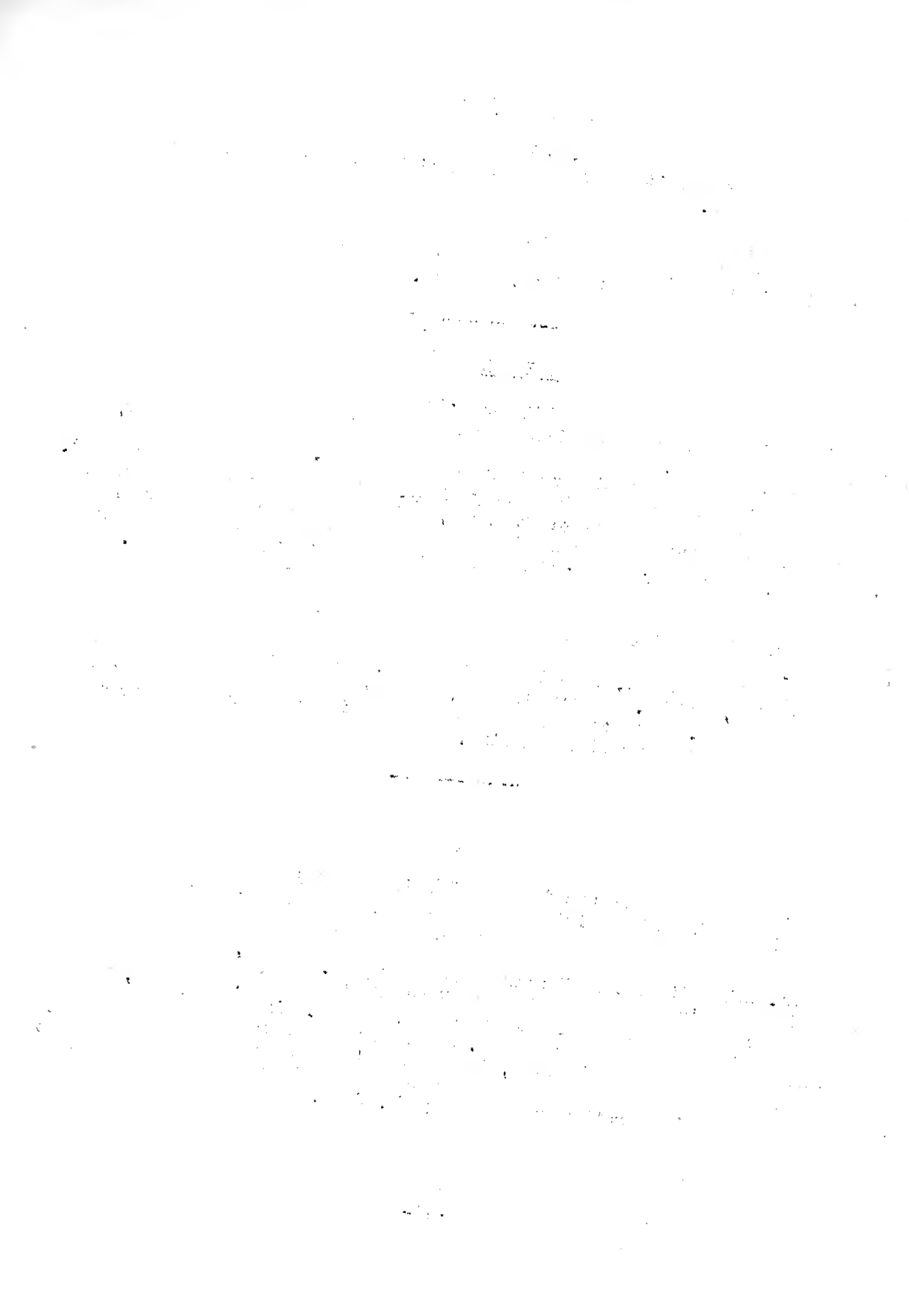
During the month of September there were 213 visitors registered in the monument.

Among them were Mr. Robert Sterling Yard, secretary of the National Parks Association, and Mr. Herbert Gleason, special inspector of the Department of the Interior. Both of them were most enthusiastic over the beautiful rock formations and their varied coloring.

PERSONAL NOTES

Director Mather returned to the Washington office about the middle of September from his official visit to the parks. He was much pleased with his inspection and greatly enjoyed the trip.

Mr. Ralph Linton, of Harvard University, Dr. Fewkes's assistant during this season's excavations in Mesa Verde National Park, Colorado, was a recent visitor to the Smithsonian Institution. Mr. Linton called to examine the several collections made by Neil M. Judd, curator of the division of American Archaeology of the Smithsonian, in western Utah and to gain information that will enable him to compare a newly discovered adobe ruin in Mesa Verde with others of similar construction uncovered by Mr. Judd.



News Items

If anything especially interesting for the news happens in your park or monument, please let us know about it. Address your communication to the Director of the National Park Service, "National Park Service News". It will help the Service.

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DEPARTMENT OF THE INTERIOR
NATIONAL PARK SERVICE NEWS

No. 6

November and December 1919

To the Members of the National Park Service:

Some poet once said something about the best-laid plans of mice and men oftentimes going wrong. Only I think he used the words "gang agley." So it was with our November issue of the NEWS. We were so busy that we laid it off from day to day, and suddenly the holidays were upon us with the December issue becoming due. The November issue, however, will not be omitted. Instead we are combining both in one. Our editor is now working on the January number, which will reach you more promptly.

This brings me to what I wished to cover in this number. The great bulk of the items in the NEWS is gleaned from the information transmitted in the monthly reports of the Superintendents and Custodians. We want the NEWS to be a live and snappy sheet, full of information that will not only be interesting but useful, not only to those in the field but also in the Washington office. What we would like is to have each Superintendent and Custodian, bear this in mind, and send in to us interesting items that can be edited and made available. The editor will give you a paragraph regarding this in the January NEWS.

There will also be a paragraph on a new feature we are installing in the Washington office. It consists of a file of detailed information on every park and monument, available at a moment's notice, not only for the men in the field but for the hundreds of thousands of people who are continually making inquiries about the history, characteristics and other features of our great scenic possessions.

ARNO B. CAMMERER

Acting Director.

THE UNIVERSITY OF CHICAGO

PH.D. THESIS

BY

DR. [Name]

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CHICAGO, ILLINOIS

ROYAL VISITORS FROM BELGIUM

King, Queen and Crown Prince Visit Yosemite and Grand Canyon.

Eat Luncheon Under the Big Redwoods, Climb, Ride
Horseback and Enjoy the Great Outdoors.

- - - - -

During their recent visit to our country their Majesties the King and Queen of the Belgians and the Crown Prince spent a few days in two of our national parks - - Yosemite and Grand Canyon. Accompanying them were the American Ambassador and Mrs. Brand Whitlock and some fifty others. Superintendent Lewis's report of the Yosemite trip follows here-
with -

"In accordance with instructions I proceeded to Santa Barbara, arriving there on Sunday, the twelfth of October, where I got in touch with Mr. J. M. Nye, Chief of Special Agents, Department of State, and who is in charge of the party, and made quite definite arrangements with him for the proposed visit. The arrangements made were that the party would reach El Portal at nine a.m. on the 15th, proceed to Yosemite Village and thence around the floor of the Valley, returning to the Sentinel Hotel for lunch at noon. It was then planned to drive to Glacier Point in the afternoon, spending the night there and visiting the Mariposa Grove of Big Trees on the following day, returning to El Portal for departure from there at six o'clock that evening. This schedule was followed out exactly as planned with the exception that some sixteen members of the party, including the King and Queen, made the trip from Yosemite to Glacier Point on horseback rather than by automobile, and the Crown Prince instead of going direct to Glacier Point from the Valley, was outfitted with a camping outfit and camped over at Bridal Veil Creek on the Glacier Point Road on the night of the 15th.

The party consisted of about sixty people including twelve servants, the principal members of the party in addition to the King and Queen and the Crown Prince, being the Count D'Oultremont, Adjutant of the Court; Baron de Cartier de Marchienne, Belgian Ambassador of the United States; Countess Chislaine de Charaman-Chimay, lady in waiting to her Majesty; Lieutenant General Baron Jacques, commander of the 3rd Division; Colonel Tilkens of the General Staff, aid de camp to his Majesty; Lieutenant of Cavalry Goffinet, Officer of Ordinance to His Majesty; Lieutenant Colonel Nolf, physician to their Majesties; Max Leo Gerard, secretary to his Majesty, and Charles Graux, secretary to her Majesty; and the American representatives consisting of Brand Whitlock, American Ambassador to Belgium, and Mrs. Whitlock; Major General William M. Wright; Rear Admiral Andrew T. Long; Colonel Patterson, aide to General Wright, and Jefferson Gaffery, Secretary of the American

THE UNIVERSITY OF CHICAGO
 DEPARTMENT OF CHEMISTRY
 LABORATORY OF ORGANIC CHEMISTRY
 CHICAGO, ILLINOIS 60637

This report describes the synthesis of a series of
 substituted benzene derivatives. The starting material
 was benzene, which was subjected to a series of
 reactions to produce the desired products. The
 reaction conditions were carefully controlled to
 ensure high yields and purity of the products.

The first step in the synthesis was the
 nitration of benzene. This was achieved by
 reacting benzene with a mixture of concentrated
 nitric acid and concentrated sulfuric acid at
 room temperature for 24 hours. The resulting
 nitrobenzene was purified by distillation and
 its identity confirmed by infrared and
 mass spectral analysis.

In the next step, nitrobenzene was
 reduced to aniline using iron filings and
 hydrochloric acid. The reduction was carried
 out in a refluxing mixture of ethanol and
 hydrochloric acid. The resulting aniline was
 purified by distillation and its identity
 confirmed by infrared and mass spectral
 analysis.

Finally, aniline was acetylated to
 produce N-phenylacetamide. This was
 achieved by reacting aniline with acetic
 anhydride and triethylamine in dichloro-
 methane at room temperature. The resulting
 N-phenylacetamide was purified by
 distillation and its identity confirmed by
 infrared and mass spectral analysis.

The overall yield of N-phenylacetamide
 from benzene was approximately 60%. The
 purity of the final product was determined
 to be greater than 99% by high-resolution
 mass spectrometry. The physical and
 chemical properties of the products were
 compared with those reported in the
 literature to confirm their identities.

The synthesis of these substituted benzene
 derivatives is a classic example of
 aromatic substitution reactions. The
 reactions described here are fundamental
 to the synthesis of many pharmaceuticals
 and industrial materials.

Embassy.

The train was somewhat late in reaching El Portal but the party started for the Valley shortly after ten o'clock and proceeded to and around the Valley as per schedule, taking in the various points of interest including the fish hatchery at Happy Isles, (in which, by the way, we have had about 25,000 golden trout which had just been received from the State Fish and Game Commission), and the lion and bear cages. In these latter her Majesty was particularly interested and appeared to derive a considerable amount of pleasure in having an opportunity to go into the cage and pet the California lion. In fact all through the trip the Queen was particularly interested in the animals and trees and flowers, rather more so perhaps than in the scenery. Mr. Punchard accompanied the Queen's car and it is needless to say she kept him pretty busy answering questions. Lunch was served promptly at noon at the Sentinel Hotel and by half past one the party had started for Glacier Point, the King and Queen and some fourteen or fifteen others choosing to go by horse back over the Short Trail. On this trip and also after reaching Glacier Point the King's particular interest seemed to be towards climbing, and at Union Point spent considerable time climbing up and down the rather dangerous cliffs at that point.

At Glacier Point, in spite of the fact that up to three days before the arrival of the party the hotel had been closed and everything completely dismantled and stored away, by the time the party arrived there it had all the appearance of having been continuously open and everything was in first class shape. Considerable credit is due to Mr. Farrow and Mr. Sell for the promptness with which they reopened the hotel and had everything ship shape and ready for the guests. The only thing to mar the stay at Glacier Point was the water shortage, the supply giving out to the extent that it was impossible to get water above the first and second floor of the hotel. This, however, was not serious and did not in any way seem to detract from the party's pleasure.

Promptly at 8:30 on the morning of the 16th the party proceeded to the Mariposa Grove where a picnic lunch was served at 12:30. The lunch prepared at the Sentinel Hotel left the Valley for the Grove at 7:00 in the morning and at the Grove Mr. Sovulewski and Ranger Lloyd took charge of making the coffee and seeing that everybody was well served. The entire party seemed deeply impressed with the Big Trees, the King time and again remarking that they were the most wonderful thing he had ever seen.

Leaving the Big Trees promptly at two o'clock, a few minutes stop was made at Wawona and the King's car reached El Portal at exactly 5:30. I made the stop at Wawona more or less

for political reasons and to satisfy the Washburn people who I know felt somewhat slighted because the party did not stop for lunch instead of going to the Big Trees. This, as a matter of fact, was my original plan and was given up solely at the special request of the King, made to me at Santa Barbara that a picnic lunch be served at the Grove. This feature I explained to the Washburns and having had, nevertheless, the opportunity to personally meet the King I believe all were quite satisfied.

Twelve automobiles including my own were utilized for transporting the party and on each of the principal cars I placed one of our men, Mr. Punchard on the Queen's car, Ranger Hall on that of the Crown Prince, Ranger Wegner on that of the American and Belgium Ambassadors, and I drove the King's car myself. On the trail trip from Yosemite to Glacier Point Ranger Wegner and Lloyd and myself accompanied the party while Ranger Nelson took charge of the camping party of the Crown Prince, and on the second day, as before stated, Mr. Sovulewski and Ranger Lloyd looked after the matter of preparing the lunch in the Big Trees. At the Big Trees Ranger Rich who is stationed on patrolling duty there also gave every assistance to the party. I tried to get Rangers Skelton and Boothe into the Valley for the occasion also but was unable to get in touch with them in time, both being far out in the mountains at the time. Too much credit cannot be given all of the men for their efforts. Every man was assigned a particular work to do and in no case was there an instant's delay, everything going off like clock work, and not only the King but Ambassador Whitlock and many others of the party time and again commented on the efficient and courteous manner in which the men acted on all occasions.

Equal credit is due Mr. Farrow, Mr. Sell, and Mrs. Cook in the very efficient way in which they handled their part of the program, everything working smoothly at all times, absolutely without delay or confusion. A party of that size is generally unwieldy to handle and I never have seen one handled with less delay and confusion than was the case in this instance. To be sure when it is considered that these twelve cars traveled between 1800 and 2000 miles without a moments delay for repairs, we must recognize that luck was with us, Nevertheless all of the rest said still holds."

From Yosemite National Park the party proceeded to the Grand Canyon National Park, where the Belgian colors mingled with the American flag in waving a welcome. We will let Acting Superintendent Peters tell the rest of the story -

The first part of the report deals with the general situation of the country and the position of the various groups. It is a very general and superficial treatment of the subject, but it is a good starting point for a more detailed study. The second part of the report is a detailed study of the various groups and their activities. It is a very thorough and well-documented study, and it is a valuable contribution to the knowledge of the subject.

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"When word was received of the intention of the Royal Party to spend October 18th at Grand Canyon National Park, full preparations were made for their comfort and entertainment. I immediately got in touch with Mr. J. M. Nye, Chief Special Agent of the Royal Party, as did Mr. Brant, Manager of the El Tovar, and Mr. Nye through Mr. Brant, asked that arrangements be made as simple as possible and only the plainest of food served, and that they desired to see as much of the Grand Canyon as possible in the short time.

I, then, with Mr. Townsley's help, drafted the enclosed suggested program, which I handed to Mr. Nye, upon his arrival. These suggestions were adopted and the program followed without change, except that during the afternoon the Crown Prince accompanied by Ranger White made a horseback trip along the rim from Village to Hermit's Rest, and between five and six, the King and his Court Adjutant accompanied by Ranger Townsley and myself, walked down the Bright Angel Trail to a point about seven hundred feet below the Rim. I believe this was the hour of the day most enjoyed by his Majesty. He is an enthusiastic walker and nature lover, asked for the names of all the flowers noticed on his walk, and was with difficulty restrained from climbing a thirty foot limestone cliff.

At Grand View Point Their Majesties required a complete Geological history of the Canyon and took several pictures of the wonderful view this point affords. They asked many questions and took great interest in everything pointed out and explained. The entire party climbed down the trail a short distance to "Suicide Rock," and spent probably a half hour there. On the return trip "Thor's Hammar" was visited. Returning from Grand View an informal reception was held in the El Tovar and many of the local people as well as other distinguished guests were presented to the King and Queen.

Luncheon was served in the El Tovar dining room.

During the Hermit Rim Drive stops were made at Powell Memorial, Hopi Point, Mohave Point and Pima Point. Tea was served at the Hermit's Rest and the Royal Party driven back to the El Tovar arriving at 4 P.M.

At 4:05 P. M., through the courtesy of Manager Spencer of the Hopi House and "Jimmy" Swinnerton, the cartoonist, an Indian Dance was held, at the conclusion of which, I presented, upon his Majesty's request, "Big Jim" second Chief of the Hava Supais, who received the honor with exactly the dignity and sang froid to be expected from one ruler of men, greeting another.

After the Indian Dance a visit was made through the Hopi House, at the conclusion of which the walk down the Bright Angel Trail was made.

1

The first part of the document discusses the importance of maintaining accurate records of all transactions. It emphasizes that proper record-keeping is essential for the integrity of the financial system and for the ability to detect and prevent fraud. The text also mentions the need for regular audits and the role of independent auditors in ensuring the reliability of the financial statements.

The second part of the document focuses on the role of the central bank in maintaining the stability of the financial system. It discusses the central bank's responsibilities in regulating the banking industry, managing the money supply, and acting as a lender of last resort. The text also mentions the central bank's role in promoting financial inclusion and supporting economic growth.

The third part of the document discusses the importance of financial literacy and the role of financial education in promoting sound financial decision-making. It mentions the need for governments and financial institutions to provide accessible and relevant financial education programs to the public. The text also mentions the role of financial literacy in reducing poverty and improving the overall well-being of individuals and communities.

The fourth part of the document discusses the importance of financial innovation and the role of fintech in transforming the financial industry. It mentions the need for regulators to adapt to the challenges posed by fintech and to ensure that the financial system remains safe and sound. The text also mentions the potential of fintech to improve financial services and to increase financial inclusion.

The fifth part of the document discusses the importance of financial stability and the role of international organizations in promoting global financial stability. It mentions the need for countries to cooperate and to share information in order to prevent and manage financial crises. The text also mentions the role of international organizations in providing technical assistance and in monitoring global financial risks.

Probably the most enjoyable part of the day was the evening trip to Hopi Point to view the sunset. Favorably, a few dark clouds on the Western horizon made the necessary cloud reflections and the Canyon filled with a deep purple haze. I had had some fear of delaying the Royal Party beyond their schedule departure, but they only left when the last reflection was gone and the Royal Special did not depart until 8 P. M., one hour late.

Just before the departure His Majesty decorated Ranger Marbois with the Belgium Croix de Guerre with palm, and presented to Rangers Townsley and White the Order of Leopold, and to me, The Order of the Crown. His Majesty thanked me for the "efficient arrangements and splendid program" and was pleased to comment favorably upon our "fine organization of mounted rangers". The entire Royal Party displayed much interest in the work of the Service and many references were made to the enjoyable day spent in Yosemite.

About two thousand people visited the park on this day.

Too much credit cannot be given our Rangers for their display of courtesy and efficiency, and I wish especially to commend Rangers Townsley and White for their invaluable assistance and advice.

Messrs. Brant, Hubbell and Spencer cooperated with me splendidly and deserve much credit for the success of the visit."

It was a pleasure to receive these reports; the team work and cooperation of all gave a thrill and inspiration to the Washington office, and also brought the assurance that our field forces are ever ready for any emergency - even to entertaining royalty.

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YELLOWSTONE

Weather.

Most unusual weather conditions prevailed here in October, and the month was one of severity. Except for one or two brief periods the temperature was below normal for the entire month. Midwinter conditions prevailed the latter half of the month, with almost daily snowstorms. The storm of the 22-23rd which yielded 15 inches of snow was not only unprecedented for October but with the exception of January 18, 1895, it is the greatest amount of snowfall for any one storm in 32 years' record, while the total for the month - 26.6 - is nearly 20 per cent greater than the normal for January, the month of the heaviest snowfall.

Travel.

All roads were passable up to Oct. 22, but travel was light and consisted principally of concessioners making improvements to camps, hotels, stores, etc., in the upper park. A few tourists entered, and there were a few hunting parties enroute to Jackson Hole, Wyo. or Henry's Lake, Ida., who were permitted to pass through with their automobiles, sealed firearms and trophies, as this was the nearest route and sometimes the only thoroughfare.

Labor and supply markets.

Because of uncertain weather and depletion of funds there was no demand for labor or purchase of supplies during the month. The concessioners who had begun improvements and repairs report the price of building materials as excessive, which with the present high price of labor makes building almost prohibitive, at the present time.

Wild Animals.

The storms of the month placed the elk herds in the gravest peril. The grass on the ranges was stunted and burned during the past summer. By October 28 several hundred head of elk had left the park, most of them going out in the vicinity of Crevice Gulch. Many of them were killed immediately upon leaving the park boundary. Acting Chief Ranger McBride reports that there are now approximately 3,000 head on Crevice Creek which will probably leave the park. Two large herds left the park at the mouth of Bear Creek. In order to stop the drifting of the elk out of the park the feeding of hay was begun. The worst feature of this drift of the elk is that all of the animals that are not killed by hunters, who came from all over the state of Montana, will probably starve to death, as there is no feed for them in the forest north of the park. The range in the Absaroka National Forest was almost destroyed during the summer drought, and what little grass was not burned was eaten by sheep and cattle. The Forest Service is without funds to provide the necessary patrols for protecting the elk in the Absaroka National Forest. It is probable that between

1000 and 1500 head of elk had left the park by November 1. Montana game wardens were among the first to come to Gardiner for the purpose of killing elk and deer.

Bears have gone into winter quarters. The usual herd of mountain sheep came down to Gardiner Canyon after the storm.

Policies.

A policy inaugurated during the month provides that no game meat shall be brought into the park for consumption there.

Special Visitors.

A. J. Lucier, International Film Service, on October 7, to get moving pictures of tame buffalo during process of vaccination.

G L A C I E R

Weather.

On October 20 snow began falling in many portions of the park and by the close of the month the storm made it necessary to close down most of the work. Indications are that a severe winter has begun, with a depth of 6.5 inches of snow.

Forest Fires.

All fires were out by the 10th of the month and the crews returned to road and trail work.

Trails.

A small crew was engaged in maintenance work on the Lake McDonald East Side trail during the greater part of the month. This represented practically the only trail maintenance work done during October.

Y O S E M I T E

Roads.

By the end of the month maintenance work had been stopped on all of the roads in the park except the El Portal Road, the roads on the floor of the Valley and a few days work necessary to complete the ditching of the Wawona Road. All outside road work has been discontinued until Spring. On account of the cold weather in the high country the

erection of the road house and barn at Eleven Mile station have been postponed temporarily.

Travel.

During the month 724 persons entered the park, of which 254 came in 83 private automobiles, and 470 by automobile stage. These figures compare favorably with former years, but the snow storm near the end of September did much to curtail private automobile travel. The September storm instead of damaging and closing the roads as most people expected, improved them greatly, and during October they were as good as at any time during the season. This together with the cool weather made October the best month of the season for automobile travel.

Fish.

On October 11th a shipment of 24,000 golden trout was received from the Fish and Game Commission. After staying at the hatchery for two or three days the fish were taken to the small streams and lakes on the north slope of Mount Clark and planted.

Animals.

During the month, under the supervision of Ranger Adair, assisted by Rangers Lloyd and Nelson, some 700 pounds of poison barley were distributed to exterminate ground squirrels, as they had grown so destructive. The work was not confined to any one part of the Valley but distributed from Mirror Lake to Pohono Bridge with gratifying results.

M O U N T R A I N I E R.

Weather.

The first snow of the season fell at Longmire Springs and the Park entrance on October 22, followed by several more storms during the month. At Longmire Springs the fall for the month was 2 inches, at Narada 8 inches and in Paradise Valley 24 inches. There was but seven clear days during the month. Maximum temperature, 74, minimum 20.

Travel.

During the month there were 383 visitors to the park, being 136 more than for October 1918. For the entire season the number is 55,038; the 1918 total number is 44,018, an increase of 11,020, representing an increase of 25 per cent.

1. The first part of the document discusses the importance of maintaining accurate records of all transactions and activities. It emphasizes that proper record-keeping is essential for transparency and accountability, particularly in financial reporting and compliance with regulatory requirements. The text notes that without reliable records, organizations may face significant challenges in identifying discrepancies, resolving disputes, and demonstrating their adherence to applicable laws and standards.

2. The second section focuses on the role of internal controls in preventing fraud and errors. It highlights that a robust system of internal controls is not only a defensive mechanism but also a tool for improving operational efficiency and risk management. Key elements of an effective internal control system include segregation of duties, authorization procedures, and regular monitoring and review. The document stresses that these controls should be tailored to the specific risks and objectives of the organization.

3. The third part of the document addresses the importance of communication and collaboration in achieving organizational goals. It argues that clear communication channels and a culture of open collaboration are vital for ensuring that all team members are aligned with the organization's mission and vision. This section also discusses the benefits of regular meetings, reports, and feedback loops in fostering a sense of ownership and commitment among employees.

4. The final section discusses the impact of technology on modern business operations. It notes that while technology offers numerous opportunities for innovation and growth, it also introduces new risks and challenges, such as data security and privacy concerns. Organizations must therefore invest in robust cybersecurity measures and ensure that their IT systems are secure, reliable, and compliant with relevant regulations. The document concludes by emphasizing that a proactive approach to technology management is essential for long-term success in a competitive market.

General.

The Superintendent's headquarters were moved from Longmire Springs to the Park entrance on October 21.

Paradise Inn was closed to visitors on October 8.

October is the month of open season in the state of Washington, and park rangers were kept at Carbon River, White River and Ohanapcosh stations to patrol the park and prevent hunting. Beginning October 12 permits were refused for carrying firearms through the park. More deer have been killed in this vicinity than for several seasons past, as they have been driven out of the park by early snows. Superintendent Tell thinks that in order to protect the deer which are in the park during the summer season, a game sanctuary should be established for several miles in width on each side of the park. This strip should include most of the winter grazing grounds of the deer. Under present conditions game will never become plentiful enough to be frequently seen by visitors or become a feature of the park.

ROCKY MOUNTAIN

Weather.

The weather was variable; rather stormy for the season. Snowfall was 30 inches; temperature maximum 66, minimum 10.

Roads and Trails.

The Big Thompson road has been closed to travel on account of reconstruction work. All the other approach roads with the exception of the South St. Vrain, which was closed to all but horse travel because of snow, were open for travel.

Travel.

No accurate record of visitors was kept, but the estimated figures are, automobiles 70, passengers 300.

Wild Animals.

Deer were seen frequently along the Fall River road, along Mill Creek road, in Tuxedo park, on Deer Mountain and in the Wind River Basin. Comparison of records and reports kept by one of the rangers show that the fall migration of birds was from one to two weeks earlier than usual.

H O T S P R I N G S

Estimated travel into Hot Springs during October was 9,752. The average number of persons bathed daily at the Government Free Bathhouse was 268. Heavy rains during the month retarded maintenance and improvements.



S E Q U O I A

The mean temperature at Giant Forest camp during the month was 52.1; there was about a half inch of rainfall accompanied by snow in the high altitudes.

Travel up to the 15th held up fairly good. The total number of visitors for the season is 31,822; the number of private automobiles 3,876. Deer and bear were very numerous and in excellent condition. The park was officially closed on October 10.



G E N E R A L G R A N T

The park was officially closed on October 10. Visitors for the season were 21, 815; number of automobiles 3,376. The mean temperature at the park headquarters for the month was 51.2, which is about normal.



W I N D C A V E

General.

There were 242 visitors to the Cave during the month, 163 coming by private conveyances. This is an increase over the corresponding month of the past three years. Skunks gave a little bother, but the trap and shot gun were exterminating them. Ducks and other water fowl stopped a few days enroute south.

Weather.

On October 18 there was an unusually heavy snow for the season, about 2 feet falling during the night, accompanied by a thaw which made the roads nearly impassable.



P L A T T

Rain during the month exceeded that of any month since the

Section 1

The first part of the document discusses the importance of maintaining accurate records and the role of the auditor in ensuring the integrity of the financial statements.

Section 2

Introduction

This section provides an overview of the audit process, including the objectives, scope, and the responsibilities of the auditor. It also discusses the importance of communication and the role of the audit committee.

Section 3

Planning the Audit

The planning phase is crucial for the success of the audit. It involves understanding the client's business, identifying risks, and developing an audit strategy. Key factors include the nature of the business, the complexity of the transactions, and the quality of internal controls.

Section 4

Execution of the Audit

Sampling

Sampling is a key technique used in the execution of the audit. It allows the auditor to test a representative portion of the population to draw conclusions about the entire population. The selection of samples should be random and unbiased.

Documentation

Proper documentation is essential for the audit process. It provides evidence of the work performed, the results of the tests, and the conclusions reached. The documentation should be clear, concise, and easy to understand.

Section 5

Conclusion

The audit process is a complex and demanding task that requires a high level of professional judgment and attention to detail. The auditor's role is to provide an independent and objective assessment of the financial statements.

local bureau was established. As the total rainfall since January 1, 1919 was nearly 39 inches, it revives the hopes that Antelope and Buffalo Springs may resume their flow, as they have been dry since January 1918.

Superintendent Ferris has contracted with a local citizen to furnish an inch flow of mineral water for a fountain in Bromide park. The citizens of Sulphur furnished the greater part of the pipe, and the superintendent built the fountain. It has a large circular cement basin with a revolving spray in the center which lets the water go from the pipe into the basin. This is quite an attraction to that portion of the park and is much appreciated by visitors.

The citizens are preparing to meet the expense of transporting some elk and buffalo from Yellowstone National Park and from the Wichita Forest Reserve, and Superintendent Ferris is preparing pasture for them.

GRAND CANYON.

Weather.

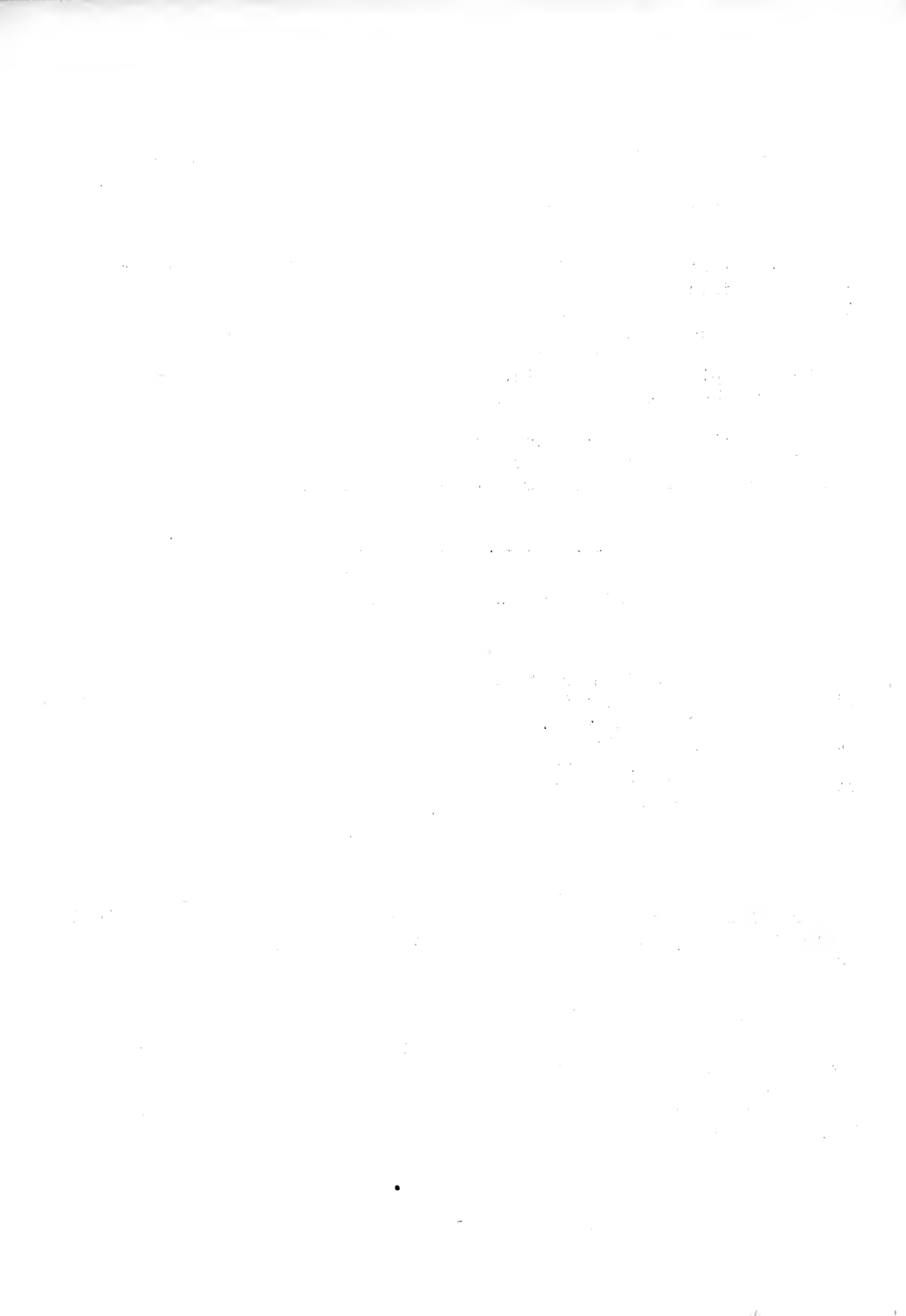
During most of the month of October the weather on the South rim was cool and clear, this probably being the most pleasant month for visitors throughout the year. On the North rim several snow flurries occurred and one snow storm closed the north rim in the vicinity of Bright Angel Point with a fall of 2 feet. One severe rain and sleet storm on the South rim completely obscured the Canyon for three days and badly damaged the Desert View road.

Travel.

There were 4,471 visitors to the Canyon during October, of which number 1,111 came in 340 automobiles. Two public camps were maintained during the month, one near Grand Canyon village, and the other at Grand View.

Labor and Supply

Labor and supply are still the most difficult problems confronting the park management. For a few days work was almost at a standstill. A thorough search of neighboring towns brought some results, but with the completion of harvests and roundups the situation was expected to improve.



Forest Fires.

There was one small fire during the month, but it was put out before any damage was done. It probably started from locomotive sparks.

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CASA GRANDE RUIN

The following excerpts from a letter recently received from Mr. Frank Pinkley, Custodian of Casa Grande Ruin, Florence, Arizona, who is also in charge of the Tumacacori National Monument, is worthy of notice:

"I arranged for a special visit for twenty-four High school pupils from the Florence Union High School this month (October). They are working in the early history of Arizona and I had two hours with them here at the ruins, dealing with the early civilization of this and the Salt River Valley. The idea was that they would not only have this as a history class but would handle it in the English course too, writing a description of the visit. It is possible that I will make a week end visit with this same class to the Tumacacori National Monument. It would take about three days to make the trip. It will be well worth the trouble involved if we can arrange it, for we could camp over night in Tucson, and I could arrange a talk at the University by the President and the head of the museum, thus giving us quite a lot of indirect advertising. I could also arrange for the High School pupils of Nogales to come out the same day and join us at the Mission, and thus keep up the interest down there, for I think the Nogales paper would play it up for us.

"The matter of our museum here at the Casa Grande received quite a boost this month when our Director donated \$210 for the purchase of the McGee collection of prehistoric pottery and current Indian baskets and pottery . . . I expect to install it in the Custodian's residence, and I can undoubtedly increase the interest of the visitors to the ruin by using it to illustrate talks on design, decoration, etc. I have had one visitor promise me his collection of Arizona material as soon as my museum building is ready to receive it. He said the State and County had asked for it at different times, but he wanted to go to the United States Government where he knew it would be well cared for. I think there are many other Arizona citizens who may reason the same way."

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THE DENVER CONFERENCE

National Park Superintendents and Representatives

of National Park Utilities "Talk Shop"

Together For Several Days.

November 1919 in the National Park Service will be marked with two important events - the National Park Conference, and a new national park. The new park - Zion by name - is introduced to you on another page.

The conference was held in Denver November 13th and 14th, in Rocky Mountain National Park the 15th and 16th, and again in Denver on the 17th and 18th. Most of the day of the 17th was spent in inspecting Denver's mountain parks and the foothills of the Rockies from 13 to 50 miles west of the city.

From every standpoint the conference was a success. It was purely a working conference, which made it particularly advantageous to the park officials attending. There were no set speeches and no attempts to carry out a prearranged program. The most pressing problems confronting the field service were brought up and discussed from various angles, and the concessioners, or as we prefer to call them, representatives of park utilities, were given an opportunity to state their views on any problem confronting them.

Aside from the solution of several important problems affecting the administration, protection and improvement of the national parks, the conference was beneficial to the Service for the reason that it brought all of the responsible field officers of the Service together on a basis of friendship, and the result of this personal contact will be evident for a long time to come.

The superintendents and others present showed a deep interest in all that the Service is doing. It was gratifying to note that even when opportunities were presented for the superintendents and other officers to attend amusements they preferred to make the most of every moment by discussing park problems. They could be seen about the hotels in groups exchanging views and making notes at all hours after the official conferences had adjourned.

MEMORANDUM FOR THE RECORD

Subject: [Illegible]
Reference: [Illegible]
Action: [Illegible]

[The following text is extremely faint and largely illegible. It appears to be a detailed memorandum or report, possibly containing a list of items or a narrative description. The text is organized into several paragraphs and possibly includes a list of points or a table of data, but the specific content cannot be discerned due to the low contrast and quality of the scan.]

The City of Denver was very hospitable and gave more attention to the conference than any other city where these gatherings have been held in the past. Three luncheons were tendered to the visiting superintendents and representatives of the business interests - one on November 13th by the Denver Tourist Bureau, the second on November 14th by the Denver Civic and Commercial Club, and the third on November 17th by these same organizations. The trip to Rocky Mountain National Park and the tour of the Denver mountain parks was made possible through the generosity of the Rocky Mountain Parks Transportation Company, of which Mr. Roe Emery is the president and general manager.

Among those present who were neither park officials or representatives of park utilities were M. A. L. Thurston of Honolulu, owner of the Commercial Advertiser; Col. John R. Fordyce, Hot Springs, Ark.; Mr. W. C. Fordyce of St. Louis; Major W. A. Welch, general manager of the Palisades Interstate park, New York; and H. H. Hunkins, manager of the Western Lines Bureau of Service, National Parks and Monuments, of the U. S. Railroad Administration.

The Director, at the close of the conference at Denver, visited the new Zion National Park, and also the Bryce Canyon region, which is a short distance northeast of Zion park.

1. The first part of the document discusses the importance of maintaining accurate records of all transactions. It emphasizes that proper record-keeping is essential for the integrity of the financial system and for the ability to detect and prevent fraud. The text notes that records should be kept for a minimum of seven years and should be easily accessible for review.

2. The second part of the document outlines the specific requirements for record-keeping. It states that all transactions must be recorded in a clear and concise manner, using a standardized format. This includes recording the date, amount, and description of each transaction. The text also mentions that records should be kept in a secure location and should be protected from unauthorized access.

3. The third part of the document discusses the role of internal controls in ensuring the accuracy of records. It notes that internal controls should be designed to prevent errors and fraud, and should be regularly reviewed and updated. The text also mentions that internal controls should be documented and communicated to all employees.

CONCLUSION

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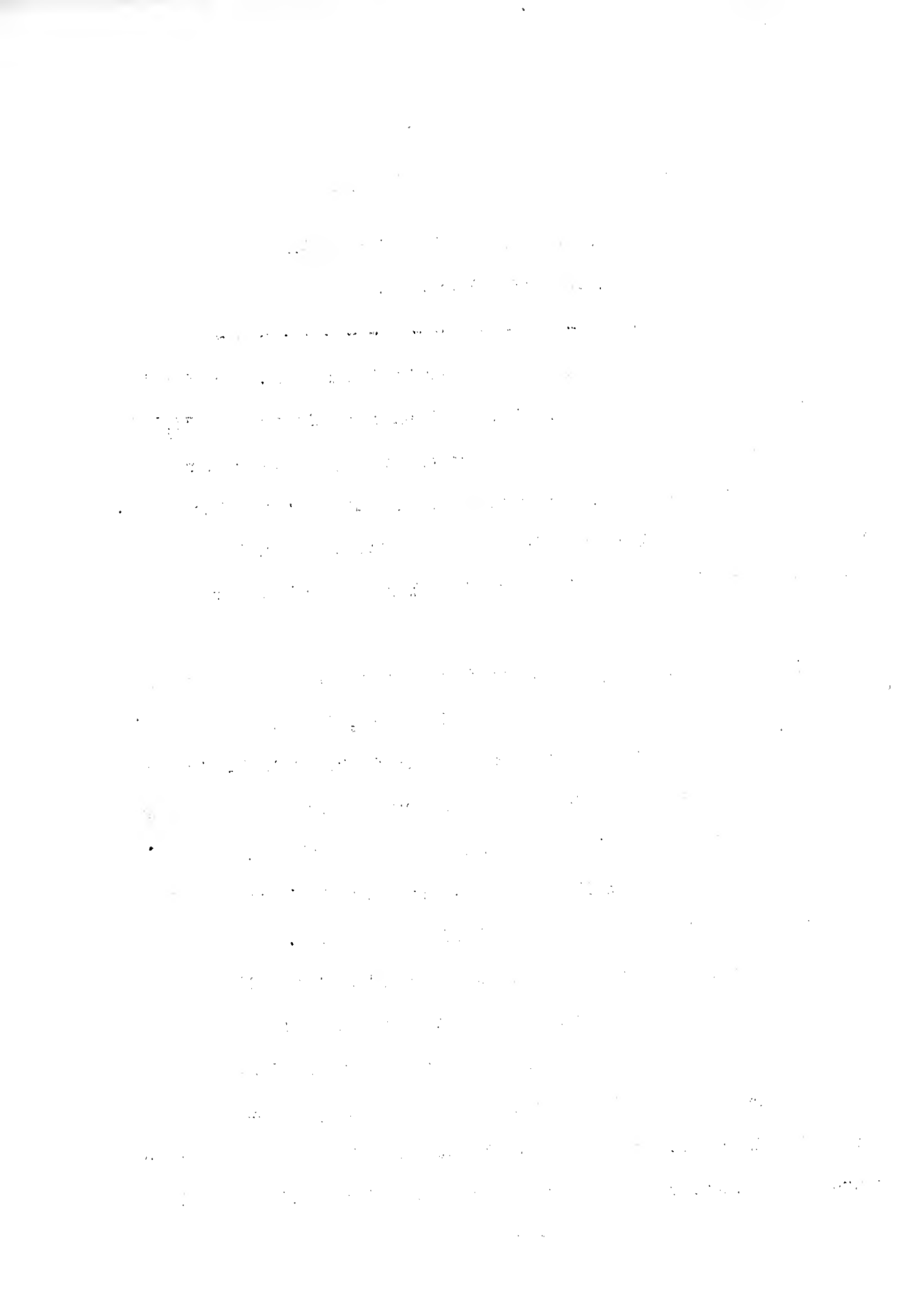
A NEW NATIONAL PARK ESTABLISHED

Zion in Utah makes the Nineteenth
in the Federal System.

Zion National Monument is now Zion National Park. President Wilson on November 19th signed the bill which places this area of 76,800 acres or 120 square miles in the same class of scenery as the other national parks, of which there are now nineteen. It is located in southwestern Utah about 100 miles from the station of Lund, on the Los Angeles and Salt Lake railroad, and can be reached in less than six hours by automobile.

Zion National Park, which was formerly Zion National Monument and before that called Mukuntuweap National Monument, is a canyon more than fifteen miles long and varies in width from fifty to 2,500 feet. It has been described as a rainbow of the desert, and by some is considered more marvelous and beautiful than the Grand Canyon. The early Mormons chose this valley for a refuge and called it Little Zion to distinguish it from Zion, by which name Salt Lake City was called at that time. So remote was it from the usual lines of travel that not until 1909 was it brought under the protection of the Federal government as a national monument.

Each national park has its individual characteristics. Zion's is diversity. Every angle and turn presents a new picture, a calm green vista or a riot in color, in fanciful outline. Within the park are several canyons, spectacular and different from each other. There are lofty



mountains sheltering fertile valleys; cliff dwelling ruins telling of a bygone phase of civilization; sites where heathen deities were worshipped; hidden trails, unexplored regions and unread geological volumes; natural bridges of great size and beauty - the work of millions of years of erosion; walls covering thousands of square feet of smooth surface on which are sometimes found fantastic designs - domes, temples, columns, and even animals and birds, as though painted or carved. Other walls appear as a vast expanse of brightly striped satin hung up against the sky. This is the region which Major Powell, the noted explorer of the Grand Canyon sighted in the 70's, and which the famous artist Moran and others tried to tell of on canvass. So weird and brilliant were both the word and oil paintings that for many years it was thought that Powell's and Moran's enthusiasms ran away with their veracity.

This country which contains much of historic interest, and still retains old Mormon customs in the prosperous villages, has recently become better known through the efficiency of Utah's good roads. By the cooperation of the Federal and State Government a section has been opened up to the world that will rapidly take its place with the Yellowstone, Yosemite, Mount Rainier, Grand Canyon and Glacier National Parks as a scenic marvel.

Custodian Ruesch is in charge.

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The first thing I noticed when I stepped out of the car was
 the smell of rain. It was a familiar scent, one that had
 been with me since I was a child. The rain had been falling
 for hours, and the streets were slick with water. The air was
 heavy, and the lights were blurred. I had never felt so
 alone in a crowd before. The rain was like a blanket, but
 it was also like a wall. It kept me from seeing the world
 as it really was. I had been told that the city was
 beautiful, but I had never seen it like this. The rain
 was like a veil, hiding the beauty of the city from me.
 I had been told that the city was a place of opportunity,
 but I had never seen it like this. The rain was like a
 barrier, keeping me from reaching my dreams. I had been
 told that the city was a place of hope, but I had never
 seen it like this. The rain was like a shadow, following
 me everywhere I went. It was like a constant reminder
 of the things I had left behind. I had been told that
 the city was a place of freedom, but I had never seen it
 like this. The rain was like a cage, trapping me in a
 world that was not my own. I had been told that the
 city was a place of love, but I had never seen it like
 this. The rain was like a tear, falling from the sky
 and hitting my heart. It was like a message, telling me
 that I was not alone. The rain was like a friend, who
 had been with me since I was a child. It was like a
 guide, leading me through the dark and into the light.

For Protection of Spanish
Mission Ruins.

President Wilson has signed the proclamation enlarging the Gran Quivira National Monument, in New Mexico, from 160 acres to 560 acres. This was deemed necessary to save this most important of earliest Spanish mission ruins in the Southwest from vandalism.

The School of American Research has in the past done much to protect these ruins, for purposes of scientific study and the inspection of the public. The first 160 acres of this monument were set aside by presidential proclamation in November 1909. This enlarged area also contains some Pueblo ruins.

QUESTION 1

100 marks

Answer all questions

100 marks

1. The following table shows the results of a survey of 1000 people in a town. The table shows the number of people who own a car, a motorbike, or both. The table also shows the number of people who own neither a car nor a motorbike.

Category	Number of people
Own a car only	450
Own a motorbike only	300
Own both a car and a motorbike	150
Own neither a car nor a motorbike	100

Let A be the event that a person owns a car, and B be the event that a person owns a motorbike. Find the probability that a person owns a car, given that they own a motorbike.

ANSWER ALL QUESTIONS

100

100

100

YELLOWSTONE

Weather.

The extreme weather conditions that characterized October as a record-breaking month continued with somewhat less severity during the first two weeks of November. With the exceptions of 1896 and 1911, it was the coldest November in 32 years. There was less than the normal amount of snowfall, but the wind and sunshine were about the average for November.

General Conditions.

Acting Superintendent Lindsley reports that the elk and deer continued to leave the range during the month. The tame buffalos gave much trouble by breaking away from their range, and the tendency of all the wild animals in the park seems to be to go down to the lower grounds, because of the severe winter conditions and lack of forage.

There was no demand for labor in the park, as all improvement work carried on from the superintendent's office stopped in October. Supplies such as building materials used by the park utilities representatives, were scarce and high priced. Coal was also scarce. Alfalfa, needed for the wild animals, was limited in supply and high in price. About 330 tons were purchased during the month at \$25 per ton in the stack. From 300 to 500 additional tons will be needed before spring for the herds of elk; but neither the alfalfa nor the funds for it appear to be available at present.

No road maintenance work was done during the month with the exception of removing loose rock from the Gardiner Canyon road. Nine snowshoe cabins in various parts of the park were supplied with rations and blankets for the winter. To accomplish this a boat was used between Lake Outlet and the Upper Yellowstone for the cabins in the southeast corner, as the snow was too deep for pack animals.

The ranger force was busy along the north line of the park patrolling to see that the many hunters kept on the outside, also in feeding hay to the elk and other wild animals. Both the patrols and the feeding have to be kept up constantly, every day including Sundays.

The state of Montana extended its open season in Park county to December 25, because last year it happened that there was no bad weather to drive the elk out of the park so as to make good hunting, until after the season closed, and but few got their winter's meat. This fact, together with the early winter, has resulted in a slaughter that is only rivalled by the stories of the "old timers" of the slaughter of buffalo on the plains in the early days. Hunters are coming in numbers by every train, and the outgoing trains are loaded with hunters and dead elk, which are shipped by

Introduction

1.0

The purpose of this document is to provide a comprehensive overview of the project's objectives, scope, and deliverables. It is intended for all stakeholders involved in the project, including the project sponsor, steering committee, and project team. The document will serve as a reference point throughout the project lifecycle.

Project Objectives

The primary objective of this project is to deliver a high-quality, cost-effective solution that meets the needs of the organization. The project will be managed in accordance with the project management methodology defined in the project charter. The project team will be responsible for identifying, analyzing, and resolving any risks that may impact the project's success.

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express and which have required extra cars to handle nearly every day since the slaughter began, the latter part of October. The residents of Gardiner, and ranchers for 20 miles down the Yellowstone Valley, are reaping a rich harvest, as trucks, automobiles, teams, and even saddle and pack animals (for occasionally a real sportsman comes along who is desirous of going to the mountains for his elk instead of shooting it from an automobile) are in great demand for hauling hunters out and hauling elk carcasses in to the depot. Good money is also made boarding the hunters, and some of them even pay for a guide rather than to take a chance of getting over the park line, or on the wrong side of the Yellowstone River into the Montana State Game Preserve. The crowds are composed of men of all types and professions - farmers, lawyers, doctors, merchants, etc. and frequently women hunters are also in the field. Some of them have to be told which end of the gun to load, and the difference between elk and deer. One of the current jokes is that a man shot a stray mule and had it skinned and one foot cut off before a neighbor came along and told him it wasn't an elk.

A popular method of hunting is for a number of hunters to lie in wait until a band of elk, consisting of mothers with last year's calves, spike bulls, and occasionally an old bull with them, comes across the park line; then they surround the band of innocent animals which are so tame that they will follow a team looking for hay, and shoot promiscuously into the bunch until they all drop or a few sometimes get away badly wounded. Then each member who participates in the fusillade claims an elk, or two, if he has paid for special license for the second one.

These depredations, while not witnessed personally by Acting Superintendent Lindsley, were reported to him by several persons who claimed they had seen it. Chief Ranger McBride estimates that about 3,500 elk have been killed along the north boundary since the hunting season opened. He bases his estimate upon data from the Express Company, and information he has picked up among the hunters. That many elk are wounded and not taken away is shown by the fact that about 50 have strayed back to their home in the park and died, and of course there must be many elk wounded that have not died, nor been found.

The State Game Warden of Montana has several deputies stationed in the vicinity of the hunting grounds, but the state law is said to be so broad that any one can get an elk within the law, with but little difficulty, and it now looks as though the slaughter would keep up until the last day of the season, as elk are still leaving the park in numbers. Park rangers arrested four men during the month for hunting in the park. They plead guilty, were fined and made to forfeit their rifles to the United States.

...the first of these is the fact that the ...
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 ...the seventeenth is the fact that the ...
 ...the eighteenth is the fact that the ...
 ...the nineteenth is the fact that the ...
 ...the twentieth is the fact that the ...

GRAND CANYON

Weather.

November weather here was delightful; the nights were crisp and frosty, the days almost balmy. As an example of pleasant weather it was possible to picnic in the pine woods, cook supper and stay out long after sunset. This at an altitude of 7,000 feet, in mid-November. Old residents say that such mild weather often prevails until Christmas and that they have picnicked on the South rim on that day. However, on November 26th the great blizzard which visited the west struck Grand Canyon, bringing the temperature below zero. After three stormy days the weather cleared and the combination of sunny days and snow covered pine forests was delightful.

Travel.

Travel by rail and automobile continued fairly heavy. Many transcontinental tourists make Grand Canyon a stopping place during the months when the roads from Flagstaff and Williams are passable, from about May 1 to November 30. More would come by automobile but for the execrable condition of the only roads reaching the Canyon and which run from Flagstaff (86 miles) and Williams (64 miles). It is stated that at the height of the motoring season it is not uncommon for over 100 transcontinental cars to pass through Williams in one day, and less than half of these visit the Canyon. Many of these transcontinental tourists travel in families. The adventurous spirit of the ox-team days still remains, for among the month's travelers to the Grand Canyon was an eight months old baby from West Virginia making the trip with an automobile party. During the month until the arrival of the blizzard, 2,815 persons, from thirty states, Canada and Mexico, had visited the Canyon. The number of automobiles entering was 180, representing 32 manufactories. The majority of these travelers came from Iowa, Illinois and Ohio.

Birds, Wild Animals and Fish

There is reason to believe that with proper protection wild game, in past years rarely seen on the South rim, may become abundant. There is evidence that it was formerly plentiful there. Mountain sheep and antelope which at one time were abundant, are now rarely seen. The reason for the diminishing of the latter is the wild burros, which eat all the food and are a general nuisance.

Other Matters of Interest.

A camp was established at the mouth of Bright Angel Creek on the north side of the Colorado and christened "Tram Camp". The only means of crossing the Colorado at this point heretofore has been on the single cable, 300 feet from cliff to cliff, and 60 feet above the tumultuous river, which breaks into rapids just below the cable. Rangers cross this cable by sitting on a small board slung from a pulley and then hauling on

THE UNIVERSITY OF CHICAGO

PHYSICS DEPARTMENT

PHYSICS 551 - QUANTUM MECHANICS
PROBLEM SET 10
DUE DATE: 11/15/2018

1. Consider a particle in a one-dimensional potential well defined by
 $V(x) = 0$ for $0 \leq x \leq a$ and $V(x) = \infty$ for $x < 0$ or $x > a$.
The wave function $\psi(x)$ satisfies the Schrödinger equation
 $-\frac{\hbar^2}{2m} \frac{d^2\psi}{dx^2} = E\psi$ for $0 \leq x \leq a$.
The boundary conditions are $\psi(0) = 0$ and $\psi(a) = 0$.
The energy eigenvalues are $E_n = \frac{\hbar^2 k_n^2}{2m}$, where $k_n = \frac{n\pi}{a}$ for $n = 1, 2, 3, \dots$.
The corresponding normalized wave functions are $\psi_n(x) = \sqrt{\frac{2}{a}} \sin\left(\frac{n\pi x}{a}\right)$.

PROBLEM 2

2. Consider a particle in a one-dimensional potential well defined by
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PROBLEM 3

3. Consider a particle in a one-dimensional potential well defined by
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The corresponding normalized wave functions are $\psi_n(x) = \sqrt{\frac{2}{a}} \sin\left(\frac{n\pi x}{a}\right)$.

the cable hand over hand, an arduous and rather dizzy experience.

From Tram Camp several parties of rangers have worked along the Kaibab trail up Bright Angel Creek to the North rim. This usually involves about 3 hours hiking in icy water knee deep, as the creek is confined in a box canyon for several miles. Above the canyon the creek emerges into a pleasant valley, which affords magnificent views of the buttes and temples and cliffs of the Grand Canyon and tributary canyons. This trail to the North rim has been practically abandoned for several years. Its development to afford free travel across the Canyon from rim to rim is one of the interesting problems facing the Park Service.

Provisional signs have been painted and erected along the Kaibab Trail, hertofore unmarked.

Foot Trails.

An important need in this park is the development of foot trails in the woods and in the canyon near Grand Canyon village and hotels. Abandoned or unmarked trails to attractive spots within a few hundred yards of the postoffice have been discovered by rangers. One short trail leads to the entrance of Hermit Rim road and to some ancient Indian pictographs painted and carved on the canyon walls. Because no deterrent signs have been posted iconoclastic tourists have written or carved their uninteresting names on the pictograph rocks. Fine bold Indian drawings in red on the yellow lime rock have been erased so that John Smither-Jones of Springfield, California might record his momentous visit to the Grand Canyon. Steps are being taken to stop such vandalism.

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MOUNT RAINIER.

There was a total snowfall during November of 18 inches. On the 30th there was a depth of 4 inches at the Park entrance, and 38 inches at Paradise Valley. Longmire Springs had 7 inches, Glacier (terminus of Nisqually Glacier) 14 inches, and Narada 21 inches. Maximum temperature 51; minimum 16. There was no travel during the month, the road between the park entrance and Tacoma being closed for six months for the widening of what is known as the Canyon road.

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GLACIER

Weather.

Extreme cold weather for the time of year was experienced in nearly all regions of the park, the temperature varying from 58 on the 22d to 11 below on the 27th. There were seven snowstorms, the one on the 10th becoming a blizzard on the west side of the park, making a total snowfall of 16.5 inches.

THE HISTORY OF THE UNITED STATES

The history of the United States is a story of growth, struggle, and achievement. From the first European settlers to the present day, the nation has faced numerous challenges and triumphs. The early years were marked by the search for a better life and the establishment of a new society. The American Revolution was a pivotal moment, leading to the birth of a new nation. The years following the Revolution were a time of rapid expansion and development. The United States emerged as a major power in the world, and its influence grew steadily. The Civil War was a defining moment in the nation's history, leading to the abolition of slavery and the strengthening of the Union. The Reconstruction era was a period of great struggle and progress. The United States continued to expand its territory and influence, and its economy flourished. The late 19th and early 20th centuries were a time of great change and innovation. The United States became a world leader in industry and technology. The Progressive Era was a period of reform and social change. The United States emerged as a major power in the world, and its influence grew steadily. The Civil War was a defining moment in the nation's history, leading to the abolition of slavery and the strengthening of the Union. The Reconstruction era was a period of great struggle and progress. The United States continued to expand its territory and influence, and its economy flourished. The late 19th and early 20th centuries were a time of great change and innovation. The United States became a world leader in industry and technology. The Progressive Era was a period of reform and social change. The United States emerged as a major power in the world, and its influence grew steadily.

The United States has a rich and diverse history, and its people have made many contributions to the world. The nation's values of freedom, democracy, and equality have inspired people around the globe. The United States has a long and proud tradition of leadership, and its people have shown a remarkable ability to overcome adversity. The history of the United States is a story of hope and possibility, and it is a story that continues to inspire and guide us today.

CHAPTER I

The first European settlers in North America were the Pilgrims, who arrived in 1620. They were seeking a better life and a place where they could practice their religion freely. The Pilgrims established the Plymouth Colony, and they were joined by other settlers in the years following. The early years were a time of great struggle and hardship. The settlers faced many challenges, including lack of food, disease, and conflict with the Native Americans. Despite these difficulties, the Pilgrims and other settlers persevered, and they established a new society. The American Revolution was a pivotal moment in the nation's history, leading to the birth of a new nation. The years following the Revolution were a time of rapid expansion and development. The United States emerged as a major power in the world, and its influence grew steadily. The Civil War was a defining moment in the nation's history, leading to the abolition of slavery and the strengthening of the Union. The Reconstruction era was a period of great struggle and progress. The United States continued to expand its territory and influence, and its economy flourished. The late 19th and early 20th centuries were a time of great change and innovation. The United States became a world leader in industry and technology. The Progressive Era was a period of reform and social change. The United States emerged as a major power in the world, and its influence grew steadily.

CHAPTER II

The United States has a rich and diverse history, and its people have made many contributions to the world. The nation's values of freedom, democracy, and equality have inspired people around the globe. The United States has a long and proud tradition of leadership, and its people have shown a remarkable ability to overcome adversity. The history of the United States is a story of hope and possibility, and it is a story that continues to inspire and guide us today. The United States has a rich and diverse history, and its people have made many contributions to the world. The nation's values of freedom, democracy, and equality have inspired people around the globe. The United States has a long and proud tradition of leadership, and its people have shown a remarkable ability to overcome adversity. The history of the United States is a story of hope and possibility, and it is a story that continues to inspire and guide us today.

CHAPTER III

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General Conditions.

Notwithstanding that Flathead River froze from shore to shore at Belton, Lake McDonald is still open for navigation its entire length. Losses of horses and cattle have been reported on the Indian reservation just east of the park, and if the winter becomes very severe and the snow gets deep, feeding of the game in some parts of the park will become necessary to prevent starving. A number of deer have been seen on the road between Belton and Fish Creek and they appear in fine condition. Reports on the east side of the park show the game to be in good condition despite the early winter and severe weather. Fishing was excellent in the upper end of Lake McDonald and also in the lakes in the North Fork country.

YOSEMITE

Travel.

During the month 304 visitors entered the park, 87 of whom came in 28 private cars, 212 by stage from El Portal and the remainder (5) walking or driving. This is a larger number than the average for November, and most of the visitors remained from four to seven days. In consequence the Sentinel Hotel was busier than ever before at that time of year, from 35 to 50 guests being accommodated daily up to the end of the month.

Weather.

The weather was extremely mild. Toward the end of the month there was some fear of forest fires because of dryness, but on the 26th snow fell throughout the park area, - three feet at Glacier Point and four or five inches on the floor of the valley. The telephone switchboard and telegraph were in operation continuously throughout the month.

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ROCKY MOUNTAIN

Weather.

The first half of the month was fair and comparatively mild, the other half snowstorms and cold. Snowfall for the month was 30 inches, for the season to November 30th 72 inches. This is very much above the record of last year and perhaps 50 per cent above the normal snowfall for this date. Temperature, maximum 61, minimum 13 below; daily average 30.8. Total travel for the month was estimated at 150 persons.

Roads and trails.

All entrances to the park are closed with the exception of Lyons road. All roads between the park boundaries are closed to automobiles; Fall River road open to horses and vehicles as far as the Fish Hatchery; Moraine Park road open to horse drawn vehicles as far as Moraine Park post-office; Longs Peak road open to horse drawn vehicles as far as Long Peak postoffice, and practically blocked by snow beyond. A heavy snowfall on the

THE UNIVERSITY OF CHICAGO

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MEMBERSHIP

2003-2004

2003-2004

MEMBERSHIP LIST FOR 2003-2004
The following is a list of the members of the Division of the Physical Sciences for the year 2003-2004. The list is organized by department and then by alphabetical order within each department. The names of the members are listed in the order in which they were elected to membership. The names of the members who have died since their election are listed in parentheses. The names of the members who have resigned since their election are listed in brackets. The names of the members who have been elected to membership since the last meeting of the Division are listed in italics. The names of the members who have been elected to membership since the last meeting of the Division are listed in italics.

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26th and 27th, followed by hard winds and drifting snow rendered travel even on horse back difficult.

Wild Animals.

Deer were seen frequently. One was found killed by a mountain lion, on the Moraine Park road about three miles out of the village. Sheep are numerous around Sheep Lake, Mary's Lake and the Fish Hatchery. Elk in small numbers have been seen and heard on Deer Mountain. All animals seen were reported in good condition. A few pheasants have been seen.

- - - - -

SEQUOIA

The mean temperature at Giant Forest camp during the month was 52.2, which is about normal.

California State highway engineers surveyed between Three Rivers and the west boundary of the park at the Mt. Whitney Power & Electric Co. road entrance on the Middle Fork of the Kaweah River. Construction of this highway is one of the projects that was provided for in the State bond election on July 1, 1919.

The bears are hibernating. Deer are most abundant near Hospital Rock and Clough Cave, as the autumn rains brought wild feed there in abundance. Frequently 150 deer may be seen at either of these places.

- - - - -

GENERAL GRANT

Persons numbering 22,743 visited this park during the season, and 3,456 automobiles entered.

The mean temperature at park headquarters during the month was 49.17, which is about normal. Rainfall was about a half inch. Ten miles of road have been surfaced and water ditched constructed preparatory for winter storms.

- - - - -

HOT SPRINGS.

The deeds for the site of the new bathhouse have been recorded, and this completes the transfer of this ground to the United States. This land which is the gift of Hot Springs citizens to the government for a free bathhouse, is nearly opposite the eastern end of the Army and Navy hospital area.

The estimated travel to Hot Springs during the month was 12,156. Among the month's visitors were Senator Kenyon of Iowa, and Col. Wm.

THE UNIVERSITY OF CHICAGO

PHILOSOPHY

PHILOSOPHY 101: INTRODUCTION TO PHILOSOPHY

PHILOSOPHY 102

PHILOSOPHY 103

PHILOSOPHY 104: ETHICS

PHILOSOPHY 105

PHILOSOPHY 106

PHILOSOPHY 107: LOGIC

PHILOSOPHY 108

PHILOSOPHY 109

PHILOSOPHY 110: METAPHYSICS

PHILOSOPHY 111

PHILOSOPHY 112: HISTORY OF PHILOSOPHY

Jennings Bryan. Each delivered addresses on Americanism in the Auditorium, to crowded houses.

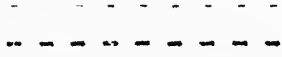


PLATT

A new rustic rock fountain top over Big Tom Spring replaces the old inclosure damaged by a flood several years before. This work was done by Mr. Forest S. Townsley, a former ranger in the park, and is appreciated by both the park employees and the citizens of Sulphur.

Rainfall during November was 3.86, making a total since January 1, 1919 of 42.60. The mean temperature for the month was 48.

Laborer Milligen dispenses the waters of the Bromide, Medicine and Sodium-Chlorid Springs to visitors to the springs, and has charge of the pavilion from which these waters are taken. His record shows the number of visitors to these springs during November to have been 4,347, and that these people took from the springs a total of 2,020 gallons of Bromide water, 431 gallons of Medicine, and 238 gallons of Sodium-Chlorid. He shows that there were shipped 485 gallons of Bromide water and 80 gallons of Medicine, making a total number of gallons of all the waters removed from the springs during the month, 3,254.



WIND CAVE

Road and weather conditions account for the slump of visitors to this park during November, as there were only 38. The general weather conditions of the west for the month prevailed here. Heavy storms, short thaws, cold snaps, and drifting snows, made the roads impassable, and kept the park practically snowbound for the entire month.



MESA VERDE

Road work on Chapin Mesa was completed and the road is now in good condition to drain when the snows melt in the spring. During the first half of the month the weather was fine.

The deer in the park are in fine condition and despite the loss by predatory animals are not decreasing in numbers, but they are not increasing as they should. One late tourist, a man from Japan, was delighted to see three deer on the road at the head of Big Soda Canyon. Unafraid, they allowed the car to approach them, so he could see the beautiful creatures at close range.

1. The first part of the document discusses the importance of maintaining accurate records of all transactions and activities. It emphasizes that this is essential for ensuring transparency and accountability in the organization's operations.

2. The second part of the document outlines the various methods and tools used to collect and analyze data. It highlights the need for consistent and reliable data collection processes to support effective decision-making.

3. The third part of the document focuses on the role of technology in data management and analysis. It discusses how modern software solutions can streamline data collection, storage, and reporting, thereby improving efficiency and accuracy.

4. The fourth part of the document addresses the challenges associated with data management, such as data quality, security, and privacy. It provides strategies to mitigate these risks and ensure that data is used responsibly and ethically.

5. The fifth part of the document concludes by summarizing the key findings and recommendations. It stresses the importance of ongoing monitoring and evaluation to ensure that data management practices remain effective and aligned with the organization's goals.

PARK SERVICE NEWS

DEPARTMENT OF THE INTERIOR
National Park Service
Washington

JAN -- 1926

To the Members of the National Park Service:

I am glad to send greetings to all members of the National Park Service, both in Washington and in the field. We are very busy at Washington laying our plans for the coming season, which promises to break all records for travel to the national parks.

Plans are now under way for the construction of a rangers' clubhouse in the Yosemite Valley. This will be the first building in connection with the new village development in that park, and will give the rangers the comfortable home they so well deserve. This structure, which will cost over \$20,000, should be ready for occupancy by the beginning of the tourist season when the work of our rangers becomes most active. During my visit to the Yosemite, in late December and early January, the rangers prepared a surprise in the shape of a fine toboggan slide, of which we all took advantage; and with their assistance I was able to give my guests from San Francisco a most enjoyable time during their short stay.

After an interesting visit with Superintendent Fry, at Visalia, and talks on the work of the Park Service at Fresno and Los Angeles, I spent two days at the Grand Canyon National Park, putting in about thirty miles on horseback on the trails, and attending to park business. The dedication of this park will be held the last part of April, and it is our intention to have this event made an important feature of our year's program. I have been much impressed with the possibilities of the Grand Canyon as a great recreation ground. When we have developed a comprehensive system of trails in the Canyon proper there will be far greater opportunities to visit the many wonderful sections of this great gorge.

Yours very truly,

STEPHEN T. MATHER

Director.

PARK SERVICE NEWS

DEPARTMENT OF THE INTERIOR
National Park Service
Washington

The National Park Service is pleased to announce

the opening of the new season of the National Park Service. The National Park Service is pleased to announce the opening of the new season of the National Park Service. The National Park Service is pleased to announce the opening of the new season of the National Park Service.

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Thank you very much,

Director, National Park Service

Washington, D.C.

TWO NEW NATIONAL MONUMENTS.

One in Nebraska; the Other in Colorado.
Twenty-four in All.

During December two national monuments were added to our system. On the 12th of the month an area of 2,053.83 acres in western Nebraska became Scotts Bluff National Monument. It combines scenic attractions and historic values. The Oregon Trail, the Mormon Trail, and the principal line of the Overland Trail; the Concord stages, and pony express of Buffalo Bill, are some of the romantic features of its history. As a "landmark" and rendezvous Scotts-Bluff was used by thousands of immigrants and frontiersmen. Here was the danger spot of the "Fort Leavenworth and Fort Laramie Military Road." One of the pony express riders of those exciting pioneer days, one of Buffalo Bill's competitors, was a Cliff Cole, who one day after a scuffle with some Indians rode into "Scottsbluff station" with nine bullet holes in his body and seventeen through his clothing.

Scenically, Scotts Bluff was also worthy of national notice and preservation. Each summer hundreds of persons make the difficult ascent to its top, and from its elevation of 4,562 feet see six towns nestled in the North Platte valley, and many miles of irrigated acres of alfalfa, grain and other crops. This promontory and the hills adjoining on the west are the highest known points within the State of Nebraska. In frontier days it was called the Gibraltar of Nebraska. Dome Rock, visible for many miles in each direction was a signal station for the Indians, and later for the pioneers.

Yucca House National Monument

One week later--December 19--Yucca House National Monument was created. These ancient ruins are located in the foothills of Sleeping Ute Mountain, on the edge of Montezuma Valley in Colorado, a few miles west of Mesa Verde National Park. The area contains what has been known locally as the Aztec Springs Ruins, which is historically interesting as being one of the first ruins in that area to be described. They consist of the remains of two great structures known as upper and lower house, and numerous smaller buildings, once forming an extensive village inhabited by pre-historic people.

The land embraced within the monument, approximately ten acres, was donated to the United States by Mr. Henry Van Kleeck of Denver, Colorado. The name Yucca House was selected after

The first part of the document discusses the importance of maintaining accurate records of all transactions. It emphasizes that every entry should be supported by a valid receipt or invoice. This ensures transparency and allows for easy verification of the data. The text also mentions the need for regular audits to identify any discrepancies or errors in the accounting process.

Furthermore, it highlights the role of technology in modern accounting. The use of software can significantly reduce the risk of human error and streamline the workflow. However, it also notes that proper training and security measures are essential to protect sensitive financial information.

In addition, the document covers the various methods used for asset valuation. It explains how different depreciation methods can affect the reported value of an asset over time. The text provides a detailed breakdown of the straight-line method, the declining balance method, and the sum-of-the-years-digits method. It also discusses the impact of these choices on the company's taxable income and overall financial health.

The document also touches upon the importance of staying up-to-date with changes in tax laws and regulations. It suggests that companies should consult with a professional accountant to ensure they are fully compliant with the latest requirements. This proactive approach can help avoid penalties and optimize the company's tax position.

Another key aspect discussed is the management of accounts receivable. The text provides strategies for reducing the number of days sales are outstanding (DSO). This includes improving credit policies, offering early payment discounts, and following up on overdue invoices. Efficient accounts receivable management is crucial for maintaining a healthy cash flow and ensuring the company's liquidity.

The document also addresses the challenges of managing accounts payable. It suggests negotiating better terms with suppliers and prioritizing payments to avoid late fees and maintain good relationships. Balancing the timing of payments is a critical skill for any business owner.

Finally, the document concludes by emphasizing the overall importance of financial discipline and planning. It encourages businesses to create a budget and stick to it, as well as to regularly review their financial statements. By taking a proactive and organized approach to their finances, businesses can ensure long-term success and growth.

consultation with authorities of the Smithsonian Institution, as being more appropriate than Aztec Springs Ruins, a name which implies an erroneous theory of a relationship of the ruins with the Aztecs of Mexico. The Indians of Montezuma Valley called Sleeping Ute Mountain by a name meaning Yucca, which they gave to it on account of the abundance of the yucca plant which grows on the mountain sides. The superintendent of Mesa Verde National Park will be the custodian of the new monument.

A NEW PUBLIC BATHHOUSE

The site for the proposed new government free bathhouse at Hot Springs, Arkansas, is now the property of the United States government, absolute title to it being conveyed late in November.

This is a gift of the citizens of Hot Springs for the purpose designated--government free bathhouse. The site is across Reserve Avenue from the Reservation and nearly opposite the eastern end of the Army and Navy Hospital area. A portion of the land had been granted by the United States to the city of Hot Springs for "public use" as highways, under an act dated June 16, 1880, and was decided back to the government.

Most of the structures on this ground have already been removed, so that construction will begin shortly.

THE DIRECTOR'S TRIP

Director Mather has returned to Washington from a western trip. Shortly before Christmas he left Washington for San Francisco where he met by appointment a party of California business men, who accompanied him to Yosemite National Park where they spent two days enjoying the winter sports and discussing park improvements. He also spent several days in Los Angeles where he addressed the Los Angeles Chamber of Commerce on improvement plans for Yosemite. Mr. Mather also spent two days at Grand Canyon.

The first part of the document is a letter from the
author to the editor of the journal. The letter is dated
the 1st of January 1950. The author is a young man
of 25 years of age, who has just completed his
studies at the University of Cambridge. He is
writing to you because he is interested in
the work you are doing on the subject of
the history of the English language.

THE HISTORY OF THE ENGLISH LANGUAGE

The history of the English language is a subject
which has attracted the attention of many
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THE SLAUGHTER OF THE ELK

The last large herd of American elk is in peril of extermination. The fight is on for its very existence. Unless speedy and effectual help is forthcoming this noble American animal may be known to future generations only through museums and textbooks.

The danger is from weather and the rapacity of man.

This herd of elk---one of the nation's most precious possessions---roams in Yellowstone National Park. During the past summer it numbered probably 40,000 animals, divided roughly into equal groups on each side of the Continental Divide. They remain contentedly in the highlands of the park until the heavy snows collect, when the northern herd goes down toward the park boundary and often beyond the park border in search of grazing spots. For the same reason the southern herd drifts south and east, into the Jackson Hole country adjoining the Yellowstone park.

For the past three summers Montana and Wyoming have had severe droughts, the 1919 drought being the most serious in the history of the northwest. Added to this calamity winter arrived in Yellowstone park earlier than usual. The first days of October brought the elk down on the winter range nearly two months ahead of the usual migration. On October 22nd and 23rd the worst snowstorm in 32 years raged, the fall being from 15 inches to 4 feet, with the mercury below zero. The storms continued to sweep, throughout November and December. The elk drifted in all directions in search of food, leaving the boundaries by thousands.

The story of the destruction by man is a sadder one. Of the elk in the park on October first, it is estimated that 7,000 had been killed and wounded up to the night of December 24th, when the Montana hunting season closed. The several previous winters had been so mild that few elk had wandered from the park; so last year the Montana legislature lengthened the hunting season for elk several weeks. This combined with the exceptional early and severe winter contributed to a killing that made Park County resemble a slaughter pen. In their excitement the hunters forgot even the Montana law, which limits the kill but does not prohibit the shooting of does and fawns. Men fired by volleys, heedless of law or sportsmanship. The elk being accustomed to tourists had no fear of men. They would approach the hunters---or rather "shooters"---as a friend might, and would even follow wagons looking for food. This misplaced confidence resulted in carloads and trainloads of carcasses being shipped from the Gardiner railroad station. The coal shortage, however, which brought suffering in its wake to so many, had a tendency to lessen the slaughter, because train service and shipping accommodations had been curtailed. But the slaughter of the elk continued until the last hour of the game season, in Montana.

There is enough hay on hand to feed the remaining elk until March 15th, but 200 to 300 tons additional are needed to carry them through the winter. No funds with which to purchase such hay are available. The superintendent of Yellowstone Park believes that \$8,000, if placed at his command without delay (alfalfa is now \$38. per ton, undelivered) would guarantee the preservation of the animals now left. Deficiency estimates have been submitted to Congress to meet this emergency. The southern herd is being cared for as far as possible by the United States Biological Survey. Over 1200 tons of hay have been purchased so far, the Yellowstone Park road maintenance funds having to be used in the emergency.

P. S. Since the above was written Congress has granted funds in the deficiency bill reimbursing the superintendent of Yellowstone Park for his expenditures for hay, and to permit of the purchase of additional hay to tide the elk over the winter.

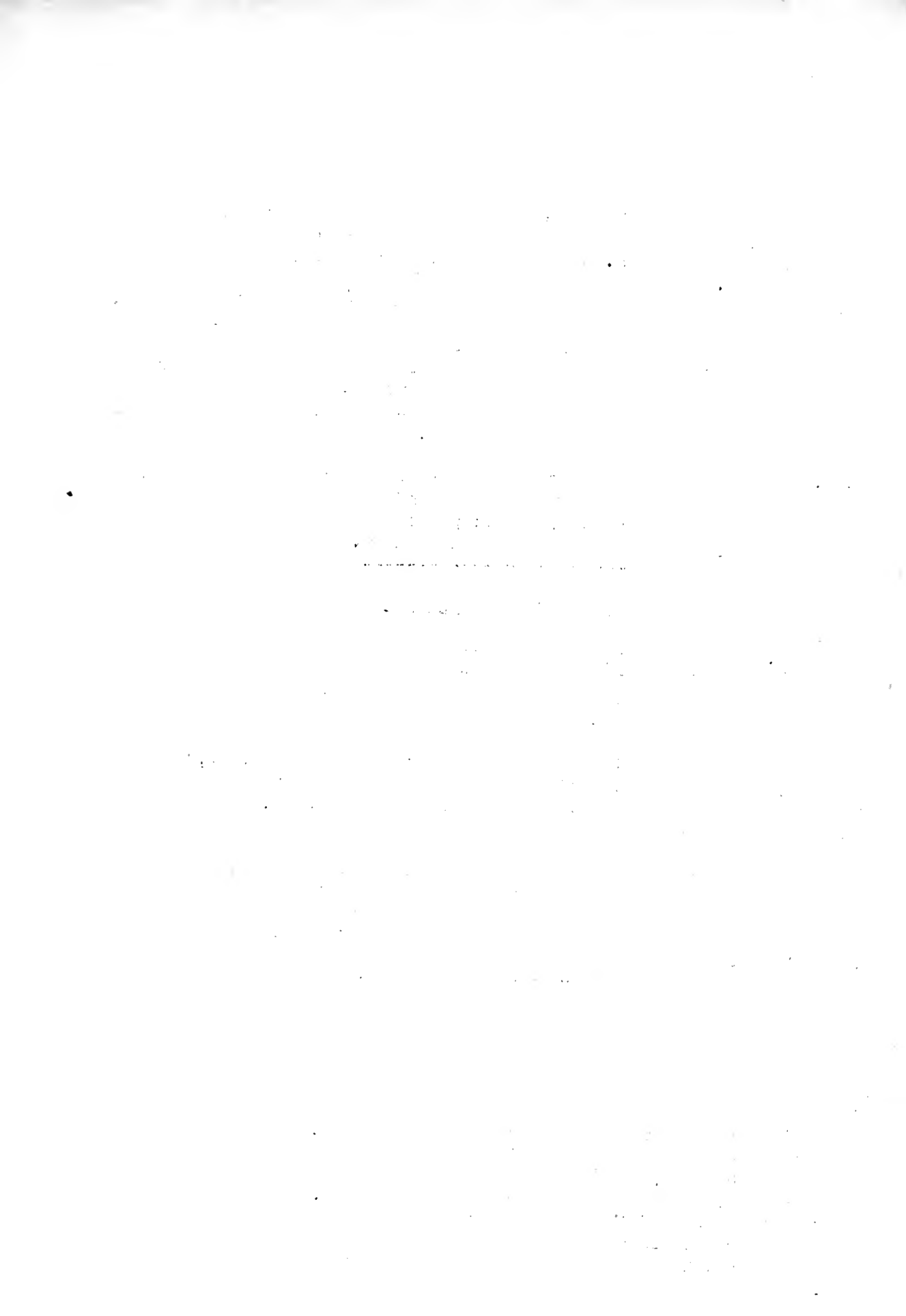
A LANDMARK FOR AEROPLANES.

Mr. Frank Pinkley, custodian of Casa Grande and Tumacacori National Monuments, says that Casa Grande is on the air route between Tucson and Phoenix, Arizona, and that this may later be of use to the United States.

The main house of the ruins has a corrugated iron roof, 50 by 70 feet, and dark red in color. He points out that by painting a white cross or some other location emblem on this roof, it could be seen by the occupants of an aeroplane for many miles, and thus Casa Grande Monument would become known as a guide mark on the Phoenix-Tucson leg of the El Paso-Los Angeles air route. The road through the monument runs diagonally from the southwest to the northeast corner, and with slight modifications could be used for a landing field, as it is cleared about 100 feet in width and is quite level.

THE BURRO PROBLEM IN GRAND CANYON NATIONAL PARK

The thousands of wild burros in the Grand Canyon national park have become a nuisance, and the question as to how they may be done away with has come up for discussion and decision. In the most traveled section between Grandview Trail and Hermit Trail it is estimated that there are no less than 2,000, while herds from five to twenty are frequently seen on the Tonto Trail. These now wild burros are descended from domesticated animals turned loose in the Canyon to graze. They have inbred and exhausted the food supply so that the stock has deteriorated, and is now too small for domestic use.



Acting Superintendent Peters of Grand Canyon Park states that from the park standpoint the damage they do comes under the three following divisions:

(1.) They denude the Tonto Plateau and tributary canyons of all food for animals so that the government and others must now carry feed in a country formerly abounding in wild grasses and herbage.

(2.) In similar manner they drive out deer, antelope and mountain sheep.

(3.) They trample down the trails and make many false trails which mislead any but experienced guides.

The reduction, if not extermination, of these animals presents a peculiar problem in that all the national parks are sanctuary for wild life, except predatory animals--and a burro can hardly be called that, no matter how we may stretch the imagination. The acting superintendent has asked for authority to shoot, corral, or otherwise dispose of them.

Dr. E. W. Nelson, chief of the Bureau of Biological Survey, is in favor of exterminating these burros, but his bureau cannot undertake the work of such destruction.

OUR NEW CENTRAL INFORMATION FILING SERVICE

A file has been established in the Service at Washington under the able personal charge of Miss Peltz, which it is hoped will fill a long felt want. It is proposed to gather and here file in easily accessible form every bit of information possible regarding the attractions, characteristics, history, etc. of our various national parks and monuments.

Every week brings an important inquiry for this or that information which oftentimes takes hours to find, and again often cannot be found at all. As an example, it wasn't many weeks ago that a large film concern working on some very interesting national park material wanted certain information regarding Indian lore of two of our parks for captions for their pictures. We finally got some of it by delving into books at the Library of Congress, but it took a long time. Again, only during the past week a prominent public speaker scheduled to be the chief speaker at the National Parks banquet in New York City next month, wanted information regarding the commercial and economic aspects of national-park work. We got some data for him, but there must be a great deal we didn't get. So we want these files to become the lexicon of what the parks show in every way--history, flora and fauna, roadways, local interest, bibliography, camps and camping, sports of every description, what other countries are doing, what other scenic material is available

THE UNIVERSITY OF CHICAGO
DEPARTMENT OF CHEMISTRY

1. The first part of the experiment is to determine the molar mass of a polymer. This is done by measuring the osmotic pressure of a solution of the polymer in a solvent. The osmotic pressure is measured by a method known as the membrane osmometer. The polymer solution is separated from a pure solvent by a semi-permeable membrane. The osmotic pressure is the pressure that must be applied to the pure solvent to prevent it from flowing through the membrane into the polymer solution.

2. The second part of the experiment is to determine the degree of substitution of a polymer. This is done by measuring the refractive index of a solution of the polymer in a solvent. The refractive index is a measure of the optical density of a substance. The degree of substitution is the ratio of the refractive index of the substituted polymer to the refractive index of the unsubstituted polymer.

3. The third part of the experiment is to determine the molecular weight of a polymer. This is done by measuring the viscosity of a solution of the polymer in a solvent. The viscosity is a measure of the resistance of a fluid to flow. The molecular weight is the mass of a polymer molecule divided by the number of polymer molecules. The molecular weight can be determined by measuring the viscosity of a solution of the polymer in a solvent and comparing it to the viscosity of a solution of a known polymer of known molecular weight.

4. The fourth part of the experiment is to determine the molecular weight of a polymer. This is done by measuring the sedimentation velocity of a polymer solution in a centrifuge. The sedimentation velocity is the rate at which a polymer molecule moves through a solution under the influence of a centrifugal force. The molecular weight is the mass of a polymer molecule divided by the number of polymer molecules. The molecular weight can be determined by measuring the sedimentation velocity of a polymer solution in a centrifuge and comparing it to the sedimentation velocity of a known polymer of known molecular weight.

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outside our parks, city parks and state parks of prominence, in fact everything which at some time may have a value, and be available at a moment's notice for you and for us, and for the public.

Therefore, please keep your eyes open, and when you run across something that may fit into this file and which you would like to have filed as of some possible future use, send it on. The Service considers this file of such importance that a special letter will be sent to every superintendent and custodian to keep wide awake for such data.

And when you send it in, address it to the Information File, National Park Service. Keep your file up to date!

WINTER TRAVEL TO THE PARKS

Notwithstanding an early and severe winter, travel to the accessible parks was gratifying. Hot Springs, which naturally leads in the number of winter travelers, cared for 11,637. Grand Canyon entertained two special parties--one of 127 which arrived in special coaches, and the other which was a convention of the Bankers' Life Insurance Company, and numbering 357, gathered from all parts of the country, arrived by special train. The total number of visitors in this park for December is 3,884, an increase of 1,069 over November's figures. Platt follows with a record of 3,418; Yosemite, 244; Mount Rainier, 148; Rocky Mountain, 83; Zion and Wind Cave each 15, and Yellowstone 9. On December 28th a party of 125 mountaineers arrived in Mount Rainier Park for their annual winter visit. The monthly average of visitors to Tumacacori Mission during the fall and winter has been about 300; in December travelers from eighteen states and Hawaii signed the visitors' register.

A CHANGE IN NAME

The name of the western entrance to Yellowstone National Park, known as Yellowstone, Montana, has been changed by the postal authorities to West Yellowstone, Montana, to avoid further confusion with the name Yellowstone Park, the Wyoming headquarters at Mammoth Hot Springs.

REDUCING THE FOREST FIRE MENACE

Glacier Park reports that during December four oil burning engines were installed on the Great Northern Railroad and are making the run from Essex to the Summit. Ten more engines of this type are to be added as soon as they can be equipped. If the use of these

1. The first part of the document discusses the importance of maintaining accurate records of all transactions and activities. It emphasizes that this is essential for ensuring transparency and accountability in the organization's operations.

2. The second part of the document outlines the various methods and tools used to collect and analyze data. It highlights the need for consistent data collection procedures and the use of advanced analytical techniques to derive meaningful insights from the data.

3. The third part of the document focuses on the role of technology in data management and analysis. It discusses how modern software solutions can streamline data collection, storage, and processing, thereby improving efficiency and reducing the risk of errors.

4. The fourth part of the document addresses the challenges associated with data security and privacy. It stresses the importance of implementing robust security measures to protect sensitive information and ensure compliance with relevant regulations.

5. The fifth part of the document concludes by summarizing the key findings and recommendations. It reiterates the importance of a data-driven approach and encourages the organization to continue investing in data management capabilities to support its long-term growth and success.

engines is continued during the summer months it will greatly reduce the forest fire menace along the railroad. The coal-burning engines with their heavy trains, and heavy grades, increase the danger from sparks, falling live coals and wind.

VIOLATIONS AND ARRESTS

A man from Jackson, Mont. was tried before U. S. Commissioner on December 1st, charged with hunting in Yellowstone park. He was fined \$25. and costs. Ranger Burton Reese had made the arrest. On the following day a man from Laurel, Mont. was tried for killing an elk in the park. He was fined \$100. and costs, and made to forfeit his rifle as required by law. Chief Ranger McBride made this arrest.

Government property on which there are no wild animals was no obstacle to a young man with a gun at Hot Springs Reservation. He tried his marksmanship on a signboard in the vicinity of the Gorge, and after mutilating it pleaded guilty, and was fined by the Commissioner.

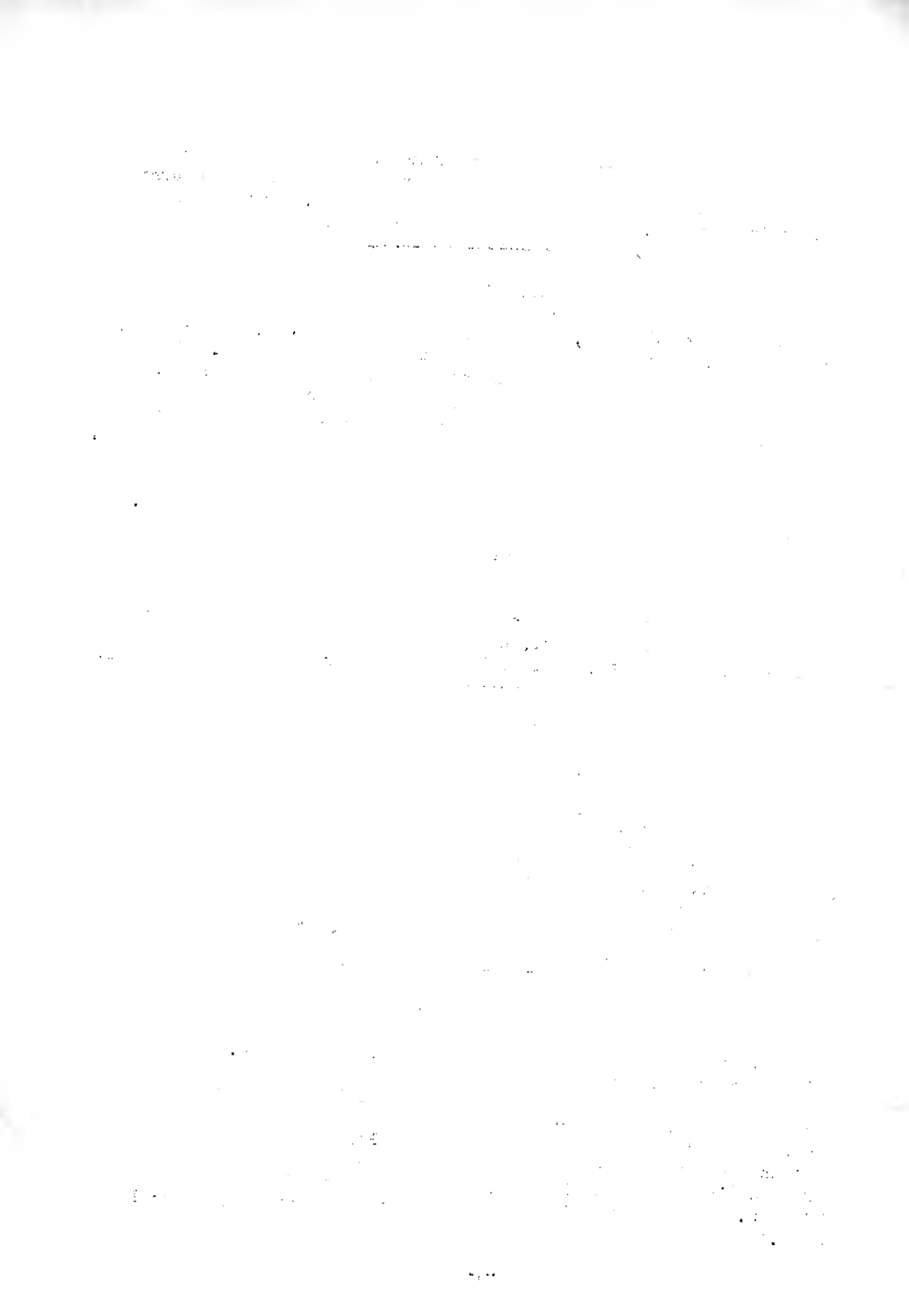
A decision in the case of a violation of rules and regulations governing Glacier Park, heard in the Federal court at Great Falls on December 12th, will be handed down during the January term.

SHIPMENTS OF EIGHTY ELK

Elk from the Yellowstone park herds were shipped in December to three points---12 to the City Park of St. Louis, Mo.; three to Platt National park, Sulphur, Oklahoma; and sixty-five to the Palisades Interstate park, New York. The latter were caught and shipped under the direction of Mr. Howard Eaton, who accompanied the shipment. The second day after the arrival of the elk at Platt park, one of them died, but the others seem to be doing nicely, and are a constant delight to the public. Due to the intense cold enroute, a number of those shipped to the Palisades Park also died.

RATE OF FIR TREES' GROWTH

A Douglas fir, measuring 5 ft. 6 in. in diameter, fell recently across the road between Park Entrance and Longmire Springs, in Mount Rainier park. This tree is typical of the large firs in that part of the park, and must have been a sapling of 100 years or more when Columbus discovered America. Its length was 180 feet, but as the top had been previously broken off at a point where the tree was 18 inches in diameter, its original height was much greater. The distance from the ground to the first branch was 105 feet.



Superintendent Toll reports that an examination of the annual growth rings of this tree indicates a definite rate of growth, which may be considered typical for that elevation (2,500 ft.), and gives an idea of the time that would be required for reforestation.

The probable rate of growth is as follows:

Age of tree, 1 ft. in diameter	25 years
2 ft. " "	69 "
3 ft. " "	103 "
4 ft. " "	168 "
5 ft. " "	332 "
6 ft. " "	633 "

This indicates an age from 1,000 to 1,200 years for the largest trees along the Nisqually Road, which are 8 feet in diameter. On December 30th, another fir, about 3 feet in diameter, fell across the road and temporarily blocked it.

WINTER SPORTS IN THE PARKS

Winter sports in the national parks are becoming increasingly popular. People are learning that some of the parks are quite as enjoyable in their winter offerings as in their summer allurements.

On December 28th a party of 125 mountaineers visited Mount Rainier for their trip. Most of them went on foot from Ashford to Longmire Springs and spent the night there. The following morning they walked to Paradise Inn and stayed there until January 1st. The time was occupied with trips to Sluiskin Falls, the saddle of Pinnacle Peak, McClure Rock, and with snowshoeing, skiing and tobogganing. Superintendent Toll and Ranger Flett accompanied them. On December 31st, a party of four men, including the Superintendent, made the trip to Camp Muir (elevation 10,000 ft.) partly on snow shoes. Tracks of martin, weasel and other animals were noted up to an elevation of about 7,200 feet, but above that no signs of life were seen. The mountaineers left the park on January 1st, most of them walking from Paradise Inn to Ashford, a distance of 18 miles. Snow shoes were not needed in reaching Paradise Inn; the depth of snow at that point was from two to three feet.

Among the several large parties visiting Yosemite park during the month was Director Mather with a party of prominent Californians, on the 27th and 28th. A Christmas-tree entertainment was held in the new schoolhouse, and two days were spent in skiing, tobogganing, and discussion of plans for improvements in the park. The Sentinel hotel reports an unusually large business during December, and especially during the holiday season.



Weather conditions in Rocky Mountain park during November and early December were so inclement that winter sports there were later than usual. The Colorado Mountain Club is arranging to again hold its winter carnival at Fern Lake, either February 20-23 or the week following.

Other parks that are entertaining winter travelers, although the snow and ice sports are missing, are Grand Canyon, Platt and Hot Springs.

A NATIONAL PARKS BANQUET

On the night of February 7th the War Western Travelers' Association will give a banquet at the Hotel Astor in New York City, the entire evening to be dedicated to the national parks. Covers will be laid for over 2,000 guests. The banquet room and foyer of the hotel will be transformed into veritable bowers--scenes from the various parks being in mind as part of the decorations. But the outstanding triumph of the affair will be the presentation to each guest of a splendid souvenir book on our national parks.

This banquet is merely an effort on the part of a bunch of whole-hearted men, farsighted and patriotic, who are going ahead on definite lines to push the national parks idea home to our tourists.

Among the guests of honor will be Director Mather, Asst. Director Cammerer, Horace M. Albright, superintendent of Yellowstone National Park, and W. B. Lewis, superintendent of the Yosemite National Park, the latter two now in the east; Robert Sterling Yard, executive secretary of the National Parks Association, and Charles Moore, chairman of the National Commission of Fine Arts. It was hoped Secretary Lane could attend, as the chief guest of honor, but he was unable to promise his presence.

Speakers for the evening on national park subjects are Hon. Huston Thompson, Federal Trade Commissioner; Bainbridge Colby, and Wilton Lackaye.

Details of the banquet will be given in our February NEWS.

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2. The second part of the document outlines the various methods and tools used to collect and analyze data. It highlights the need for consistent and reliable data collection processes to support informed decision-making.

3. The third part of the document details the specific procedures and protocols for data management and reporting. It provides a clear framework for how data should be organized, stored, and shared across different departments and levels of the organization.

4. The fourth part of the document discusses the role of technology in enhancing data collection and analysis. It explores various software solutions and digital tools that can streamline the process and improve the accuracy of the data.

5. The fifth part of the document addresses the challenges and risks associated with data management. It identifies common pitfalls and offers strategies to mitigate these risks, ensuring the integrity and security of the organization's data.

6. The sixth part of the document provides a summary of the key findings and recommendations. It reiterates the importance of a robust data management system and offers practical advice for implementing and maintaining such a system.

7. The seventh part of the document includes a list of references and sources used in the research. It provides a comprehensive overview of the literature and resources that informed the document's content.

8. The eighth part of the document contains a list of appendices and supplementary materials. These materials provide additional details and data that support the main text of the document.

9. The ninth part of the document includes a list of figures and tables. These visual aids help to present complex data in a clear and concise manner, making it easier for the reader to understand the findings.

THE MONTH IN THE PARKS

YELLOWSTONE

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Weather

December was anything but a normal month. The mercury reached 31 degrees below zero, on the 9th, and 30 on the 13th, the previous December record for cold being 25 degrees below, which was in 1900. The monthly mean temperature was 15.4 which is 6.2 below normal for December. A lower mean temperature has been recorded but twice--12 degrees in 1910 and 1916. The total snowfall of 27.7 is greater than for any other December on record except 33.9 inches in 1916 and 60.6 inches in 1899. The high winds caused much drifting of snow, and the wind movement was considerably above the average for December, while the sunshine remained about normal taking the month as a whole. Even the precipitation which was 2.13 inches was 0.31 above December's normal. The severe weather occurred mostly during the first half of the month, following the severe storm of late November.

The Coal Shortage

While the park had enough coal to tide it over to the end of the coal strike the residents of Gardiner were not so fortunate. After securing permission from the Service a delegation of Gardiner citizens opened a vein of coal located 60 feet east of the main road in the lower end of Gardiner River Canyon, about a mile west of the northern entrance. Its products have done little to relieve the coal shortage. It is light, slacks so easily that it is hard to burn, and its value has thus far been less than the cost of the work.

Animals of the Park

The special report on the elk will be found on page 3. There are now 412 tame buffalo, one having died early in December. Three hundred and eighty-five of these are being fed hay at the buffalo farm, the rest being scattered. The antelope are fed daily with the elk, near the northern entrance. One small band of about 35 insists upon remaining outside of the park, where they seem to fare well and are not molested. About 250 were counted on the feeding grounds. About 50 deer were fed with the elk near Gardiner and the same number near Mammoth. They are in good condition and are seen in other parts of the park, not all of them coming in to be fed. Eighteen mountain sheep were seen on Mt. Everts, and seven in the vicinity of Tower Falls ranger station. Moose were observed near West Yellowstone. Many coyotes were seen and signs of wolves have been noted.

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Miscellaneous

Ranger Skinner is collecting and preparing specimens for the park museum, also collecting and filing literature for information bureau and museum; this in addition to his regular work as a ranger when his services were needed.

Picture shows were held weekly at the Post Exchange at headquarters, under the cooperative arrangements of employes and residents of Mammoth and Gardiner, Mont. There was a community Christmas tree in the Post Exchange on the night of the 23rd. Church services were held every Sunday in the chapel.

GRAND CANYON

Weather

During the first part of December the weather was cold and disagreeable. Snow fell almost every day until the 10th, 16 inches in all. The latter half of the month was delightful, the days being cool but sunny and clear, and the nights crisp and frosty. The maximum temperature was 65 and the minimum 12 degrees below.

Approach Roads

Acting Superintendent Peters is of the opinion that this park does not receive more than 25 per cent of the transcontinental cars passing through Williams and Flagstaff, owing to the execrable condition of the entrance roads from these towns. He states that Coconino county lacks the money and interest to put these roads in shape, and that at his suggestion, the more public spirited businessmen of Williams have pledged themselves for various sums for improvement of the Williams road next spring. About \$2,000 had been promised up to January 1st, and others not being able to subscribe money have pledged several days work with teams, trucks, etc. In addition, a good roads day is to be announced, "upon which the entire male population of the town and its environs expect to work on this road". It is believed that, if this work is carefully planned and directed the Williams entrance road will be in shape through next season; in that case the portion of the park attendance arriving by automobile should increase appreciably. Continued efforts will be made during the winter to induce local officials and citizens to place the entrance roads in good repair for next season's travel.

Wild Animal Life

A herd of over thirty head of deer was seen on the Tonto Plateau beneath Isis Temple on the north side of the Colorado River. Several deer were seen and tracks noted in the forest on the South Rim within a mile or two of Grand Canyon village. During the past two months some effort has been made to attract and care for birds and small animals, particularly the Kaibab squirrel, said to be peculiar to the Coconino Mesa. The usual tourist to this park is keen to see the desert vegetation--the yucca, "our Lord's candle", the graceful lluvia d'oro clinging to some sheer cliff, the brilliantly flowered



cacti, or the astringent red sap of the sangre de dragon. Mr. Peters thinks that visitors would also be interested in the small animals if they knew about them.

One of the most noticeable features of these animals is their almost complete abstinence from water. The large cinnamon colored rock squirrel lives by preference in the rocky niches near the top of talus slopes. There is evidence to show that he never gets more than a few hundred yards from his home, and yet the nearest water-hole may be many miles distant. Antelope, in spite of their swiftness, range when undisturbed over a comparatively small area, usually dry, and evidently derive their only moisture from the brush they eat. Speaking generally, the animal life in the Canyon seems more fierce than elsewhere, probably due to the difficulty of even slightly subduing the everlasting hungār that desert animals seem to endure. Even the usually fierce rattlesnake is supplemented by the "sidewinder", smaller, faster and more dangerous in that he strikes without first coiling; while the skunk which in other places pays strict attention to a skunk's business; unless disturbed, is prone to attack one when sleeping out. Foxes, coyotes, mountain lions and cats are rather abundant. Rabbits are on the increase on the mesas.

Bird Life

Bird life is quite abundant. During his three days' visit in December, Prof. Swarth of the University of California, listed twenty-six varieties. Occasionally the visitor may see the remarkable road runner. He is built for speed and quickness, and has doubtless lost his power of flight, for even when pursued will not take the air. His diet consists of the gray rock lizzard (the "swift" of the East), with occasionally a scorpion or horned toad. These birds are particularly protected, because it is believed that they kill rattlesnakes.

Exploration of Cave in Horseshoe Mesa

Exploration of the limestone cave under Horseshoe Mesa has begun. It is reached from the Grandview Trail, is easily accessible, and although quite small at the entrance the cave at once becomes quite spacious. The floor is very irregular owing to deposits fallen from the top. Should the explorations result in finding extensive underground formations, readers of the NEWS will be given further details on this cave in the Grand Canyon.

Miscellaneous

Preliminary survey for a rim road from El Tovar to Grandview was pushed. A total of 547 miles was covered by rangers on patrols. Automobile traffic on the Hermit Rim Road is now under control; barriers have been erected to keep large touring cars from dangerous spots, and owners of private machines have been forced to conform to schedule. Patrols were made to Indian camps on the South Rim, and foot trails along the Rim and in the woods were kept open. Owners of dogs in Grand Canyon have been listed and warned to keep them in yards or chained up. During the month rangers met the incoming

1. The first part of the report deals with the general situation of the country.

2. In the second part, the author discusses the economic development of the country.

3. The third part of the report is devoted to the social and cultural aspects of the country.

4. The fourth part of the report discusses the foreign relations of the country.

5. The final part of the report contains the author's conclusions and recommendations.

trains to give visitors information and guidance. This service seems to be appreciated by the public.

YOSEMITE

Weather

The mild weather during the month melted the snow rapidly, leaving only patches on the north side of the valley. On December 31st there were 23 inches of snow at Glacier Point, and seven in the valley.

General

The rock walls of the approaches to Stoneman bridge were finished during the month. All that remained to be done was to complete the fill on the approaches. This bridge is receiving a great deal of favorable comment from visitors. A clubhouse and dormitory for the park rangers is now a certainty, having been made possible by generous contributions from a group of prominent California business men for that purpose.

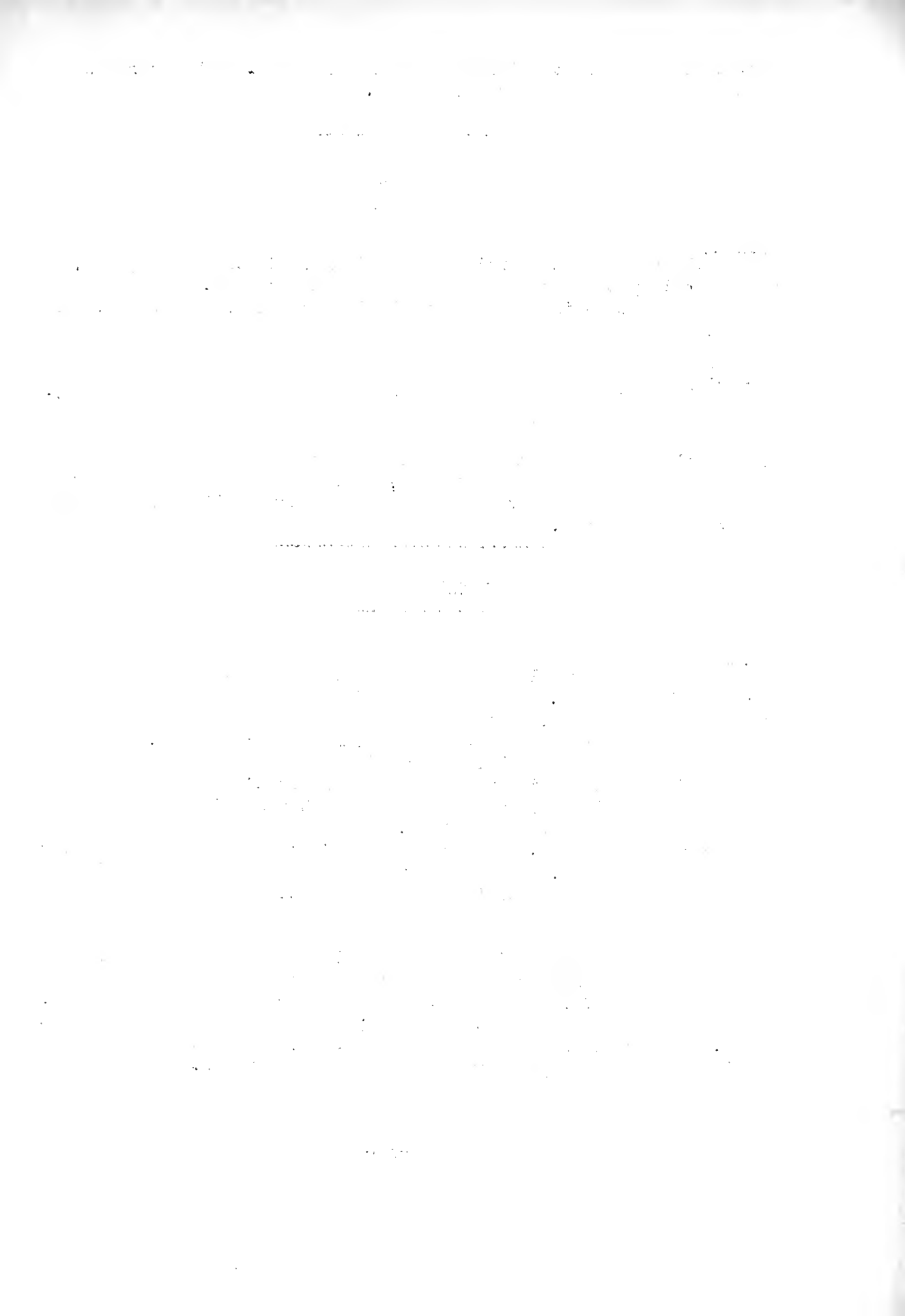
MOUNT RAINIER

Weather

An unusually cold spell was experienced during the week from December 7th to 14th. A temperature of zero was recorded at Park Entrance and seven below at Longmire Springs on December 12th. Both of these are lower than the previous minimum temperatures. During the seven years that weather observations have been kept at Longmire Springs the previous minimum temperature recorded was 4 degrees below zero. At Paradise Valley temperatures of 8 and 7 degrees below were recorded on December 11th and 12th. Plumbing was frozen in most of the occupied buildings. The remainder of the month was moderate, with little snowfall. On December 15th there was 62 inches of snow at Paradise Valley, and on the 31st 34 inches.

Patrols

Superintendent Roll and Ranger Flett made a trip from Longmire Springs to Indian Henrys Hunting Ground on December 20th, returning next day by way of Tahoma Creek. Tracks of mountain goat, coyotes, and other animals were seen. A colony of beavers was found on Fish Creek. The trail bridge across Tahoma Creek, just below Tahoma Glacier, has been completely washed out by high water.



Travel

For the year 1919--January 1st to December 31st--55,186 people visited the park, using 11,754 automobiles. The figures for 1918 are 44,177 people and 9,291 cars, an increase of 11,009 or 25 per cent. During December there was no private automobile travel, as the road to Tacoma is closed for construction work.

GLACIER
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Weather

Extremely low temperatures prevailed in all parts of the park during the first half of the month. At headquarters the minimum was 34 below, recorded on the 9th, and the maximum 49 above, recorded on the 25th. Moderate weather prevailed during the last half of the month. Lake McDonald was frozen over during the first half of the month but is again open. Extreme low temperatures were reported from the several stations--from 30 to 45 degrees below zero.

Chief Ranger Dorrington reports that on the night of December 16th the east side of the park was visited by a terrific wind and snowstorm. No damage was done to government or hotel property, except to the telephone line. Nine freight cars were blown out clean from a freight train which was crossing a bridge three miles west of Glacier Park station. He also reports that cattle standing in a barn at Lubec were frozen to their hockjoints, and sheep took refuge under the chalets, as many as fifty in a bunch. On the adjoining Indian reservation there were enormous losses of cattle and horses during the severe weather.

ROCKY MOUNTAIN
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Weather

A period of over two weeks of constantly warm, dry weather made a break in a winter otherwise unusually severe. The eight weeks, from about the middle of October to the middle of December, brought long and frequent storms, extreme cold, and heavy snowfall. The week of December 8-14th broke all records for extreme, long-continued cold. On December 8th and 9th the thermometer reached 27 degrees below zero, this being 7 degrees colder than the lowest temperature previously recorded at the Government station, in nine years, and remained around this point for thirty-six hours. The last two weeks of December, however, offered the other extreme of almost summer-like mildness. Snow drifts are numerous, deep, and very hard packed, and most pasture lands are quite bare, providing good forage for grazing animals, both wild and domestic.

Wild Animals

The severe weather drove most of the deer and practically all of the predatory animals to lower altitudes. At the end of the month coyotes were returning. A deer was found that had been killed by a lion near the Fish Hatchery, on the Fall River Road. Two deer were also found that had been killed by coyotes, near the same spot. Sixty-eight elk, 65 mountain sheep, and 125 deer have been reported, all in good condition.

Roads and Trails

The North St. Vrain road, from Lyons, is the only road into the park open to travel, all others being closed because of snow conditions. The Rocky Mountain Parks Transportation Company has kept the North St. Vrain road open at great expense, to enable them to bring in the mail and its few passengers.

HOT SPRINGS
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Examination of Physicians

The regular quarterly examination of the Federal Registration Board was held December 16th and 17th, in the Superintendent's office. Three of the five applicants passed the examination, and have been recommended to the Service for registration on list of registered physicians.

Maintenance and Improvement

All the magnolias, elms and other trees along the Reservation Front and the lower slope of Hot Springs mountain have been trimmed to maintain a symmetrical appearance. The same treatment has been carried out with trees along Fountain street and around the old residence of the superintendent.

SEQUOIA AND GENERAL GRANT
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Weather

The mean temperature in these parks was about 49 degrees, with a little snow on the higher altitudes.

Maintenance and Improvements

The California state highway engineers have completed their line of survey of the newly proposed highway between Three Rivers and the west boundary of Sequoia park, where they have connected up with what is designated as the Elk Park road on the Middle Fork of the Kawoah River. Twenty-five miles of the Giant Forest Telephone line has been finished, and seven additional miles of the Giant Forest road has been graded and water ditches constructed thereupon preparatory for winter storms.

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The first part of the report deals with the general situation in the country. It is noted that the economy is in a state of stagnation and that the government is unable to meet its obligations. The report also mentions that the population is suffering from a lack of food and shelter.

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The second part of the report deals with the political situation. It is noted that the government is corrupt and that the opposition is being suppressed. The report also mentions that the military is a major force in the country and that it is being used to maintain the status quo.

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The third part of the report deals with the social situation. It is noted that the majority of the population is poor and that there is a high level of unemployment. The report also mentions that the education system is in a state of decline and that the health care system is inadequate.

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The fourth part of the report deals with the international situation. It is noted that the country is isolated and that it is being treated as a pariah state. The report also mentions that the country is being targeted by international terrorism and that it is being used as a base for the export of drugs.

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The fifth part of the report deals with the future of the country. It is noted that the country is in a state of crisis and that it is facing a choice between reform and revolution. The report also mentions that the international community is not doing enough to help the country and that it is being used as a pawn in the Cold War.

SECRET

The sixth part of the report deals with the recommendations of the commission. It is noted that the commission believes that the only way to bring about change in the country is through a complete overhaul of the political system. The commission also recommends that the military be reformed and that the economy be liberalized. Finally, the commission recommends that the international community provide more aid to the country and that it be allowed to participate in international organizations.

Wild Animals

Deer in large herds are often seen near Hospital Rock and Clough Cave, and a few elk have been sighted in Shepherd Cove. All the animals were in excellent condition, as there is an abundance of new green feed for them.

ZION

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Weather

An unusual amount of snow fell, putting the mail service out of commission for six consecutive days; but the warm winds and dry ground soon consumed the moisture. On December 5th the thermometer registered zero, but spring weather prevailed soon after.

Road Conditions

The storms have made the roads impassable because of the many rocks which were dislocated by the freezing and thawing weather. The District engineer has assured Acting Superintendent Ruesch that all plans have been made to put the road in good condition for the coming season.

PLATT

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Weather

Rainfall for the month was 1.10 inches, which added to the previous record brings the total for the year up to 43.70 inches.

Waters from the Springs

Five hundred and forty-five gallons from the springs were shipped, which with the 2,295 gallons taken away by visitors, make a total of 2,840 gallons besides that consumed by the public at the springs.

CRATER LAKE

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Weather

On December 31st there were 47 inches of snow at Anna Springs, which is about the average for that date. The mean maximum temperature for the month was 39 degrees and the mean minimum 15. This park will be practically dormant until the spring weather comes.

1. The first part of the document discusses the importance of maintaining accurate records of all transactions. This is essential for ensuring the integrity of the financial statements and for providing a clear audit trail. The records should be kept up-to-date and should be easily accessible to all relevant parties.

2. The second part of the document outlines the procedures for handling discrepancies. It is important to identify any errors as soon as they are discovered and to investigate the cause of the error. Once the cause has been identified, the necessary steps should be taken to correct the error and to prevent it from recurring in the future.

3. The third part of the document discusses the role of the internal control system. This system is designed to ensure that all transactions are recorded accurately and that the assets of the organization are protected. The internal control system should be reviewed regularly to ensure that it is effective and that it is adapted to the changing needs of the organization.

4. The fourth part of the document discusses the importance of communication. It is essential to ensure that all relevant parties are kept informed of the progress of the work and of any issues that arise. This can be achieved through regular meetings and through the use of clear and concise communication channels.

5. The fifth part of the document discusses the importance of documentation. All transactions should be supported by appropriate documentation, such as invoices, receipts, and contracts. This documentation should be kept in a secure and accessible location and should be reviewed regularly to ensure that it is accurate and complete.

WIND CAVE

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Weather

It has been an unprecedentedly early and severe winter here, with an unusual amount of snow and bad drifts, making the park practically snowbound for two weeks. The game animals are reported to be in good condition.

CASA GRANDE-NATIONAL MONUMENT

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Weather

The first part of December, for ten days, was cloudy and rainy. The remainder of the month was very pleasant. So far southern Arizona has had a very open winter. Range and ranch conditions are good. A good crop of long staple cotton has been harvested in the Salt River and Gila River valleys, and the average price of 80¢ per pound has made local conditions good.

Travel

During the month 470 visitors and 168 automobiles entered the reservation. This brings the total for the seasonal year, beginning October 13th to 1,189 visitors and 458 automobiles. The December totals compare very well with the total of a year ago when there were 169 visitors and 85 automobiles. From October 13th to December 31st, 1918, there were 470 visitors and 266 automobiles. The calendar year of 1919 shows 4,534 visitors and 1,954 automobiles. Accurate figures for 1918 are unavailable, because Mr. Pinkley took charge in April of that year and no previous records exist.

TUMACACORI NATIONAL MONUMENT

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Relics

Several pieces of copper, found by an Indian woman, several miles west of Tumacacori Mission, and given to Custodian Pinkley, have been placed in the state museum at the University of Arizona. This incident brings to mind the publicity that was given a few months ago throughout the state to the supposed finding of some candlesticks at the Tumacacori Mission. Mr. Pinkley, after examining them stated that they were not found at this mission, but were probably procured in Mexico and brought across the border by the man who was trying to sell them. The National Park Service, would not, of course, allow unauthorized excavation on any national monument; and the Federal laws are very stringent on this matter.

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Mr. Pinkley reports that much interest is being shown in Tunaca-
cori Mission by the people of Nogales. The Chamber of Commerce is
working to acquire title to some patented land immediately west, and
plans are under way to reserve some public domain in that direction so
that the monument may extend to the state highway. This is necessary
in the future parking plans as outlined by Mr. Charles P. Punchard, the
landscape engineer of the National Park Service, who visited the monu-
ment last spring and studied the location from a landscape viewpoint.

PERSONAL NOTES

Among the visitors of the past few weeks to the National Park
Service were the following:

Gov. R. D. Carey of Wyoming; and Mr. Chas. S. Hill, Immigration
Commissioner of Wyoming

Mr. Arthur Page, president of Doubleday, Page & Co.

Mr. W. N. Noffsinger, president of the Park Saddle Horse Co.,
Glacier Park, and Mr. Howard H. Noble, manager of the Glacier Park Hotel
Co., and Mr. Roe Emery, president of Glacier Park Transportation Co.
and Rocky Mountain Parks Transportation Co.

Mr. C. A. Hamilton, of Yellowstone Park

Mr. John S. Drum, director of the Yosemite National Park Co.

Dr. Herbert E. Gregory of the Department of Geological Sciences
of Yale University, and Mr. Alexander Hume Ford, editor of the Mid-
Pacific Magazine, Honolulu

Mr. George K. Davol, construction engineer, of San Francisco

Mr. Ford Harvey, president of the Fred Harvey system, operating
El Tovar Hotel and other properties; also Judge T. J. Norton, general
solicitor for the Santa Fe.

Mr. H. H. Hunkins, manager of the Bureau of Service, National
Parks and National Monuments, U. S. Railroad Administration, of Chicago.

Mr. Chas. Sheldon, game conservationist, of Washington and New
York. Mr. Sheldon is particularly interested in the Yellowstone elk,
the Mount McKinley wild animals, and Grand Canyon explorations.

Mr. Chas. McCaffree, Immigration Commissioner of South Dakota.

Assistant Director Cammerer will make a flying trip to some of the
parks and monuments in February.

ATTENTION!

If anything of interest to you or other readers of the PARK
SERVICE NEWS occurs with relation to your park or monument, please let
us know about it. It will help the Service, and what helps one helps
all in this work.

These NEWS items should be mailed at the same time as are the
monthly reports of the superintendents and custodians, or as soon there-
after as possible, in order to be available. They should reach the

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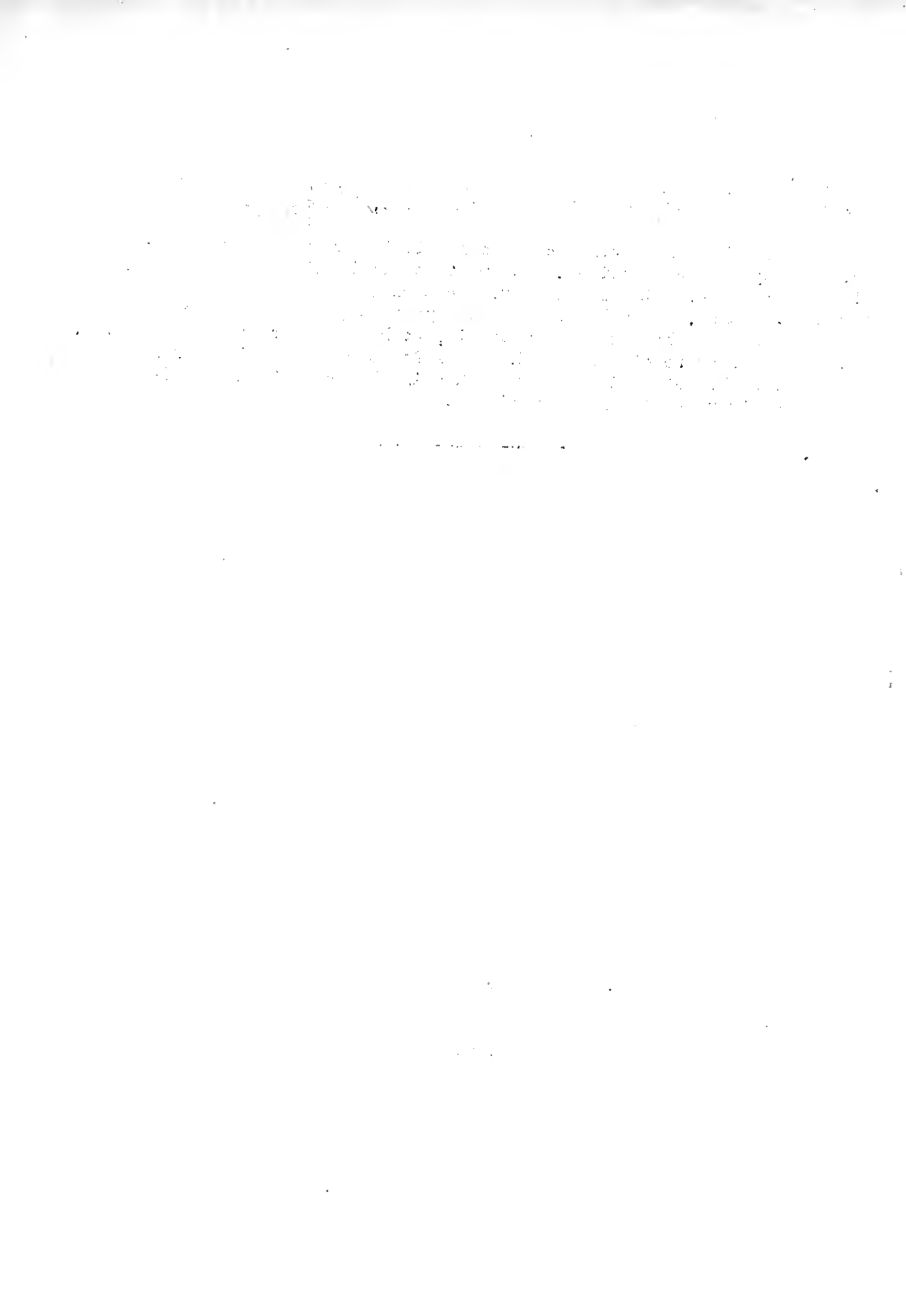
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editor's desk not later than the 15th of the month, and be addressed to the Director of the National Park Service, "Park Service News".

The value and service of this little bureau paper can be increased by your cooperation. We want you to look forward every month to the coming of this NEWS letter, and perhaps get some inspiration from it. Also, we would like to have your suggestions and constructive criticisms as to how we may improve it, both in appearance and contents. The heavy pressure of work on the small force available in Washington makes every bit of assistance furnished in the form of interesting items doubly valuable and appreciated.

(1786)



DEPARTMENT OF THE INTERIOR
National Park Service.

By direction of the Secretary of the Interior this publication is issued as an administrative report and is required for the proper transaction of public business.

No. 19.

August, 1923.
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ISSUING THE BULLETIN.

It seems that this little Bulletin is predestined to appear on the schedule that the Philistine, by Elbert Hubbard, was published "Every once in a while." Its preparation has to be squeezed into moments of spare time during the working day when other official business is not so pressing, but the very fact that no number has been issued since about a year ago is an excellent example of how our small office force is busied during the days and months that pass.

At this time, however, when every park and monument is seeing a travel that is making every employee of the Service show the best effort within him or her, it seems most desirable to get a word about important happenings in these areas in which we are all interested to the others in the field, just as a bit of friendly contact.

NEW BUILDINGS.

With the exception of the hotel which the Union Pacific proposes to construct in Zion Park, and for which it is now getting out the necessary lumber, no major building operations are immediately planned by any of the other concessioners. Facilities, therefore, will be generally those which existed last season. In Yellowstone, however, the new addition to the Lake Hotel will be in operation this summer, and the Yellowstone Park Camps Company will have increased facilities available at Mammoth with the erection of a new central building and 50 new cabins.

Under the law all plans for structures with which the Federal Government is concerned must be submitted to the National Commission of Fine Arts. As a result the plans for the Zion Park hotel were submitted to the Commission, and approved without hesitation as interpreting with feeling and design the type of building that should go into that particular national park. The architect of the Union Pacific who designed this hotel spent a number of days in the East going over old Indian records in New York and Washington with a view of developing motifs that could be used for the interior decorations and design. He plans furthermore to extend his research work throughout the Southwest, intending particularly to visit our superintendent of the Mesa Verde National Park, Jesse Nusbaum, who is a noted authority on Indian architecture and customs. This hotel bids fair to be the best designed in the entire National Park system.

LOSS AT HOT SPRINGS.

Hot Springs, Ark., suffered a severe loss when the Arlington, the chief hotel on the Government reservation, was destroyed by fire on April 5th, and was further stricken when the city was later visited by flood and fire. Although considerable property damage resulted, comparatively little damage was done in the park. Decision has been reached to build the new Arlington Hotel off the reservation.

SECRETARY'S INTEREST IN THE PARKS.

Since taking over the Interior portfolio Secretary Work has visited Hot Springs National Park where he went very carefully into some of its problems, and before the summer is over it is his intention to see others in the system.

In his party at Hot Springs were Surgeon General Cummings of the United States Public Health Service, Hon. Louis C. Cramton, chairman of the subcommittee of the Committee on Appropriations handling Interior Department appropriations, Hon. Charles H. Burke, Commissioner of Indian Affairs, and Director Mather.

Because of his past medical experience his interest in the Hot Springs was to a large extent professional, and naturally the medicinal values of the natural hot waters especially challenged his attention. Although thousands of visitors have attested to the efficacy of these waters in relieving certain diseases, the Secretary has thought that scientific inquiry of them should be made through physiologic experiment and clinical test to determine their value as a therapeutic agent. Such a study would enable the Government to develop these waters, as well as others of a similar character on its reserves. This question has been put up to the Division of Medical Sciences of the National Research Council, and whether or not that body can undertake the investigation will be shortly decided.

There is much romance involved in the history of Hot Springs. Legends have described how adventurous Indian tribes battled from time to time for the control of the hot waters in which they believed the "Great Spirit" to be ever present, and how a truce was finally declared under which their benefits were extended to all tribes as a sort of communal affair. The Spaniards are said to have reached the Springs in 1542, and old court records show that while in the possession of this country, just before its passing to the United States, they made a futile attempt to prevent its being included in the Louisiana Purchase of 1803.

PRESIDENT'S VISIT.

Since the Hot Springs trip the Secretary, as a member of President Harding's party, has also seen something of Zion and Yellowstone Parks.

By this time, of course, facts concerning the visits to these two reservations by our Chief Executive are quite generally known, but it may be of interest to the readers of the Bulletin to learn something of them from the official reports made by Superintendents Ruesch and Albright.

The presidential party, in 21 automobiles, entered Zion on June 28th, and the entire trip from Cedar City and return, a distance of 135 miles, was made without the slightest mishap; not even a tire was punctured. At Springdale, just below the park, a unique reception was extended it. Two valiant old-timers, John Dennett and O. D. Gifford, led a village fife and drum corps in lusty welcome, and the tunes they played were the same that greeted President Brigham Young of the Mormon Church on his visits to this part of the State many years ago. At the entrance to the park was stationed the Dixie College Band of St. George, which, inspired by the occasion, never performed better. While the party ate lunch at the camp conducted by the Union Pacific a chorus of 100 voices from the St. George tabernacle choir entertained them.

The President enjoyed a varied day and explored by horseback the youngest of the National Parks. He marveled at what he saw and said "the greatest creations of the Almighty in the majestic natural wonders of Zion inspire within me a deep religious feeling." And to the interested audience that gathered to greet and entertain him he paid this compliment: "While I am the first President of the United States to visit your magnificent park, you people of Southern Utah may rest assured that my impression is so favorable that I am sure all my successors will follow me here."

Mrs. Harding also spoke and said that the visit was one of the greatest experiences of her life, which she would not have missed for anything.

On June 30th, at 6 a.m., the train carrying the President's party arrived at Gardiner, and departed again at 7 p.m., July 1st. The two days in Yellowstone Park were full of interest and pleasure for the visitors. All arrangements were carried out on a schedule determined in advance by Superintendent Albright, and everything went off with the utmost precision. As an illustration of the detail with which plans were laid, the arrival of the party at Upper Geyser Basin was so timed that they were greeted with an eruption of the beautiful Riverside Geyser with wonderful water and steam effects.

The night of the 30th was spent at Old Faithful Inn, and at 8:53 a.m. the next day the party left, crossed the Continental Divide, stopped 15 minutes at the West Thumb of Lake Yellowstone, and shortly after 11 a.m. were stopped at the Fish Hatchery on Lake Yellowstone, near the Lake Hotel, by two bears which had been held up a tree by a ranger. The President made friends with the bears, much to the delight of the picture men in the party. The Canyon Hotel was reached for luncheon, and after this a trip was made along both rims of the Grand Canyon. The party returned to Mammoth via Dunraven Pass, with several stops en route, and later entrained at Gardiner.

Director Mather accompanied the party through the park, riding with Secretary Work, while Superintendent Albright made the trip with the President and Mrs. Harding.

There is still one other park in the President's western itinerary, Yosemite which he will visit on his return from Alaska shortly, and about which we will have something to tell in the next Bulletin.

OTHER NOTABLE VISITORS.

It was a source of much satisfaction to the Service when Hon. Martin B. Madden, chairman of the Appropriations Committee of the House of Representatives, and Congressman Cramton of the same committee, assented to Director Mather's proposal that they leave the U. S. Transport Grant, on which they were proceeding to Alaska, at San Diego, California, long enough to visit Sequoia and Yosemite Parks and retake the boat again at San Francisco. As he pointed out to them, such a trip would give them first-hand knowledge of actual conditions in these two reservations which would be particularly helpful in passing on park appropriations. Heading a party, containing also Congressmen Barbour and Fredericks of California, they entered Sequoia on May 21st, where they spent several days before proceeding to Yosemite. In both of these parks the Appropriations Committee members had a good opportunity to note developments that had taken place in the past several years, as well as some of their immediate needs. In looking over the construction work on the new Middle Fork Road in Sequoia Mr. Cramton was much impressed with its quality, but thought it should be a two-way thoroughfare instead of one with less width. At his suggestion the road will be widened and a deficiency appropriation requested to meet the increased cost. Mr. Madden was similarly impressed with the necessity for widening and straightening the Wawona Road in Yosemite over which he traveled in going into the Valley.

Upon the return of the congressional party from Alaska where they went at the invitation of the Secretary of War, arrangements were made to have them visit several of the parks. Headed by Senators Warren of Wyoming, Robinson of Arkansas, and Ladd of North Dakota, they stopped at Mount Rainier, Yellowstone, and Rocky Mountain en route to the East. In each of these parks they were shown the principal points of interest and altogether they were well taken care of and given a very enjoyable trip.

OPENING YELLOWSTONE.

Acting as personal representative of the President and Secretary Work, Dr. John Wesley Hill, Chancellor of the Lincoln Memorial University of Cumberland Gap, Tennessee, was the speaker of the day at the formal ceremonies which opened the fifty-first season at Yellowstone Park on June 20th. He delivered an eloquent address on some of the important questions of the day, but dwelt particularly on the necessity for complete conservation of the National Parks. Quoting Superintendent Albright, no finer or more powerful expression on behalf of complete preservation of the parks has been uttered.

Especially warning against any commercial exploitation of the parks, Dr. Hill said:

"Commercialism is the peril of our National Park system. Regardless of all facts and figures, arguments, appeals, and threats, any plan, however meritorious on its face, for the commercial exploitation of parks, must by the very nature of its aims and purposes be immediately doomed to failure. Good projects, bad projects, indifferent projects, all must face the same fate, for it is at last the established policy of the Government that our National Parks must and shall forever be maintained in absolute, unimpaired form, not only for the present, but for all time to come, a policy which has the unqualified support of the great American now in the White House, whose sole ambition is to administer the Government without fear or favor in behalf of the peace and prosperity, happiness, and contentment of the entire people of this country.

"This is the fixed policy of the administration, and I can assure you it will not be modified. It will not be swerved a hair's breadth by any influence, financial, political or otherwise. If rights are granted to one claimant, others must follow, so a precedent must not be established. It would inevitably ruin the entire national park system. The camel long ago pushed its nose under the tent at Niagara, and he has at least his shoulders inside. If we would escape the tragedy of Niagara, we must beware of its subtle beginnings.

"Yellowstone history is replete with crises where the friends of the park and the park idea have had to fight with a heroism worthy its explorers and discoverers to retain it intact against the bold and presumptuous claims of the advocates of special privilege, determined to commercialize this land of wonder, to build railroads through it, tunnel its mountains, dam its lakes and streams, and secure stranglehold monopolies with small compensation to the Government and total loss to the people."

Declaring that the national parks arose from the needs of the people, Dr. Hill added:

"What greater service can a Nation render than to set aside these vast breathing spaces for the life, health, and happiness of a loyal people? Here the solidarity of the Nation is illustrated. Coming by railroad, auto, and caravan from all sections of the land, representing all the walks and stations of life, over a million of our fellow-citizens last year gathered in happy companionship in the intimate enjoyment of the wonders of nature, learning not only what the park has to offer, but from one another the attractions of other sections of the country, thus forming new friendships and a higher, broader type of citizenship.

"Who will gainsay that these patriotic pilgrimages develop the highest potentialities of national pride, contentment, and efficiency? They encourage fraternity, shatter provincialism, engender pride of possession, and contain the antidote for national restlessness. They inspire love of nature, trees, flowers, brooks, lakes, snow-clad peaks, the wild life encountered everywhere amid primordial surroundings."

EDUCATING THE PUBLIC.

Each year shows an increased desire on the part of the traveling public to learn more about the natural phenomena of the parks. Formerly the bulk of the visitors were satisfied with the recreational advantages that were available, and while this feature alone still appeals to many, it is surprising to note the growing demand for education in connection with a pleasure trip. To meet this in part a nature-guide service was established in Yosemite several years ago, and the scope of this work has been gradually enlarged to include most of the other parks as well.

This summer visitors to Rocky Mountain Park will find a similar service available for the first time under Government auspices. The work will be in charge of Mr. J. M. Johnson, of Ridgewood, N. J., who is a lecturer on natural history subjects for the Board of Education of New York City and the National Association of Audubon Societies, and who is intimately acquainted with the Rocky Mountain region, having spent five summers traveling and camping through the mountains from Colorado to Wyoming.

Plans for the work contemplate the giving on successive evenings an illustrated talk at different hotels in the park and in the near-by village of Estes Park. The evening talk is to be followed the next morning by a short leisurely field trip, starting from a point within a convenient distance from the hotel. On these field walks the flowers, trees, birds, and animals will be identified and the geological features of the park will be explained by the nature guide. It will be Mr. Johnson's aim to encourage conservation of the columbine, the State flower of Colorado, assist in protection of forests from fire, and to generally help visitors to better understand and enjoy what they see.

PLEASING THE VISITORS.

In the administration of the National Parks it is quite surprising, and interesting too, to see the diverse ideas that the public has relative to methods of management. Of course, constructive criticism is always invited, and frequently suggestions advanced by observant visitors are quite helpful. That it is impossible to please all, however, is almost daily evident.

For instance, some would have every form of convenience, including a network of improved highways connecting all sections of the park. Opposed to this extreme is the other element that would keep the parks absolutely in their natural wild and primitive state, and if they had their way the automobile in most instances would be barred and every visitor would either ride a horse or hike. At night he would seek the shelter of his tent or sleeping bag; there would be no hotels to offer him hospitality.

Here is a good example of the case in point. Last summer, following his visit to one of the National Parks known for its delightful trail trips, a former officer of the Interior Department gave the Service the benefit of his ideas as to how certain improvements could be inaugurated in the interest of the public. He laid emphasis on the fact that the trails should be more completely signed, and such signs should indicate distances between stopping places in both directions. This, he said, would give the traveler a better opportunity to gauge his trip and would enable him to tell how much time he would have for side trips, etc.

Contrary comment, however, comes through a landscape engineer high in his profession and who has also given considerable study to the problems of the National Parks: "It occurs to me to call attention to a comment I received a few weeks ago in Florida from an Englishman who operated a 'dude ranch' for many years near the Teton Mountains in Wyoming and is now operating a fishing and sporting camp in Florida. He mentioned that one of his reasons for moving away from his Wyoming establishment was that the mountain trails there were becoming too sophisticated, and he spoke of the irritation to himself and to the campers and hikers who were his patrons caused by the well-intentioned placarding of the trails with sign boards giving directions and mileage distances to various points. With their connotation of automobile roads and their contradiction of the sense of remoteness and wildness and freedom, I really think there is a good deal in the point he made, that where people go out into the relatively wild country for the enjoyment that one can get only from the wilderness, it is really very important that any trail markings should not be such as to destroy the impression that a certain amount of alertness or observation and 'woodcraft' is still needed to prevent one from getting lost. A wilderness in which one can not by any possibility get lost ceases to be a wilderness."

RECLASSIFICATION.

The officials of the Department appointed to prepare the reclassification lists are hard at work, with their coats off and electric fans going. The Assistant Director expects shortly to go into lengthy conference with them on the various field schedules to be adopted. This is a good-sized job in itself.

POLITENESS.

Superintendent Ruesch has very definite ideas of the duty of Zion Park employees towards the visiting public, and they are so admirably expressed in a memorandum which he has just issued that they may well serve as a model in all of the parks. He says:

"Perhaps I am foolishly prejudiced, but I believe that rudeness on the part of any employee of this service manifests a general weakness; and on the strength of that belief I am demanding plain, every-day civility of every one connected with this force. Undoubtedly politeness pays in business, but it also pays elsewhere, and pays whether in dollars and cents or not. In terms of things most desirable, it is one of the greatest dividend producers. Judging from every viewpoint, the English language has no finer terms than 'Excuse me!' 'Thank you!' and 'Please!' They should be a part of the equipment of each member of this organization. They are wholesome and sunshiny words; they make life richer and better for both the user and the hearer. This is a motto that in this organization none must forget. The first offense will merit rebuke and the second will be sufficient cause for dismissal."

Here is a pretty good example of the value of politeness as narrated by Superintendent Toll, the incident taking place in his park: On two occasions, while on an official trip, Acting Chief Ranger Allen overtook a man and his wife and gave them a lift in the truck he was driving as far as he was going. He told them what to see in the park and how to get there. The incident was of no particular importance, but just one of the courtesies that are extended to visitors during the day's work. Some time later he was surprised and pleased to receive the following communication from a member of a prominent New York brokerage firm:

"Perhaps I need not tell you how much of the spirit of the west your kindness added to my brief stay at Estes. Of the men I met, you remain most vividly in my reveries, and I'm grateful to you for your hospitality to a stranger."

ALTITUDE AND THE AUTOMOBILE.

A very excellent article appeared recently in Motor Land, the official organ of the California State Automobile Association, under the caption "How Auto Engines Lose Power in Mountains." As there is considerable doubt in the minds of many just what forces operate to reduce the efficiency of their automobiles while traveling some of the mountain roads in the National Parks, it seems not out of place to print part of the article in this paper:

"If half the powder were taken out of our shotgun shells we would hardly expect the ducks we shot at to accept our feeble invitation to come down. Likewise we should not expect a gasoline engine robbed of half its explosive charge

of mixed fuel vapor and air to respond with vigor when 'stepped on.'

"Engineers have long known by how much larger to make internal-combustion engines designed for working at high altitudes, such as engines for mine hoists and for tractors intended for use on the high plateaus. The average automobile driver, however, while he usually is aware that he may expect trouble from lack of power if he attempts to haul a heavy load up a steep grade in a high altitude, does not generally know how much decrease of power to expect at a given elevation nor why there is a decrease.

"Every ordinary gasoline engine, whether in a tractor, in an automobile, or stationary, when operating, explodes a charge of mixed gasoline and air whenever a spark passes between the spark plug points in the compressed mixture. The explosion force shoots out the bullet-like piston, which, however, instead of flying far away, moves only a short distance, pushing meanwhile with great force on a crankpin, thereby turning the crankshaft of the engine. If the amount of the mixed fuel gas and air be the largest possible, and the proportion of fuel to air be correct, a powerful explosion results. But if the amount of the mixture be small, the resulting explosion force will also be small.

"When an ordinary gasoline engine is running, each of its pistons in its cylinder acts as an air pump during the intake stroke. It creates a partial vacuum within the space above the piston. The outside air, being under pressure (14.7 pounds per square inch at sea level) rushes in through the carburetor, manifold, and intake valve to fill the vacuum. Incidentally the gasoline vapor is mixed with the intruding air. If the engine is in the high mountains, the outside air pressure will be much less (10.2 pounds per square inch at 10,000 feet elevation); also the free air will be expanded and therefore less dense; hence less weight of air will get in and each explosion will be correspondingly weak.

"Besides loss of power at the higher altitudes, there is another effect that may prove disconcerting to automobile drivers not used to the mountains. They will find the engine apparently getting dangerously hot as evidenced by furious boiling of the cooling water in the radiator and water jacket. Use of a thermometer would show a temperature possibly five or six degrees lower than what it was a few hours before at sea level, even though there was then no boiling. A well-known principle of physics is that lowering the pressure in the air above a liquid lowers the boiling point temperature of the liquid."

SERVICE NOTES.

Superintendent Owen Tomlinson of the Mount Rainier National Park assumed control on the 15th of July, thereby relieving Acting Superintendent C.L. Nelson, detailed by the Geological Survey, who has been acting for almost two years pending the selection of a permanent man. Mr. Nelson will remain in the park for about a month longer to acquaint Mr. Tomlinson with details of park administration, and will then resume his old duties with the Survey. We will miss Mr. Nelson who will leave with an unusually fine record during his brief detail with our park forces. We feel, however, that "once a park service man, always a park service man," will result in Mr. Nelson dropping in on a visit with his former associates whenever his duties call him to places where such side-trips are possible.

Custodian Nelson of the Petrified Forest lives in a small cabin on the forest area from where he attends to his daily patrols. The Petrified Forest, being located on a transcontinental trail, sees a great deal of travel, and Nelson's time and patience is fully taken up in preventing vandals from chipping the huge recumbent tree trunks petrified into rainbow colored exhibits. There is not a month passes but what he takes over a ton of petrified wood away from tourists who have endeavored to make away with it.

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Supt. W. W. Crosby of the Grand Canyon returned to his duties after a temporary absence of four months to enable him to attend an important international road congress in Spain. He reached Spain by going westward touching Honolulu, Japan, and India, through the Suez Canal. On his return trip he stopped by the Washington office for several days' conference on field matters. He looked as if he had received a great deal of benefit from his trip. During his absence Assistant Superintendent Bolton most efficiently and successfully handled the administration of the park.

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Frank Pinkley, our Custodian of the Casa Grande and Tumacacori National Monuments, who is kept by the Service in pretty close contact with happenings in all monuments in the Southwest, has his hands full this summer. In addition to handling an increasing flow of visitors which he personally conducts through his Great House, pointing out the meanings of this and that particular detail, he has been made happy by a donation of \$1,000 from the State of Arizona which he can use for essential restoration work on the Tumacacori Mission. This is a compliment not only to Pinkley but to the Service, and we know there isn't anyone in the Service who can get more out of a thousand dollars in service and results than he can. Last year Pinkley was given \$1,200 to build a museum--it's built and is a daisy. Now he is stocking it with material, the most of which is donated, even the showcases. As the southernmost outpost of our Service's activities, it is perhaps a hotter place to work than any other under our jurisdiction. We recently saw a picture of the Pinkley family having a picnic among the cactus and sage brush, which proves that trees and running water aren't indispensable for a good time.

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For quite a long time Mr. J. F. O'Rourke of San Francisco has been giving a great deal of his time with nominal compensation as custodian of the Muir Woods National Monument. Last year Ranger John T. Needham of the Yellowstone was transferred as ranger to the Muir Woods National Monument. The work Needham did, and his interest in the work, was so satisfactory to the Service that recently the nominal position of custodian was abolished and Ranger Needham appointed Custodian of what we consider one of our choicest and most priceless possessions, the only grove of Sequoia Sempervirens under our charge. Custodian Needham makes his residence in a cabin specially built within the forest, and it is doubtful whether a more charming spot for a home can be pointed to in the National Park system.

We have been having occasional "glowing" reports from Superintendent Boles that the lake of fire, which so ignominiously disappeared when he made his appearance in the island, is timidly making its reappearance so that it has practically established its former level. Mr. Boles's monthly reports always indicate from a dozen to several hundred earthquakes on the rim where his home and office are located. It is not necessary for him to worry about any coal shortages, because he plans to drive his heating pipes/~~into~~^{deeply} the hot subsoil and get his heat that way.

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Superintendent Karstens of the Mount McKinley National Park has had his hands full this summer to run his park on a shoe string. He has \$8,000 to pay for all expenses of salaries and maintenance of 2,645 square miles, the second largest park in the system. He has had as many important visitors to attend to this summer -- what with the congressional delegations and the presidential party -- as any superintendent in the system. Mr. Karstens truly has the pioneering job of the Service. It was up to him to establish basic camps and log cabins, besides attending to routine protection and administration work. He has one ranger to assist him. His letters, official and personal, telling about his patrolling and inspection trips undertaken with his dog teams, always bring a refreshing tale of the ic north.

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The Service welcomes the newest arrival in national park ranks in the appointment of Herman A. Hermansen, custodian of the Pinnacles National Monument in southern California. A piece of private land across the main road leading into the monument resulted in the owners insisting on toll from every visitor to the monument, with resultant quite unfavorable publicity to the monument. After studying this perplexing proposition, the Service arranged to have the monument enlarged to provide means of access from another direction, and with the cooperation of the General Land Office is planning eviction of such claimants as have no right and title to their claims. Mr. Hermansen is one of the public-spirited citizens who, because of his love for the Pinnacles and pride in the development of the community is putting in many days of hard work on the monument for the munificent sum of \$1. per annum. We welcome him as one of our associates in our National Park work.

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A source of constant inspiration to us here at Washington is the work done and the results achieved by Superintendent Dorr of the Lafayette National Park in Maine. The entire Service knows that this park has been developed from small donations of land until now the areas encompassed in the park is close to thirty thousand acres, and more being added from year to year. Literally Mr. Dorr is purchasing mountains and valleys to make this large playground of the Atlantic Coast. This year he has received donations which far exceed his annual appropriation, and with which he is building roads and trails. The park can now be reached from Boston by automobile in two easy days' travel.

P A R K S E R V I C E B U L L E T I N

DEPARTMENT OF THE INTERIOR

National Park Service

By direction of the Secretary of the Interior this publication is issued as an administrative report and is required for the proper transaction of public business.

No. 23.

September, 1924.

Last month's good resolution is holding over, and the September Bulletin is coming out on time! Perhaps, now that the precedent is established, it will follow along each month without difficulty.

TRAVEL.

The majority of the parks are still showing a decided increase over last year in the number of people visiting them. Where this has not been the case it is due to exaggerated rumors regarding forest fires and other adverse local conditions. As Superintendent Lewis of the Yosemite said in a recent news bulletin:

"Exaggerated reports of a possible forest fire catastrophe occurring in Yosemite National Park have brought home very forcibly the deleterious effect such wild, unfounded rumors have on travel. After reading the press dispatches concerning a forest fire, which never reached closer than a mile to the borders of Yosemite National Park, a resident of Boston, Mass., wrote to a relative residing in Yosemite Valley urging him to flee from the menacing flames.

"Such an impression is ludicrous to the many thousands that are acquainted with Yosemite Valley, yet perfectly possible to a stranger after reading some unfounded press dispatches. Although an exceptionally dry year in the mountains, Yosemite National Park, thanks to the excellent cooperation from thousands of visitors, has had less fires than any time during the past eight years."

Mount Rainer National Park reports a record-breaking Labor Day attendance, 13,542 people and 3,379 private cars entering the park for the three days August 30 and 31, and September 1. Last year's figures for Labor Day week end were 9,056 people and 2,234 cars. Superintendent Tomlinson reports that on Sunday night, August 31, approximately 1,800 people were in the public camp at Paradise, which can comfortably accommodate about 400 people. At the Longmire public camp, which is planned to comfortably accommodate 500 to 600 campers, 1,700 spent the night.

Crater Lake also has had an unprecedented amount of travel, the latest report received here showing that it is 47 per cent greater than last year.

SEQUOIA'S MUSEUM.

Sequoia National Park has a tent museum. Until recently, just one tent was used, but it has now been expanded to a second tent, and already is threatening to outgrow this. Judge Fry's collection of wild flowers now occupies all sides of two tents, and is not yet complete. A fine collection of Indian relics has just been added to the museum, and \$200 was added to the museum fund from the proceeds of the Annual Giant Forest Play. Myron Hunt, the architect, has studied the location for a museum building and has promised to furnish a sketch design, so that when sufficient funds are available for the erection of a permanent building no time will be lost in getting work started.

RESURVEY OF BOUNDARIES OF ROCKY MOUNTAIN NATIONAL PARK.

Secretary Work has approved the decision of the General Land Office, based on the request of the Service, to resurvey the entire boundary of Rocky Mountain Park. The boundary line conforms to the legal subdivisions of the public land surveys except in four places. Some progress has already been made towards surveying the boundary line in two of these places, but it is anticipated that the survey of the major portion of the boundary line, which conforms to the rectangular system, will require the resurvey of a number of townships in whole or in part before the necessary foundation is created for the proposed work. Because of the magnitude of the undertaking, the Supervisor of Surveys has been requested to confer with the Surveyor General and Superintendent of the park with a view to developing a plan of procedure that will each surveying season give attention to those places that stand in greatest need of relief without too heavily burdening any annual appropriation, and at the same time permit of some systematic development of the problem as a whole until the total boundary of the park is surveyed.

VOLUME OF WATER IN CRATER LAKE ESTIMATED.

Superintendent Thomson recently reported the visit of a mathematician on the faculty of a western college who became interested in estimating the volume of water in Crater Lake. After five hour's work on the problem he announced that the lake--25 miles in circumference and 1,996 feet deep--contains enough water to cover the entire State of Oregon with a pond over 6 inches deep.

SIERRA CLUB FAR AFIELD.

This year the Sierra Club of California held its annual outing in Glacier Park. That the outing was a success is shown by the following account of its trip quoted from the Sierra Club Circular for July-August:

"This year's outing to Glacier National Park which has just been completed, will mark an epoch in the outing history of the Club. The opinion is unanimous that this outing has been one of the most noteworthy and delightful that the Club has ever undertaken. It is the second time that an annual outing has been taken outside the State,

and to transport a party of 210 regular members to the park and to care for them and the 50 additional persons who were engaged in handling the commissary and pack train, was no small achievement. The Southern Pacific and Great Northern Railways and the Pullman Company gave most excellent service in handling the special train both ways.

"The trip through the park can not be described adequately. The National Park Service through its Superintendent, Mr. Kraebel, and Assistant Superintendent Hutchins, and each ranger at the various ranger stations en route, did everything in their power to make the trip a success. The Park Saddle Company rendered as nearly perfect service as can be rendered by a pack train operating in the wild and rough country traversed. The management of the hotels and chalets, and particularly Mr. H. A. Noble, General Manager, left nothing undone which could add to the pleasure of the trip. Even the gods who control the weather favored the party, for while storms of several days duration are not at all uncommon, the party experienced only two brief storms, one at the beginning and the other at the end of the trip. The itinerary outlined in the various preliminary announcements was followed almost to the day. The party was taken through the wildest and least frequented portions of the park and had an opportunity to see the scenically glorious and magnificently wild portion of the park that is reached by but few. It is with profound satisfaction that we contemplate the 1924 outing in retrospect."

NAVY BALL AT MOUNT RAINIER.

On August 26 the officers of the Pacific Fleet, which was then visiting Puget Sound, and their wives were entertained at a dance at Paradise Inn in Mount Rainier National Park. The dance was informal and the public generally was invited to attend. While the only information the Service has had of this dance was an announcement that it would take place, we feel entirely justified in making the assertion that it was a huge success--a Navy ball in one of our national parks couldn't be anything else.

NEW LAKE DISCOVERED IN SEQUOIA PARK.

Judge Fry and his son, Park Ranger Clarence Fry, while on a pack trip into the Mount Silliman region in Sequoia Park last month, discovered a heretofore unknown lake which they state is larger than any known in the park up to this time. It is very deep and crater-like in appearance.

BOY SCOUT AID IN PARK DEVELOPMENT.

The new Eagle Scout Trail in Yellowstone National Park, which was constructed by 32 Eagle Scouts from Montana, Idaho, Washington, and Oregon was dedicated August 21. The object of holding the dedicatory services was to recognize the application of Scout craft to a great national project, the development of national parks. It is expected that the Scouts will build

more trails in the Yellowstone, and that trail-building by Boy Scouts in other national parks will follow. E. G. Maclay, president of the Scout Council of Great Falls and originator of the trail-construction idea, secured authority from Director Mather to carry out the project.

RENT CAR OPERATOR FINED AND DEPRIVED OF PERMIT TO ENTER PARK.

Mount Rainier Park has just satisfactorily handled another rent-car case. F. C. Jackson, of Seattle, Washington, inserted advertisements in the Seattle papers offering to carry passengers to Mount Rainier. The matter was investigated by park officials, and when Mr. Jackson arrived in the park he was identified, fined \$50, and deprived of his permit to enter the park. Making an example of a rent-car operator in this way should have a salutary effect in curbing the rent-car evil.

VOLCANIC ACTIVITY IN HAWAII NATIONAL PARK.

During the latter part of July lava fires again began playing in the fire pit of Kilauea. The display is very spectacular, with three large fountains playing steadily and throwing the molten lava over a hundred feet into the air, while streams of fire surge from the outlet into the lower part of the pit. No wonder Superintendent Boles is so proud of his park. He says he won't let his volcano get away again if he can help it.

COMPARISON OF GRAZED AND UNGRAZED LANDS.

In view of the fact that persistent efforts were made early in the summer by cattle and sheepmen to obtain grazing privileges in the national parks, the following comparison of grazed and ungrazed lands made in the July report of Superintendent White of Sequoia is especially pertinent and interesting:

"On the horseback journey from General Grant Park, across the Sequoia National Forest, to the Sequoia National Park, the marked difference of vegetation in forest and park areas was noted. From the Grant Park boundary the inter-park trail leads for some 10 or 12 miles through the Sequoia National Forest where the meadows were dusty, dry, and trampled by the hoofs of cattle; even the skunk cabbage had been cropped low by hungry stock. The ceanothus and other edible brush had been so closely fed that little opportunity was left for seeding. The whole area was over-grazed and dried out. Camp sites were a filthy mess of cans and debris.

"On the park boundary near the Cabin Meadow Ranger Station is a drift fence beyond which, in the Sequoia National Park, may be seen lush meadows, many flowers and abundant growth of brush, evidencing good water storage. It was like passing from a semi-desert to an oasis, and one could not prevent a thrill of pride at the condition of the park as compared with the adjacent forest.

"The chief damage done by over-grazing is when the cattle get into the mountain meadows in early summer, while the soil is still wet and the grass has not grown. The sharp hoofs of the cattle penetrate to the grass roots; air and sun are admitted and rapidly dry out the moisture, so that the grass has no chance to grow and the meadow which might be a pleasant green spot all summer to delight the eyes becomes but a plowed field. Furthermore, feed for stock which might be conserved until later in the summer is destroyed, while the loss of water to stream flow can scarcely be estimated."

IMPOSTOR ARRESTED.

Last month a man representing himself to the California Highway Engineering Department, to the Bureau of Public Roads representatives in California, and to Park Service officials as an inspector of the Bureau of Public Roads from Washington, D. C., arrived in the Yosemite and stated he was making an inspection of the State highways receiving Federal aid. Superintendent Lewis telegraphed to the Service about this matter, and it was discovered that the man was an impostor. He became suspicious and started to leave the park, but was arrested, and upon investigation it was found that he had cashed a number of worthless checks. He was charged with defrauding the Curry Camping Company of a bill for hotel services amounting to \$36 and sentenced to 60 days in the county jail at San Francisco. Meanwhile Department of Justice officials have investigated the matter of his impersonating a Federal officer, and this will be brought up when his present sentence of 60 days expires.

COMMUNITY DEVELOPMENT FOR GRAND CANYON APPROVED BY DIRECTOR MATHER.

One of the most forward-looking steps taken in any national park is the approval by Director Mather while at Grand Canyon National Park August 30, 1924, of a general community development plan covering all future development of the National Park Service, the Fred Harvey Company, and the Atchison, Topeka and Santa Fe Railroad in so far as these may be foreseen. This plan was concurred in by the Fred Harvey Company and the railroad, the latter through the signature of the President, Mr. W. B. Storey. Recognition by all parties concerned was made with respect to two facts. First, that the plan is based upon only partially completed surveyors' data as to the exact location and size of physical elements, and second that new developments indicated are shown with the intention of setting location and not exact form or size. The railroad and public utility are planning improvements for the better care and accommodation of visitors that will represent an investment of nearly one million dollars. Before the beginning of any new work, however, it will be necessary for the National Park Service to replace with a modern sewage disposal plant the present inadequate 19-year-old plant that has now become a menace to the health of the community.

REDUCTION OF ESTIMATES IN ACCORDANCE WITH INSTRUCTIONS FROM BUREAU OF THE BUDGET.

In order to comply with orders of the Director of the Budget and the Department for reduction in the preliminary estimates for the 1926 fiscal year the entire estimate of \$2,500,000 for road improvement as authorized in section 2 of the national park road act of April 24 had to be eliminated. The limitation fixed for the 1926 estimates with the road funds eliminated was \$9,755 less than the 1925 appropriation. There still remains hope that the entire amount of \$2,500,000 for road improvement or a considerable part of it will be passed by the Budget Bureau as the instructions of that Bureau in fixing the limitation of estimates was if there were other items of a serious emergency nature to meet absolutely necessary requirements these were to be submitted in a supplemental statement which was to set forth the consequences which would result from failure to secure the additional amount. At this writing the full \$2,500,000 has been submitted to the Department in a supplemental statement.

AN INFREQUENT GEYSER.

The question "what makes a geyser geys?" was brought to mind recently when Yellowstone reported the eruption of its Once-a-year Geyser. The water was first tossed 50 feet into the air, and this was followed by puffings about 20 feet high for fifteen or twenty minutes. With its Minute Man, and Old Faithful performing approximately once an hour, and the Once-a-year Geyser, Yellowstone has a unique system of time-pieces and calendars.

FOR THE FLOWER LOVER.

Word comes from Mount Rainier that this has been Indian Paintbrush year. Never have the fields been so covered by these deep scarlet flowers, and never has the coloring of the individual flowers been so rich. The color ranges from a deep crimson of the American Beauty rose to pale reds and pinks, and even pure white. There are acres upon acres of these flowers, growing so close together that it is impossible to walk without trampling down hundreds of them.

SERVICE NOTES.

Director Mather was in the field all during August, his inspections taking him to Glacier Park, then on up into the Canadian Rockies where he visited Waterton Lakes, Banff, Jasper, and Yoho National Parks of the Canadian System. Mount Rainier National Park was next on his itinerary, followed by Zion. From Zion he went to the North Rim to meet the Kaibab Deer Committee, later crossing over to the South Rim. His inspection by no means ended there--but the rest must be kept for the next news-letter. Up to September first he had inspected 13 national parks, including those in Canada.

While journeying from Great Falls, Montana, to Yellowstone Park last July Director Mather and Superintendent Albright had an interesting experience when they stopped at White Sulphur Springs to see Charles W. Cook, the only man now living who shared in the discovery and exploration of the Yellowstone. In 1869 Mr. Cook, with two other men, inspired by the tales of Jim Bridger, decided to go and see for themselves how much truth there was in the almost unbelievable stories they had been hearing. In spite of grave danger of

encountering hostile Indians they worked their way up the Yellowstone River from near Bozeman, Montana, until after many days they came to a place where the timber began to be less heavy. Cook, why he couldn't tell, hurried ahead of his companions, and suddenly stopped, for before him lay the wondrously beautiful Yellowstone Canyon! And he was the first white man to gaze upon it. This little exploring party and the information they brought back with them led directly to the Washburn-Langford expedition of 1870, which really made Yellowstone known to the world. Undoubtedly Mr. Cook enjoyed this little visit--which after all was planned to honor a heroic pioneer--but it is equally certain that Director Mather and Superintendent Albright had an interesting experience.

Word comes from Casa Grande that William John Boundey has arrived to join the Park Service family. The Service's heartiest congratulations to Mr. and Mrs. Boundey.

Gunnar Widforss, the Swedish artist who painted such interesting pictures of Zion and Yosemite National Parks is now in the Yellowstone painting the Grand Canyon. He plans to look over the terraces at Mammoth, with the idea of determining whether they are suitable for reproduction in large paintings.

Mrs. Frank Pinkley has been accompanying the Superintendent of Southwestern Monuments on his inspection trip this summer, and has written some exceedingly interesting news-letters. For the benefit of those not fortunate enough to be on her mailing list a few extracts from her August letters are quoted below:

"My last letter left us approaching the Mesa Verde Park, if I am correct. The 30 mile road from Mancos to Spruce Tree Camp is a mountain road with many heavy grades, winding thru cedars, pines, and spruce with wonderful vistas of the valley of four States. We had met the Nusbaums before, and they welcomed us most cordially. We made a camp in a grove of pines and cedars and just had time to eat our supper before time for the Camp Fire. This Camp Fire is a feature of the park where everyone gathers around a large fire and listens to notable visitors, or if none are in camp to the park men who give timely talks. Frank was the notable visitor in this case, and each night that we were in camp he spoke on our National Monuments. Apropos of National Monuments, which of course we eat, sleep and live, I heard a newly arrived visitor speak to one who had heard the talk. 'National Monuments?' he said, 'I did not know that there were any so far west. I knew that the D. A. R. had put up some Monuments in the east to mark historic spots, but I did not think there were any in the west'! * * *

"We were guests for dinner at the Nusbaums' home. This home deserves a chapter all its own. It is built in conformity with the prehistoric architecture, and Mr. and Mrs. Nusbaum have designed, built, carved, and painted their own furniture with a color scheme of soft, old grey and turquoise blue. * * *

"One could spend years studying in the Mesa Verde, and it was maddening to know so little."

From another letter--

"Leaving Crown Point we had 35 miles of rolling desert before finally coming into Chaco Canyon. We were able to see from the road five ruins blended into the background of the cliff and were immensely interested in the stairways, prehistoric of course, worked into the clefts in the rock. There are many ruins on top of the cliff as well as those in the valley. The ruins themselves beggar description. In Pueblo Bonito alone there are 700 rooms. This ruin is four stories high with kivas innumerable. Dr. Judd, who is excavating here, has done a wonderful work and is making some very interesting discoveries. The masonry is beautiful with small rocks laid in beautiful order, and several of the roofs are intact. Metates here are worn to paper thinness. He has found much beautiful pottery and other artifacts and ornaments including some beautiful turquoise and jet. We stayed here till Monday morning, visiting the different ruins. Mr. W. E. Rollins, an artist of note, has a studio here and has some wonderful pictures on display. Sunday evening the Zuni boys who were working for Mr. Judd gave a dance for us. They must have danced a dozen different dances, some of them the most beautiful and intricate I have ever seen, and they took so much pleasure in it themselves that it added much to our pleasure in watching them."

The supply of news seems to be about exhausted for this time. It would add a great deal to the interest in the news-letter if the field personnel would send in to the office items of local interest, which, while not important enough to come to our attention in the course of the regular official routine, are of human interest.

PARK SERVICE BULLETIN.

UNITED STATES

DEPARTMENT OF THE INTERIOR

National Park Service

By direction of the Secretary of the Interior this publication is issued as an administrative report and is required for the proper transaction of public business.

No. 24.

October, 1924.

This is a busy time for the Service, both in the field and in Washington where the preparation of the annual report and other important matters are added to the pressure of business; but still time must be found for a friendly greeting and the passing on of a little news.

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A MESSAGE TO THE MEMBERS OF THE NATIONAL PARK FORCES
FROM THE DIRECTOR.

To the Members of the National Park Forces:

While this is primarily a message to the Park Superintendents, I am making it an open letter so that you can all know something of the interesting trip I had to the parks during the past summer. I found so much to do during the coming winter, both here at Washington and in the field, that I had to abandon my trip to South America with all its interesting wonders. I particularly want to get this word to the Superintendents as I will not have the opportunity to meet them in conference this year and go into the problems that seem to me especially pressing.

As you know, I visited four of the Canadian National Parks this year, and the experience was a very edifying one. I made an extensive horseback trip with Superintendent Kraebel and Congressman Scott Leavitt of Montana over some of the most scenic sections of the northern part of Glacier Park, coming out at Waterton Lake. We visited Waterton Lakes Park, which is located just over the International Boundary Line, and met Acting Superintendent Herbert Knight. We were able to work out a number of plans for cooperation between the two parks as to road building and game protection which will be very helpful in the future. Later I was in Banff and Kootenai National Parks where the Chief Engineer of their park system, Mr. J. M. Wardle, took me over every foot of the Banff-Windermere Highway. The throngs of tourists at the great hotels at Banff and Lake Louise were very impressive, but I think best of all were the little bungalow camps maintained along the road, at one of which we arrived at 11 o'clock at night and were welcomed with a cup of tea and sandwiches before turning. I learned from Mr. Wardle much of interest in connection with the handling of the great buffalo herds and the sale of meat, and the manufacture of pemmican in their own little factory at Edmonton.

It was, however, at Jasper National Park, another hundred miles farther north, which I reached by the Canadian National Railway, that I really found the most valuable information for us. This was in the remarkable fire-fighting apparatus which Colonel Rogers, the Superintendent, has installed. I was so interested that I had Superintendent Kraebel visit the park to study the apparatus, as you know, and information in regard to it has already been forwarded to all the Superintendents by Mr. Kraebel. I want the Superintendents particularly to study Mr. Kraebel's report, as it is a fine piece of work and exemplifies what we ought to be doing in all national parks where we have many streams and other bodies of water. I am hoping that it will be possible to include in the appropriations sufficient funds for the purchase of this fire apparatus, which can be handled by muleback if necessary. We should know here in Washington just what the possibilities are of applying this to each of our larger parks where ample water is available. We are fortunate in having a man like Mr. Kraebel with us, who has had a splendid experience in forest work and whose knowledge of fire-fighting apparatus is extremely valuable to all of us. The Superintendents should not hesitate to write direct to Mr. Kraebel during the winter months, when there is plenty of time for correspondence, and get his ideas on various forms of forest protection.

You will all be interested in knowing, as a bit of history, that Mr. Cammerer, in speaking before the Appropriations Committee over four years ago, urged to no avail the use of fire apparatus very similar to what Canada is now using, and I realize that if his suggestions could have been followed up at that time we might have been as far along as Canada now is in fire-fighting apparatus.

I feel strongly that at our next conference we must arrange to have some of these splendid men who are Superintendents of the Canadian parks present with us, for the exchange of ideas would be very valuable. Colonel Rogers, a veteran of the Boer War, is one of the most interesting men in public service that I have met, and I know you will all be glad of the opportunity of meeting him and exchanging ideas.

It was surprising to see how many Americans are touring the Canadian parks, particularly Banff, and now that the highways have been so much improved we can expect ourselves to have many Canadian visitors next year, particularly if the new highway through the Blackfoot Indian Reservation to the International Boundary Line between Montana and Alberta is completed.

I saw much to interest me in the nine of our own parks that I was able to visit. I was particularly impressed with the keen interest that is being taken in the museum idea. On the 16th of next month we will lay the corner stone of the new museum in the Yosemite. This is going to be quite a gala event, and will mean not only the laying of the corner stone of the museum but of the post office as well, and the dedication of the new administration building where Superintendent Lewis at last will have quarters commensurate with the work that he is carrying on there.

The museum and nature study work has taken on a great impetus in all the parks. Even little General Grant Park has its collection of insects and butterflies as a start, while in Mount Rainier Park Naturalist Schmoie is getting together an interesting collection typifying the flora and fauna of that park.

Jesse Nusbaum at Mesa Verde has received in gifts from friends of the park over \$8,000 to be used in building his museum, which he is now engaged in constructing and which will in large measure tell the story of the "Little People" who occupied the cliff dwellings. While I did not visit Mesa Verde this year I had the privilege of meeting Jesse and his good wife at the great inter-tribal ceremonial Indian dances at Gallup. It seemed as if he knew all the Indian chiefs for miles around.

Speaking of Indians, I think the work that Superintendent Lewis and Chief Ranger Townsley are doing at Yosemite in the Indian Field Day is producing great results. Representatives of the Indian Office who were in the Yosemite this year immediately after the Field Day were much impressed with what we are doing, particularly in stimulating the Indian women to carry out their basket weaving by the liberal prizes that were offered. In the Mesa Verde Mrs. Nusbaum, by carrying out the splendid pageant entitled "The Eagle Woman," did some very effective work. The Navajo Indians that took part in the dance seemed to enjoy it just as much as did the spectators. The impression made upon the Brooklyn Eagle Party, for whom the pageant was first produced, was very great. I am in hopes that we can hold our next conference at Mesa Verde at the time the new museum is dedicated, and persuade Mrs. Nusbaum to produce the pageant again for us.

On my trip this year I was especially impressed with the help that I received at the different headquarters. In Glacier Park, for instance, one of Mr. Kraebel's staff joined us on the train while en route to Kalispell and then returned to Glacier Park with us, taking an accumulation of dictation which cleared up a mass of correspondence of several days. Then again while I was at Mount Rainier Park I was so busy visiting the new Carbon River Road and Paradise Valley that I did not have time to do any work at the office, but one of the young men came down to Tacoma and after the inspiring dinner at which Superintendent Tomlinson and I were guests I had a couple of hours before midnight to dictate my letters, which went out the next day without my signature. However, the copies, which reached me a little later at the Grand Canyon, showed that all had been accurately done, and I felt almost as though I had been back home working in the Washington office. I got the same assistance from Superintendent Lewis' force in Yosemite, and then again at the Grand Canyon, where a lot of letter writing was required, Mr. Harrison, who was busy at Superintendent Eakin's office in the daytime, and hard at lecturing in the evening, had a big grist of letters turned out for me in record time. It was a great pleasure to have the opportunity of talking to the staffs of the different offices and telling them something of the organization of which they are all an integral part.

I spent a day in Portland, and probably as fine a tribute as has been given the Park Service was the dinner tendered by the Chamber of Commerce. I felt this dinner was really a tribute to the National Park Service, for I was simply the medium through which appreciation was shown to all members of the National Park Service for what they have accomplished. It is the work by everyone, from superintendents right straight through to the temporary rangers, that has brought realization of what the national parks mean to the people of the West. At this dinner the leading citizens of Portland were present, and Senator McNary had come to Portland for the occasion. Four Congressmen were present--N. J. Sinnott, Chairman of the Public Lands Committee of the House; Elton Watkins of Portland, Albert Johnson of Washington, and Walter F. Lineberger of California. It made

me realize that the work we have all been doing for the last few years is coming home not only to the hundreds of thousands who visit the parks, but to our western friends who are realizing more than ever the economic value of the parks to their States.

There is one matter to which I want the Superintendents to give particular thought during the coming winter, and that is to work out plans for larger sales of Government publications than they have been having in the past. Superintendent Albright in Yellowstone Park has been following this up in greater detail than any other Superintendent, with very effective results. During the year he sold 5,778 sales publications of various kinds, including maps, the total sales price of these publications being \$2,150.45. In this lot were 874 copies of the Portfolio, 330 copies of Glimpses, and 57 copies of a pamphlet on American antelope. The other parks can make correspondingly good sales if everyone will put their shoulders to the wheel. Remember that the work Mr. Albright is doing benefits your park too, for many of the publications that he sells have to do with all the parks. I feel sure we are missing an opportunity in not getting this interesting park literature out. Remember that anything that is bought and paid for is valued a great deal more highly than anything that is given away, and the people who take this literature away by the thousands are spreading the park gospel in their own homes.

I must not forget the fearless work which Superintendent Eakin has been doing in Grand Canyon Park since he has been in charge there. We have to thank him very largely for the work of getting the evidence that made it possible at last to secure possession of the Indian Gardens and to enforce the Supreme Court decision which gave the Federal Government control of this important property. I made my fourth trip through the wonderful Kaibab Forest to the North Rim of the Grand Canyon and for the first time crossed the canyon by horseback. I was more deeply impressed than ever with the greatness of this park, and with the plans that are now under way we should be able to make it more accessible to the people of Arizona and of the country at large.

I had a wonderful experience in Zion Park climbing the new West Rim Trail to the top of the canyon by way of Walter's Wiggle, for someone had given to the interesting switchbacks on this trail the name of our indefatigable Superintendent, Walter Ruesch. We were off at 5 o'clock in the morning to make the trip, and to view the canyon from the top of the wall is one of the most remarkable scenes in any of our parks.

I was able to make only a short stay in Yosemite, Sequoia, and General Grant Parks, but I will never forget the interesting trip in Sequoia Park, starting out at six in the morning to walk down the trail from the Giant Forest to connect with the new road which Foreman Small is building up past Moro Rock. The work on this trail still stands out in my mind as the most interesting bit of road work that we are doing anywhere, particularly from the standpoint of preserving the beauty of the landscape. The situation is a very difficult one to handle as the road comes up on practically a 6 per cent grade over a steep, narrow slope. Practically all the trees off the right of way have been preserved and the road stands out as one of the finest examples of painstaking work in protecting the scenery, which after all is the feature that means most in our parks.

While we are still waiting for Congress to actually give us the funds under which we can go ahead with our road projects for which \$7,500,000 has already been authorized, we have not been idle, and Chief Engineer Goodwin is ready to go ahead with several large projects as soon as the funds are forthcoming. My visit to Glacier Park enabled me to work out with Mr. Goodwin and Superintendent Kraebel a revision of the location on the great Logan Pass Road, which will make this road probably the most striking crossing of the Continental Divide, or at least a worthy competitor of the Fall River Road in Rocky Mountain National Park. Certainly it means even more to the Northwest, as it will probably be the first crossing over this wonderfully scenic section of the Rockies. We have to thank the Bureau of Public Roads for excellent cooperation with us in furnishing Engineer Kittredge, one of their best locators, for the task of locating the road, which has been carried on during the last month or so under stormy conditions. Chief MacDonald of the Bureau of Public Roads has promised us active cooperation in other problems that may arise, thus giving us the benefit of his organization which has advanced the science of road making so greatly in the last few years. This will be a great help to Engineer Goodwin and our Superintendents, and with the cooperation of our Landscape Division, should make our road building something to be really proud of.

I was much impressed with the interest which the universities are now taking in the proposed summer school work in the parks, and I have no doubt that before another year rolls around the establishment of the summer schools under the auspices of leading American universities will be an accomplished fact.

We have been especially fortunate this year in having much individual interest taken by public-spirited citizens in certain individual parks and monuments. Custodian Nelson, of the Petrified Forest, who has been working hard with very small funds, was visited by a citizen of New York who became so interested in the work at the monument that he spent several hours with me in Washington one evening last week and has arranged to finance the cost of publication of a pamphlet on the Petrified Forest. The same keen interest has been taken by a friend of the park in clearing up the debris along the roads in Yellowstone Park. Already Superintendent Albright reports that his experimental work has been very successful, and that he has been authorized to carry on this work this fall, as long as the weather conditions will allow.

In other parks we are finding more and more people who are anxious to help out in a substantial way. One of the most interesting events that happened this month was the gift of a Dodge touring car to Superintendent Frank Pinkley of the Southwestern Monuments, on Friday, October 16. The story of the presentation will be told in the next bulletin. Any day now he will be called up to Phoenix to receive the car, which is to take the place of the old Ford truck known as the "Baby," which he has used over thousands of miles of highways in Arizona and New Mexico, in connection with his visits to the many monuments for which he is responsible. Funds for the purchase of the automobile have come from Boston, Chicago, and his own State of Arizona, and the gift certainly is a deserved tribute to one who wears more stars on his sleeve than any other of our Superintendents.

Last of all, I must tell you of what was probably my most interesting experience during my trip this year. It happened while I was crossing the Arizona-Utah line between Fredonia and Kanab about a month and a half ago.

Mr. Myron Hunt, the architect of Los Angeles, who has helped me very much in working out problems in Yosemite, Zion, and Grand Canyon, had driven with me across the desert from Zion Park. We had been much delayed by poor road conditions and found we could not make Kanab before ten in the evening. It was probably close to this hour when, still some little distance from the town, we were held up in the middle of the road, and the next moment some twenty-two young Mormon girls of Kanab, Glendale, Carmel, and other small communities began to sing some of the rousing Yellowstone songs. They were the girls that some time last winter I had arranged to send up to Yellowstone Park. The trip had evidently made a deep impression on them. Nearly half the girls had never seen a railroad before, nor had many of them been more than 150 miles away from their home towns. They traveled in two trucks some 680 miles to the park entrance, where through the kindness of Mr. Nichols of the Transportation Company and Mr. Vernon Goodwin of the Camps Company they had a wonderful four-day trip. They learned all the songs of the camps and had become real Yellowstone boosters. I was told that when they returned to Kanab the next Sunday evening services at the church consisted of the girls telling of their wonderful experiences in the park. Bishop McAllister accompanied them to the park, with his wife, and he was the biggest booster of them all. They tell me that next year the entire population of Kanab is going up to the Yellowstone. Later on the Bishop took occasion to write Secretary Work in regard to the trip, and he stated that the park seemed to him a regular "Garden of Eden," where human beings and wild animals could live together in happiness. I was especially impressed with his remarks to me that he felt the girls were just as safe in the Yellowstone as they were in their own homes—a real tribute to the service our force is rendering there, and which I feel is true in all of our parks.

Sincerely yours,

STEPHEN T. MATHER,
Director.

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TRAVEL.

This year our travel figures swelled to 1,655,891, an increase of 162,179 over last year. Hot Springs had an increase of 46%, Mount Rainier 30%, Crater Lake nearly 24%, Mesa Verde 36%, Wind Cave 25%, Hawaii 26%, and Zion and Lassen each 31%.

When one considers the drought conditons in the West, the hoof and mouth disease in California, and unfavorable economic conditions in many States, our travel record this year is an excellent one.

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CRATER LAKE A MONEY-MAKING CONCERN.

The revenues of Crater Lake National Park for the fiscal year that ended June 30, 1924, amounted to \$35,708.18, or \$5,008.18 more than Congress appropriated for park expenses for the current year. When once an adequate road system is provided in each park, and the necessary administrative buildings constructed, it is hoped that all the parks will gradually reach a self-supporting basis.

NEWS FROM HAWAII.

Superintendent Boles reports that early in July about 60 native Hawaiians from the various islands assembled at the rim of the volcano, and their astonishment at the size of the pit was so great that they spent nearly an hour in prayers, chants, and lamentations, all absolutely serious. Then, just as they started away from the rim, an avalanche roared down from the opposite wall, sending up a swirling cloud of red dust. This brought them all back to the rim and their previous performance was repeated. All these folks were delegates to a convention commemorating the Hundredth Anniversary of the establishment of a Christian Church in the Islands, but it was quite apparent that all of them have great respect for Pele, the Hawaiian Goddess of Volcanoes!

Admiral Coontz of the Pacific Fleet was so impressed with Hawaii National Park on his recent visit there that he has promised that the entire personnel of the Fleet will be given opportunity to visit the park next spring, when maneuvers are planned for Hawaiian waters. The Admiral after his visit to Hawaii wrote a very appreciative letter to Secretary Work.

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ACHIEVING THE "IMPOSSIBLE."

Angel's Landing, in Zion National Park, a peak that until September 11, was deemed inaccessible to anyone of lower status than the angels, was climbed on that day by Park Ranger Harold Russell and Guide Dave Dennett of the U. P. Camp. This initial trip was a very hazardous one. The next day, however, with the use of ropes, these men guided a party of visitors to the summit. The ropes were left in place for the benefit of others who might want to make the perilous climb and see the magnificent view to be obtained from the top of Angel's Landing.

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ENLISTING THE COOPERATION OF HUNTERS.

Superintendent White of Sequoia National Park reports that the practice of hunting deer near the park boundary is gradually diminishing as sportsmen are coming to realize the value of the park as a breeding ground for deer, as well as the lack of sportsmanship in killing animals which have become tame through constant association with man. At the opening of the season a number of hunters went several miles from the park boundary near Alta Meadow before loosing their rifles, and to them Mr. White sent the following letter:

"Park Ranger Dorr reports that you camped just outside the park line near Alta Meadow during the opening days of the hunting season, but that you scrupulously avoided hunting near the park line and in fact you hunted some 3 miles from the line.

"Permit me to thank you for this attitude towards our tame park deer and the evidence that you have given that you are a real sportsman, above the somewhat questionable method of lying near the park boundary and picking off tame deer as they stray over the line."

AN EXCITING CAPTURE OF BOOTLEGGERS.

Superintendent Thomson of Crater Lake National Park reports that not long ago a Federal prohibition agent, following a Hudson car containing four Indians alleged to be bootleggers, entered the park and pressed into service a tourist automobile in which he followed and overtook the Indians. A search of the car revealed a gallon of moonshine. The car which was pressed into service by the prohibition officer contained Mr. John Scott and Mr. Rosenbaum, officials of the Southern Pacific Lines, who are said to have thoroughly enjoyed the experience. Nevertheless it was impressed upon the Federal prohibition officers that such methods must not be employed in the park again, as park visitors seeking rest and quiet should not have their cars commandeered in this manner. Mr. Thomson assured the prohibition officers that the same results would be accomplished by the park authorities in a quieter and less disturbing way.

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RESTOCKING THE RANGE.

The Tonto Plateau, 3,000 feet below the rim of the Grand Canyon, is the natural habitat of antelope, but of recent years these have almost disappeared. With the cooperation of the Bureau of Biological Survey it was decided to restock this plateau with antelope, and the Survey recently shipped to the Canyon twelve of these young animals, which had been taken from their mothers at birth and carefully raised on the bottle on a ranch in Nevada. Naturally under these conditions they are very tame and will prove quite an attraction to visitors. They were shipped in crates to Grand Canyon, and when they arrived there were slung on pack mules, two to a mule, one on each side, and carried down the trail to the Tonto Plateau, a distance of 8 miles. All of the antelope stood the trip splendidly. They were kept in a small inclosure for a few days, until they became accustomed to their new surroundings and the strange people around them, and then turned out into a large fenced-in area that is to be their range. Later on mule deer from the North Rim may also be placed in the inclosure.

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YOUNG SEQUOIAS AFFECTED BY DROUGHT.

It is reported that at Redwood Meadows in Sequoia National Park many of the young sequoia trees are turning yellow and dying from the effects of the drought.

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MERITED PRAISE FOR SERVICE AND OPERATORS' EMPLOYEES.

Again the Service has occasion to be proud of its own and the operators' employees. The following two letters from Mrs. Lulu D. Root of Salt Lake City, whose sedan car ran into Yellowstone Lake and turned completely upside down in about 3 feet of water when the steering rod broke, tell the story:

To the Manager of the Yellowstone Park Camps--

"During a recent trip to Yellowstone my husband, a girl friend, and myself met with a very serious accident. By knowing what to do, and quickly doing it, Mr. Newton Morris, driver of Bus No. 35, literally saved our lives. By doing so he won the admiration and esteem of dozens of tourists and of course, our undying gratitude. It has occurred to me that it might help him for you to know this. I also want to mention the kindness of Miss Varney and her associates at Lake Camp, and Mr. Billings, as well as Mr. Bruce of the garage, all of whom gave us splendid help and service. We felt that we were in an atmosphere of 'brotherly love' from the time we were rescued from the bottom of Yellowstone Lake till we were able to leave for home several days later."

To Superintendent Albright--

"While on a trip through Yellowstone recently my husband, a young lady friend, and myself met with a serious accident near West Thumb. Our car was overturned in the lake. We and our belongings were rescued by a kind and unusually alert bus driver, Mr. Morris, and by him we were taken to the ranger station at West Thumb. It will interest you to know that we received 'first aid' together with the most kind and generous consideration from Ranger Randall Keate and his associate. Our experience nearly cost us our lives, but we feel it not all a loss as it was a wonderfully happy reaction to meet up with such brotherly love in the midst of total strangers. Our appreciation and gratitude is very sincere, I assure you."

It happened that car No. 35 was about 100 yards behind the sedan when the accident occurred, and Mr. Morris, its driver, and the passengers went to the rescue, turning the car over on its side so that the passengers could crawl out. Had it not been for this timely rescue they would have all drowned.

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TOTAL AREA OF PARK AND MONUMENT LANDS.

During the year the following changes have been made in national park and monument lands:

National parks, total acreage reduced by 56 acres. Now 7,277,709 acres.
(Rocky Mountain decreased by 345 acres;
Lafayette increased by 289 acres.)

National monuments, total acreage increased by 25,836.02 acres. Now 1,189,010 acres.
(Carlsbad, new, 719,22 acres;
Craters of the Moon, new, 24,960 acres.)

Inside the exterior boundaries of the national parks there are now 99,827 acres of private holdings (a decrease of 1,164.86 acres).

This makes the total acreage of unalienated park and monument lands 8,366,892.

INTERESTING COMMENTS ON THE HANDLING OF GENERAL CORRESPONDENCE.

The September Bulletin of the General Land Office contained such interesting comments on the handling of general correspondence that permission was obtained to reprint it in this Service news letter, as follows:

One of the most important duties incident to the administration of public land affairs is found in the field of general correspondence, and this is equally true in all branches of the service. Answering questions is as much a part of our regular business as the action upon applications or the decision of litigated cases. No part of our work calls for greater care and attention. To ascertain the true nature and scope of an inquiry, and thereafter give an answer thoroughly responsive is often no slight task. Nothing, however, can be more disheartening to the honest seeker for information than to find, when he gets a response, that his letter was carelessly read, and that consequently the answer is of no practical value. It is true that many of the inquiries received are most unskillfully prepared, with but little knowledge of the language and less of the land laws; but it is these letters that should be given the most careful attention, for a correct answer may be of the utmost importance to the recipient. It may easily mean the consummation or loss of his claim.

The perfunctory reply is not much better than the irresponsive answer; it may contain the information wanted, but put in such a mechanical form as to be actually offensive; whereas the same facts stated with some show of personal interest would be gratefully received. Of course it is a somewhat difficult thing to answer substantially the same question, day after day, and year after year, without falling into mechanical forms of expression, but it requires only a slight turn in a word or phrase to give evidence of an individual interest that will make friends wherever it is apparent.

The way we handle our correspondence goes far in fixing our relations with persons interested in public land questions, either as claimants or otherwise. Prompt and concise information in evident recognition that such an answer is due the writer, can not fail to produce a good impression, whereas a response that shows either indifference or curtness will produce the opposite result. The good will of our correspondents is a very desirable thing; its acquisition, or its loss, may depend upon the use of a considerate or inconsiderate phrase.

"A word fitly spoken is like apples of gold."

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CHANGE IN CUSTODIANS.

Dr. W. T. Lee of the Geological Survey, who during the summer, in connection with his explorations for the National Geographic Society, acted as temporary custodian of the Carlsbad Cave National Monument, resigned last month, and Mr. W. F. McIlvain of Carlsbad, New Mexico, was appointed custodian.

P A R K S E R V I C E B U L L E T I N

UNITED STATES

DEPARTMENT OF THE INTERIOR

National Park Service.

By direction of the Secretary of the Interior this publication is issued as an administrative report and is required for the proper transaction of public business.

No. 26.

December, 1924.

PASSAGE OF GENERAL DEFICIENCY BILL.

The convening of Congress was followed shortly by the passage of the Second General Deficiency Bill, which was signed by the President on December 5, thus making the first \$1,000,000 under the road budget available for actual construction. The funds to cover repair of damage caused by floods in several of the parks were for the fiscal year 1924 and therefore are not available under the act. Wording of legislation reappropriating the funds for Rocky Mountain and Mount Rainier National Parks will be submitted for inclusion in the next deficiency bill. As the repair work in the Mesa Verde was accomplished by transfer of funds and without creating a deficiency the item for Mesa Verde will not be reappropriated.

INTERIOR DEPARTMENT APPROPRIATION BILL.

The Interior Department Appropriation Bill carrying funds for the fiscal year 1925 has already passed the House of Representatives carrying the following amounts for the national parks:

Washington Office-----	\$51,000	Rocky Mountain -----	\$84,660
Field accounting -----	6,000	Sequoia -----	71,710
Crater Lake -----	35,980	Wind Cave -----	10,960
General Grant -----	12,180	Yellowstone -----	396,000
Glacier -----	184,960	Yosemite -----	252,714
Grand Canyon -----	192,360	Zion -----	20,000
Hawaii -----	15,560	National Monuments -----	21,980
Hot Springs -----	72,100	Repair of damage caused	
Lafayette -----	34,190	by flood, fire, or	
Lassen -----	10,000	storm, and fighting	
Mesa Verde -----	42,835	forest fires -----	40,000
Mount McKinley -----	13,800	Construction of roads	
Mount Rainier -----	106,500	and trails -----	1,500,000
Platt -----	17,920		
		Total -----	3,193,409

NEW NATIONAL MONUMENT.

Another monument was added to those under the supervision of Custodian Pinkley of Southwestern Monuments when the President, on December 9, signed the proclamation creating the Wupatki National Monument. The new reservation contains two groups of prehistoric ruins built by the ancestors of the Hopi Indians, or People of Peace, in the course of their migration south from the Grand Canyon. Wupatki is a Hopi word meaning "Great Rain Cloud House." The monument contains 2,234.10 acres.

A ROAD-CLEARING EXPERIMENT.

Preparations have been made in Rocky Mountain National Park for an interesting experiment in snow removal. On the recommendation of the Du Pont Company thirteen 50-pound boxes of dynamite were placed in the heaviest drift east of Fall River Pass. These boxes of dynamite were connected by a lead-covered fuse of T. M. T., which is expected to detonate the thirteen boxes simultaneously. It is planned to explode the dynamite about next June 1, just before the drift is to be cleared. The dynamite was placed on the snow three or four feet above the ground.

COOPERATION IN HAWAII.

Haleakala, the largest extinct volcano in the world, which is one of the features of our Hawaii National Park, is being visited by increasing numbers of visitors. The present rest-house on the summit is inadequate to meet the needs of the visitors, and as we have no Government funds to improve it a campaign has been started throughout the Territory of Hawaii to raise sufficient funds to make the needed improvements.

Another instance of cooperation with the park authorities is the amount of space given to Hawaii National Park in the advertising matter issued by the Inter Island Steam Navigation Company of Honolulu. Superintendent Boles states that the Hawaii Tourist Bureau, the Inter Island Company, and the Kilauea Volcano House Company, combined, are spending more money advertising the park than the total Federal appropriation for its operation.

HOT SPRINGS' NEW HOTEL.

The new Arlington Hotel at Hot Springs has just been completed and elaborate plans are being made for its formal opening to the public on January 1. Director Mather plans to attend the preliminary events on the evening of December 31.

A SAVING OF GOVERNMENT FUNDS.

It is gratifying to record that during the quarter ended September 30, 1924, \$1,826.25 was saved the Government because of prompt payments made by the various parks. The parks and the amount of discount saved by each are as follows:

Crater Lake -----	\$444.68	Platt -----	\$12.99
Glacier -----	265.35	Rocky Mountain -----	16.83
Grand Canyon -----	237.65	Sequoia -----	90.67
Hot Springs -----	103.67	Yellowstone -----	296.44
Mesa Verde -----	67.88	Yosemite -----	245.28
Mount Rainier -----	44.81	Total -----	1,826.25

REPORT OF COMMITTEE ON SOUTHERN APPALACHIAN NATIONAL PARK.

After an extensive study of the Southern Appalachians the committee appointed by Secretary Work last spring to select the most suitable site in that region for a national park recommended the Blue Ridge Mountains of Virginia as the outstanding and logical place for the establishment of the first park in this region. Already a bill has been introduced in Congress by Representative Temple, who was chairman of the Appalachian National Park Committee, for the creation of the park, under the name of the Shenandoah National Park. The area is within a three-hour ride of Washington over a paved road, and within a day's ride of 40,000,000 people. The area of the site recommended is approximately 700 square miles.

A BUFFALO DINNER.

On December 10 Director Mather gave a "buffalo dinner" in honor of Superintendent Albright of the Yellowstone, which was attended by Department and Service officials, a few Senators and Congressmen interested in the Yellowstone and its animal life, a number of newspapermen, and others interested in game conservation. Bison steak from the Yellowstone was served the guests, as well as soup made from pemmican furnished by the Canadian Government. Pemmican, by the way, is buffalo meat cut up and mixed with tallow, then put in skins and sold to the Eskimos and traders in the arctic circle.

During the dinner Superintendent Albright reviewed the history of the Yellowstone buffalo herd and presented details of the proposed "Buffalo Plains Week" to be held in August in Yellowstone Park. Director Mather told how Emerson Hough had written "The Covered Wagon" while in the Yellowstone with Mr. Albright, and that he and Mr. Hough were together in Zion Park when Mr. Hough received word from George Horace Lorimer, editor of the Saturday Evening Post, that the story had been accepted.

Senator Kendrick gave a vivid picture of the Old West that he knew as a young man, and of his friendship with Emerson Hough, who included many of the Senator's early experiences in his "North of '36". Major Welch of the Palisades Interstate Park told of an experience he had as a young man, when the train on which he was riding was stopped for three solid hours while a buffalo herd crossed the track.

Motion pictures were shown of scenes taken in the Yellowstone during the filming of Zane Grey's "Thundering Herd."

AN EXHIBITION OF NATIONAL PARK PICTURES.

The National Gallery of Art in Washington has on display for a month a collection of water color pictures, the greater portion of which depict scenes in the national parks. These are by Gunnar Widforss, the Swedish artist whom Director Mather met in Yosemite National Park several years ago. Mr. Mather was so impressed with Mr. Widforss' work that he persuaded him to go on to Zion, and since then he has been to the Yellowstone and Grand Canyon. The pictures displayed by Mr. Widforss in this exhibition are:

1. Quaking Aspens, Yellowstone National Park.
2. Quaking Aspens, Yellowstone National Park.
3. Coast Scene at Monterey.
4. Coast Scene at Monterey.
5. Lady Mountain, Zion National Park.
6. Catalina Island, California.
7. In the Woods, Yosemite National Park.
8. San Juan Capistrano Mission, California.
9. San Juan Capistrano Mission, California.
10. San Juan Capistrano Mission, California.
11. Foot of Lower Falls, Yellowstone National Park.
12. Autumn, Copenhagen.
13. Island of Moen, Denmark.
14. The Minarets (High Sierras).
15. Tuolumne Meadows, (High Sierras).
16. Cypresses, Monterey.
17. Bryce Canyon, Utah National Park.
18. Bryce Canyon, Utah National Park.
19. Bryce Canyon, Utah National Park.
20. Bryce Canyon, Utah National Park.
21. Zion National Park.
22. Zion National Park.
23. Zion National Park.
24. Temple of Sinawava, Zion National Park.
25. Red Arch Rock, Zion National Park.
26. Angel's Landing, Zion National Park.
27. Angel's Landing, Zion National Park.
28. Evening, Zion National Park.
29. Big Bend, Zion National Park.
30. The Patriarchs, Zion National Park.
31. Brahma and Zoroaster Temples, Grand Canyon National Park.
32. Oza Butte, North Rim, Grand Canyon National Park.
33. From Maricopa Point, Grand Canyon National Park.
34. Evening, Grand Canyon National Park.
35. Mount Clark, High Sierras, California.
36. Half Dome, Yosemite National Park.
37. First Snow, Yosemite National Park.
38. Nevada Falls, Yosemite National Park.
39. Snow Scene, Yosemite National Park.
40. Snow Scene, Yosemite National Park.

41. Yosemite Falls, Yosemite National Park.
42. Sentinel Rock, Yosemite National Park.
43. Point Lobos, Monterey.
44. Windblown Cypress, Monterey.
45. Winter in Yosemite National Park.
46. Rocks and Breakers, Monterey.
47. Rocks and Water, Monterey.
48. Tuolumne Meadows, Yosemite National Park.
49. Mammoth Hot Springs, Yellowstone National Park.
50. Autumn, Yosemite National Park.
51. From Bright Angel Point, Grand Canyon National Park.
52. The Great Thumb, Grand Canyon National Park.
53. The Gathering Storm, Grand Canyon National Park.
54. Grand Canyon of the Colorado.
55. After the Storm, Grand Canyon National Park.
56. Looking West from Hopi Point, Grand Canyon National Park.
57. Looking East from Hopi Point, Grand Canyon National Park.
58. Powell Plateau, Grand Canyon National Park.
59. Zoroaster and Brahma Temples, Grand Canyon National Park.
60. From Yavapai Point, Grand Canyon National Park.
61. The North Rim, Grand Canyon National Park.
62. Zoroaster and Brahma Temples, Grand Canyon National Park.
63. Sunset, Grand Canyon National Park.
64. Yellowstone Canyon, Yellowstone National Park.
65. Yellowstone Canyon, Yellowstone National Park.
66. Yellowstone Canyon, Yellowstone National Park.
67. Yellowstone Canyon, Yellowstone National Park.
68. Yellowstone Canyon, Yellowstone National Park.
69. Yellowstone Canyon, Yellowstone National Park.
70. Yellowstone Canyon, Yellowstone National Park.
71. Angel's Landing, Zion National Park.
72. Sentinel Rock, Zion National Park.

KILAUEA'S NEW ACTIVITY.

After being quiet for some months Hawaii's spectacular active volcano provided a thrilling spectacle to 2,000 officers and men from the Japanese Training Squadron who happened to be visiting the park the end of last month. A tremendous avalanche occurred in the west wall of the crater, throwing clouds of dust into the air nearly a mile high. Similar activity was noted last spring just before the terrific explosions occurred.

NEW DEPARTMENTAL POLICY REGARDING PRESS RELEASE.

The Department has recently decided that press releases will be given out from Washington only when they contain items of real news value. Nothing in the way of propaganda or advertising will be handled from here. The parks should continue to forward to Washington any data that contains real news value from a national standpoint, but nothing that can in any way be construed as park propaganda. Up to date few items of this nature have come in. Surely there must be items of real news value that would appeal to the Department. Send them in!

LETTER OF APPRECIATION.

The following is an extract from a letter recently received by one of the Service officials in Washington:

"I want to assure you of my hearty appreciation of these courtesies and favors. They stamp your Department deeply upon my mind, as one earnestly attempting to serve the people even beyond the letter of the law. I have just received a very fine letter from Mr. Mather in reply to my expression of my great delight with the hearty cooperation rendered by your department. It will be a great pleasure for me to speak a good word for the national parks and the Park Service in my lectures this winter."

PERSONNEL NOTES.

Director Mather returned from California the end of November; and after several strenuous weeks' work here has just left to attend some important conferences in Chicago, where he will also spend the holidays.

Field Assistant Albright, Superintendent of the Yellowstone National Park, accompanied Director Mather east and will attend the Chicago Conference with him, going from there to California where he will be busy for some time on the reorganization of the Yosemite National Park operations.

Under orders from the Service, Assistant Superintendent Bilkert of Yellowstone National Park has been in the Washington Office during the past few weeks receiving instructions regarding various phases of coordination of field and headquarters work, on which his services will be utilized in the future. He will spend the holidays with his family in Michigan on his way back to the park.

HOLIDAY GREETINGS TO THE FIELD SERVICE.

Before leaving town Mr. Mather requested that the following message be included in the news letter:

To the Members of the Service:

I am glad to send my personal greetings to all members of the National Park Service in the field. This has been a splendid year for the Service and all of you have had a hand in our accomplishments. Never before has the work of the field personnel been more appreciated by the general public than during the past year. Complaints have been very few indeed and the words of spontaneous appreciation that have come in from all over the country, and even from foreign lands, make me believe that we are giving a worth-while service. We have had many difficult problems to handle, requiring patience and hard work, but as a whole the solution has been found. Now that there is a possibility that Congress may act in the near future on a great eastern national park, I feel that we are on the threshold of a still larger future field of opportunities.

Our Chief, the Secretary of the Interior, has taken a deep interest in all of you, and intends in the coming year to visit a number of the national parks himself. I am extending, too, his cordial greetings to all members of the Service.

P A R K S E R V I C E B U L L E T I N

UNITED STATES

DEPARTMENT OF THE INTERIOR

National Park Service

By direction of the Secretary of the Interior this publication is issued as an administrative report and is required for the proper transaction of public business.

No. 27.

January, 1925.

ALLOTMENT OF ROAD FUNDS.

After the approval of the Second General Deficiency Act on December 5, 1924, carrying the item of \$1,000,000 for the initiation of our work under the road budget, the following amounts were allotted to the different parks:

Crater Lake National Park -	\$68,000	Platt -----	\$42,000
Glacier -----	343,000	Sequoia -----	75,000
Grand Canyon -----	20,000	Yellowstone -----	30,000
Hawaii -----	25,000	Yosemite -----	200,000
Hot Springs -----	28,000	Washington office -----	4,000
Mesa Verde -----	32,000	Reserve -----	58,000
Mount Rainier -----	75,000	Total -----	\$1,000,000

The Interior Department appropriation bill for 1926, which now is pending in Conference, carries \$1,500,000 as the second installment of funds under the road program. This has been tentatively allotted by parks, as follows:

Crater Lake -----	\$115,000	Mount Rainier -----	\$160,500
Glacier -----	150,000	Rocky Mountain -----	140,500
Grand Canyon -----	79,000	Sequoia -----	104,000
Hawaii -----	85,000	Wind Cave -----	20,000
Hot Springs -----	25,000	Yellowstone -----	136,000
Lafayette -----	50,000	Yosemite -----	285,000
Lassen Volcanic -----	50,000	Washington office -----	6,000
Mesa Verde -----	12,000	Reserve and Monuments --	32,000
Mount McKinley -----	50,000	Total -----	\$1,500,000

ALASKA DOG TEAM AT MOUNT RAINIER PARK.

People taking the opportunity offered at Mount Rainier National Park to enjoy winter sports are thrilled by the sight of an Alaska dog team dragging a light sleigh loaded with passengers along the forest trails. The thirteen wolf-dogs or "huskies" in this team are driven by an Eskimo. This innovation in transportation, introduced by the park operator, has proven a great attraction. Just at present the driver has trouble whenever an elk or deer comes in sight, as the huskies try to break from the trail and follow what to them no doubt seems to be legitimate game. Undoubtedly the dogs will soon learn that these animals are not to be pursued. Dan Kakisenoruk and his dogs came from a point in Alaska some 250 miles north of Nome.

Winter sports are also in full swing in Lafayette, Yosemite, Sequoia, General Grant, and Rocky Mountain Parks. Snowshoeing, skiing, tobogganing, and skating are among the sports in which the growing numbers of winter visitors indulge.

PROPOSED DEVELOPMENT FOR CARLSBAD CAVE.

Since the National Geographic Society's expedition explored Carlsbad Cave last summer and reported it to be one of the largest and most beautifully decorated caverns so far discovered in the world, plans have been made to develop the cave on an adequate scale and make it comfortably and safely accessible to visitors. The first necessity is the construction of a tunnel into the cave, together with a proper lighting system. The pending Interior Department bill carries a Senate amendment adding an item of \$25,000, to be "immediately available for the administration, protection, maintenance, and construction of physical improvements of Carlsbad Cave National Monument in New Mexico whenever the State of New Mexico shall surrender title to section 36, township 24 south, range 24 east, to the United States." It happens that a large portion of the cave, including the proposed entrance, falls on State school lands; hence the proviso regarding surrender of title by the State of New Mexico.

CONSTRUCTION OF NEW KAIBAB TRAIL IN GRAND CANYON.

When it was found last November that the Bright Angel Trail in the Grand Canyon National Park could not be purchased from the County of Coconino, plans were immediately put into effect to construct a new trail into the canyon, and this trail, the new Kaibab Trail, is being rapidly pushed to completion. It descends from Yaki Point, which is to be connected with Grand Canyon Village by motor road. It will be by far the most scenic trail in the canyon, as it winds its way down the walls along a ridge jutting out into the abyss from which magnificent views of the canyon may be had both to the east and the west. The trails used up to the present time follow depressions and the views are hemmed in by the ridges on either side. The trail from Yaki Point to the Tonto Plateau, where it connects with the Tip-off to the

suspension bridge, is entirely new construction and is laid out on safe, easy grades. Improvement of the Kaibab Trail up the north side of the canyon to the north rim is also contemplated. It is expected that the entire improvement of the trail will be completed in time to permit rim-to-rim travel over a good safe trail this summer.

WORTH-WHILE PUBLICITY.

A little instance of the value of publicity is given in a report coming from Sequoia Park. On a recent trip to San Francisco to confer with the Area Coordinator Superintendent White stopped at Mill Valley and gave an illustrated lecture on the park. As a result the following day six Mill Valley boys motored to Three Rivers and the next day went up to Giant Forest in the biggest snowstorm that has occurred there in years. Their parents gave them \$50 for the trip. This of course isn't much, but it all counts; and probably the tales of their experiences will induce others to go, so that there is no telling what the ultimate results will be of this one lecture and the trip of the six boys.

A NEW SPECIES OF WILD LIFE IN SEQUOIA.

While it is against the policy of the National Park Service to introduce a species of animal life not indigenous to the area to any particular park, there is no policy to keep non-indigenous animals out of a park if they decide of their own free will to come in. And that is just what has happened in Sequoia National Park. The park has been "invaded" by the Missouri opossum, an animal until recently unknown in the Three Rivers district of California. It seems that several years ago some of these 'possums were introduced into the area east of Visalia, and when the drought came last year and the streams in their new home dried up they followed along the stream beds until they found running water in the mountainous district a few miles below Three Rivers. From there they came on to the park. When they first arrived in the Three Rivers district the citizens there didn't know what the animals were or where they came from, for many of them had never seen a 'possum before. Judge Fry, Park Commissioner and also in charge of the nature guide service there, has told the story of the invasion by the opossum, in the following amusing poem:

'Possums from Missouri, that's what the people say,
Moving to Sequoia and now well on their way;
'Possums coming singly and 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?

'Possums from Missouri that we read of in the book,
Seldom seen in the day time but this is how they look;
Long nose, short ears, feet brown and bare,
Bodies clad in silvery coats, tails long, without hair;
Daddy 'possums, mamma 'possums and baby ones you know,
All marching to Sequoia where the tall timbers grow.

'Possums from Missouri, that is what we say,
All coming to Sequoia our laws to disobey;
Some come in the day time, others in the dark,
All bent on the one intent to reach Sequoia Park;
Must we stand and guard the lines or must we let them through,
Or shall we wire the Director and ask him what to do?

'Possums from Missouri, that is what we've got,
All heading for Sequoia on the 'possum trot;
'Possums that will grin and growl, then feign that they are dead,
But this is just a camouflage to save their life instead;
Must we stand, must we fight, or shall we wheel and run,
Better 'phone the rangers to bring a Gattling-gun.

ARLINGTON HOTEL OPENED ON SCHEDULE.

The new Arlington Hotel at Hot Springs National Park, costing approximately \$3,000,000, was informally opened on December 20, and on December 31 the formal opening took place, celebrated by a New Year's Eve party in which about 1,500 persons participated. Parties came from Memphis, New Orleans, cities of Texas, from all over Arkansas, and from St. Louis and Chicago. Director Mather and his family attended the event.

TRAGIC END TO MOUNTAIN-CLIMBING EXPEDITION.

With deep regret the Service learned of the death of Miss Agnes W. Vaile, a member of the Colorado Mountain Club and Secretary of the Denver Chamber of Commerce on Long's Peak in the Rocky Mountain National Park. Miss Vaile, with Walter Kiener, a Swiss mountain climber, climbed the east face of Long's Peak, reaching the summit at 4 o'clock Monday morning, January 12. At that time the temperature was fifteen below, with a strong wind blowing. While descending the north side Miss Vaile fell, spraining a ligament, and was unable to walk further. Mr. Kiener left her in a comparatively sheltered spot on a saddle between Long's Peak and Lady Washington at 11 o'clock and returned to Timberline Cabin for help. There he met a searching party of four men and returned with them. When they reached Miss Vaile they found she had perished from the cold.

One of the members of the searching party, Herbert Sortland, who was caretaker at the Long's Peak Inn, was unable to stand the storm. With his face freezing, and unable to see well, he turned back for Timberline Cabin, but never reached there. Members of the National Park Service and the Colorado Mountain Club, as well as people living in the vicinity, are still searching for Mr. Sortland's body.

Mr. Kiener's hand was seriously frozen, but he escaped other serious injury.

POSSIBILITY OF TWO NATIONAL PARKS IN SOUTHERN APPALACHIANS.

In addition to the bills to establish the Shenandoah National Park in Virginia, referred to in the December Bulletin, other bills have now been introduced in Congress to establish the Smoky Mountain National Park, Tennessee-North Carolina. In making its report to the Secretary of the Interior the Southern Appalachian National Park Committee stated that the Great Smoky Mountains region, with its height of mountains, depth of valley, and unexampled variety of trees, shrubs, and plant life surpasses any other region in scenic grandeur. On account of the very ruggedness and height of the Great Smoky area, however, involving difficulties in road construction and other necessary developments to convert it into a national park, the committee decided in favor of the Shenandoah site as the first park, since it could more readily be made available for the use of people in the East. Efforts are now being made to interest Congress in the creation of national parks at both sites.

RARE TURQUOISE MOSAICS FOUND AT CASA GRANDE.

Excavations at the Casa Grande National Monument brought to light a cache of turquoise mosaic work such as has never before been found in the Southwest. Superintendent Pinkley states that this find is of the most remarkable scientific interest.

The cache contained, besides three pieces of mosaic, a set of two perfectly matched turquoise pendants and over nine hundred shell beads. Two of the pieces of mosaic work are in the form of birds, while the third represents a turtle. They were made of wax on a wooden core, with the mosaics placed in the wax. Each bit of stone was worked out in a pyramidal shape, often not more than 3/50ths of an inch square. A total of 492 stones were set in one of the bird designs, with 1,129 in the largest design, that of the turtle. The bird measures about three inches from wing-tip to wing-tip, with a large piece of shell in the center to form a red contrasting motif.

EXPLORATIONS AT CHACO CANYON.

Another interesting turquoise find is that of a four-strand turquoise bead necklace, containing over 2,500 beads, discovered by the National Geographic Society's expedition at Pueblo Bonito in the Chaco Canyon. Mr. Neil Judd, in charge of the expedition, states that the beads, which he estimates to be probably a thousand years old, are splendidly matched in size and color.

In its four years' work at Pueblo Bonito the expedition has uncovered every room and discovered that there were 800 rooms and 32 kivas in the pueblo, which Mr. Judd characterizes as the largest apartment house built anywhere in the world prior to about 1887. He estimates that there were 1,200 inhabitants within its walls at one time. The walls of the community dwelling are in the shape of a crude letter D; and cover 3 acres of ground.

While the exact age of the old ruin has not yet been determined, it is thought to be about a thousand years old, at least. It is hoped, by means of the annual ring growth on the trees that were used in roofing the kivas, to eventually determine the period when Pueblo Bonito housed a large and thriving community.

Pueblo Bonito is only one of eighteen ruined villages in Chaco Canyon.

BIG STEP FORWARD IN CALIFORNIA STATE PARK MOVEMENT.

Many civic and conservation societies from all parts of the State were represented at a meeting held recently in San Francisco, California, for the purpose of working out a comprehensive State Park Plan. J. D. Grant, chairman of the Board of Directors of the Save the Redwoods League, presided. Field Assistant Horace M. Albright and Superintendent W. B. Lewis of Yosemite National Park represented the National Park Service at the meeting. Mr. Albright made a speech in which he assured those in charge of the movement that the National Park Service was ready to cooperate in the work contemplated. Two important resolutions adopted contemplated the development of a comprehensive State Park Plan for California and inaugurating legislation at once which would provide for a central State park commission.

A PRESENT-DAY SOLOMON.

Judge Symes of the Federal District Court, in a decision handed down early in December, imposed a unique punishment that calls to mind the wisdom of Solomon. Four boys last summer left a fire burning near Dream Lake, in Rocky Mountain National Park. For this offense they were tried before Judge Symes. Since they were boys in school, and not earning their own living, the Judge did not feel that a fine was an appropriate punishment, and furthermore, he did not want a criminal record to appear against them. He therefore instructed the boys to make a study of forest fires in Colorado, and the damage caused by them, as well as the precautions that should be taken to guard against them. After this the boys are to write essays, to be submitted to their school authorities and perhaps read before their classes. When this has been done the case is to be dismissed.

PERSONNEL NOTE.

Judge Fry, United States Commissioner for Sequoia and General Grant National Parks, has been honored recently by being elected a life member of the Sierra Club, in recognition of his contributions to science and outdoor life while superintendent of these parks from 1913 to 1920, and while in charge of the nature guide and museum work therein since his appointment as Commissioner in 1920.

P A R K S E R V I C E B U L L E T I N

UNITED STATES
DEPARTMENT OF THE INTERIOR
National Park Service

By direction of the Secretary of the Interior this publication is issued as an administrative report and is required for the proper transaction of public business.

No. 29

March, 1925.

INTERIOR DEPARTMENT BILL ENACTED.

The Interior Department act, containing the appropriations for national parks listed in the last Bulletin, was signed by the President on March 3. The following day the second deficiency act was signed. This act carried an appropriation of \$20,000 for the investigation of areas proposed for national parks in the Southern Appalachians, and also made available for 1925 \$39,171 carried in the deficiency act of last December for the repair of flood damage in Mount Rainier and Rocky Mountain National Parks.

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PROPOSED SOUTHERN APPALACHIAN NATIONAL PARK.

Congress showed its desire to have a further investigation made of the Southern Appalachians by the passage of S. 4109, "An act for the securing of lands in the Southern Appalachian Mountains and in the Mammoth Cave regions of Kentucky for perpetual preservation as national parks." This act authorized the Secretary of the Interior to determine the boundaries and areas of such portions of the Blue Ridge Mountains of Virginia lying east of the South Fork of the Shenandoah River and between Front Royal on the north and Waynesboro on the south, and of such lands in the Smoky Mountains (Tennessee-North Carolina), as may be recommended by him to be acquired and administered as national parks, as well as the Mammoth Cave regions of Kentucky, and to receive definite offers of donations of land and moneys and to secure such options as in his judgment may be considered reasonable and just for the purchase of lands within said boundaries and to report to Congress thereon. The appropriation of \$20,000 made in the last deficiency act was authorized in S. 4109 to cover the necessary expenses of the commission and to enable the Secretary to secure options on desirable tracts of land.

The Secretary, under the authority granted in this act, reappointed the committee which made the preliminary investigation of the Southern Appalachian Mountains, which is headed by Congressman Henry W. Temple of Pennsylvania.

BRIDGE ACROSS THE COLORADO RIVER NEAR THE GRAND CANYON.

The passage of the act of Congress authorizing the construction of a bridge across the Colorado River near Lee Ferry, Arizona, is of interest to the National Park Service, since this bridge, when constructed, will make it possible for motorists to go from the South Rim of the Grand Canyon to the North Rim in a day, and will shorten the distance from the Grand Canyon National Park to Zion National Park to approximately one-third the distance it is now necessary to traverse in going from one to another. At present motorists going from that portion of Arizona north of the Colorado River, known as "The Strip," and from Zion National Park to the portion of Arizona lying south of the river, must, if they wish to follow a safe road, detour through California, and Nevada, or else make a still longer detour through Colorado and New Mexico.

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APPOINTMENT OF COMMISSION TO STUDY TRANSFER OF PUBLIC LANDS FOR PARK PURPOSES.

The President's Committee on Outdoor Recreation, composed of the Secretaries of War, Agriculture, Interior, Commerce, and Labor, recently appointed a commission of five members for the purpose of investigating and passing on the transfer of lands between the National Park Service and the Forest Service. Congressman Henry W. Temple of Pennsylvania is chairman of this Committee and Charles Sheldon of Washington, D. C., who was one of the moving factors in the creation of the Mount McKinley National Park, is vice chairman. The other members are Major W. A. Welch, General Manager of the Palisades Interstate Park, W. B. Greeley, Chief of the Forest Service, and Director Mather. Problems under consideration by either the Interior Department or the Department of Agriculture involving enlargements or adjustments of the national parks or national forests will be thoroughly studied by this commission and reports made to the Secretaries of the two Departments on which they may act in their recommendations for legislation involving the transfer of lands from one Department to the other.

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CONSOLIDATION OF PUBLIC UTILITIES IN THE YOSEMITE.

During the latter part of the month the consolidation of the public utilities in Yosemite National Park was perfected. Mr. Dohrmann president of the Yosemite National Park Company, is chairman of the Board of Directors of the new company, and Mr. Tresidder, manager of the Curry Camping Company, is president and general manager of the consolidated companies. Directors of both companies will be on the new Board of Directors.

WORK UNDER THE ROAD BUDGET.

Plans for work under the road budget are being rapidly pushed, and in some of the more accessible parks work has already been started.

In the Grand Canyon National Park the Bureau of Public Roads is cooperating by lending the Service a locating engineer to make the necessary surveys.

In Hawaii National Park the surveys and construction work will also be handled by the Bureau of Public Roads. That Bureau expects shortly to detail a locating engineer to the Territory of Hawaii, and he will handle park work in connection with Federal aid road work. This is the first time that Federal aid has been extended to the Territory. In the act extending Federal aid to Hawaii it was provided that in approving road projects the Secretary of Agriculture should give preference to those which would expedite the completion of an adequate system of highways for the national defense, or which would connect the seaports with the units of the national park.

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CRATER LAKE BEAR PROTECTED BY CLOSED SEASON.

A State bill was recently signed by the governor of Oregon declaring an 11-months' closed season on bear in Jackson, Josephine, and Klanath counties, which practically surround Crater Lake National Park. For 18 months park authorities have waged an uphill fight, almost alone, to secure this legislation. During the last few months, however, the importance of such legislation dawned on a number of influential friends of the park, who then gave their support to the measure.

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A NEW MOTOR DIFFICULTY.

Recently one of the Sequoia trucks developed internal difficulties of a peculiar nature. When it was overhauled it was found that the radiator, the cap of which had been missing, was full of acorns, deposited there for safe keeping by a California woodpecker.

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NAME "NATIONAL MONUMENT" SOMETIMES CONFUSES.

A report from the custodian of the Verendrye National Monument states that a recent visitor to the monument, after looking carefully over the area, went to headquarters and said he had heard that a monument had been erected at that place and he would like to know who had stolen it. Perhaps it is sometimes difficult for the outsider to distinguish between an area "reserved for historic and scientific purposes" and a slab of stone or marble; nevertheless such mistakes do cause a smile.

ANOTHER INTERESTING BIT OF COOPERATION.

The Nature Guide Service in Yosemite National Park reports that a cooperative arrangement has been made with the Stockton Record whereby park material is furnished the newspaper for its Sunday edition. The paper, after setting up the type and printing its own edition, sends the type to the Yosemite, where any desired number of Yosemite Nature Notes can be struck off. Formerly the Nature Notes were mimeographed, but the demand for copies became so great that printing the Notes became almost a necessity. This is a saving for the Service in time and money, and at the same time greatly adds to the attractiveness of the publication. The Service is much pleased with the appearance of the first printed copy.

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INTERESTING THE SCHOOL CHILDREN.

The custodian of the Gran Quivira reports that the pupils in the sixth, seventh, and eighth grades of the Gran Quivira school were requested to write essays on "The best means of providing comfort and entertainment for tourists at Gran Quivira." If schools in the vicinity of all our national parks and monuments would take up this idea it would be a splendid thing.

Frequently Superintendent Pinkley of Southwestern Monuments reports taking a group of school children through one of his monuments and personally explaining to them the principal features of the reservation. This is an excellent way to provide national park and monument boosters for the future.

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COMPLETION OF PILLSBURY PHOTOGRAPHIC STUDIO.

Mr. A. C. Pillsbury, photographer of Yosemite National Park, passed through Washington last week. He is now in the east filling lecture engagements, but unfortunately did not give a talk here. He expects to return to the park early in April.

While here Mr. Pillsbury told us about his new studio, which is now complete. The exterior of the studio is finished in bark and native boulders, giving a rustic appearance that blends well with the surroundings. At the back of the studio building Mr. Pillsbury has erected a theater, which runs lengthwise across the back of the studio so that the two buildings resemble a letter T. The theater is also finished with bark on the outside. At the end of the studio is a huge fireplace constructed of boulders, which is large enough to hold 16-foot logs. Stairs lead up on either side of the fireplace to a platform or landing behind it, from which access is given to the theater. From photographs we have seen here the whole layout is most attractive.

Mr. Pillsbury says that on the evening the studio was opened a free

show and dance was held there. At that time there were 360 people in the Valley, and of these 356 attended the opening event. The four who were missing were a sick person, the doctor who was called in attendance, the telephone operator, and night watchman.

All who have seen Mr. Pillsbury's flower pictures will be interested knowing that he has sold his new flower pictures to the Pathe people, who will show them in the Pathe Review. They are being sent to Paris for hand-coloring. Mr. Pillsbury has, of course, retained the lecture rights.

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YOSEMITE DEDICATION POSTPONED.

It had been hoped that the dedication of the new museum in Yosemite National Park could be held the latter part of April when the Secretary was expected out there. Since the Secretary's plans have been changed, and he is to reach the park about April 4, it is impracticable to hold the dedication as planned. As the building is not yet finished the dedication can not be advanced to April 4, so it has been decided to postpone it until June. Meanwhile, when he is in the park Secretary Work will accept the donation of the building on behalf of the Government. Director Mather will accompany the Secretary to the Yosemite.

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NEW GLACIER BAY NATIONAL MONUMENT.

The addition of the Glacier Bay National Monument in Alaska almost doubles the area of our national monument system. The area of the 31 monuments previously established is 1,861.32 acres, while that of the Glacier Bay Monument is 1,320 acres.

Glacier Bay is on the southeast coast of Alaska, and the monument contains within its boundaries a number of tidewater glaciers of first rank in a magnificent setting of lofty mountain peaks. Scientific organizations point out that the Glacier Bay district presents a unique opportunity for the scientific study of glacier behavior, of resulting movements and development of flora and fauna, and certain valuable relics of ancient interglacial forests. The area has been visited by a number of explorers and scientists since the voyage of Vancouver in 1791, who left interesting records of such visits and explorations.

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BODY OF HERBERT SORTLAND RECOVERED.

Herbert Sortland, the caretaker of Long's Peak Inn, who lost his life in a gallant effort to rescue Agnes Vaille on Long's Peak, died almost without reach of safety. His body was found late in February just 300 yards southeast of Long's Peak Inn. It is believed that he made the descent of the mountain in safety, lost his way, and then, realizing his mistake, started

retrace his steps to the Inn. In some way he suffered a dislocated hip, and it probably was this that prevented him from reaching the building.

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PERSONNEL NOTES.

During the month Director Mather regretfully accepted the resignation of George C. McClain, who has been his secretary ever since the creation of the Service, and even before that, when Mr. Mather was Assistant to the Secretary under Franklin K. Lane and supervised park work in that capacity. Mr. McClain had a place in the Service, both officially and personally, that it is going to be mighty hard to fill, but since he is going into work that he loves we have to make the best of our own sense of loss and wish him all good luck. For a number of years Mr. McClain has been interested in scientific farming, and has had a farm in Maryland. Now he has decided to give all his time and energy to this work.

From Portland comes word of the culmination of a Glacier Park romance, in the announcement of the marriage of Miss Lulu Hazelbaker, one of the clerks on the Glacier Park staff, to L. L. Hill, who has been in charge of road work in the park for several years. The marriage took place during February. Mr. and Mrs. Hill have the best wishes of the Service.

Early in February Mr. W. M. Austin, assistant engineer, passed through Washington and stopped at the office here. He was on his way to Sequoia National Park to take up engineering work under the road budget.

Assistant Secretary Goodwin of the Department resigned several weeks ago, to accept appointment as a member of the Board for Reappraisal of Reclamation Projects. Solicitor Edwards was then appointed Assistant Secretary. Supervision of national park matters has been transferred from First Assistant Secretary Finney to Assistant Secretary Edwards.

PARK SERVICE BULLETIN

UNITED STATES
DEPARTMENT OF THE INTERIOR
National Park Service

2050
1925
Department of Forestry
University of California

By direction of the Secretary of the Interior this publication is issued as an administrative report and is required for the proper transaction of public business.

No. 31 June, 1925.

YOSEMITE SCHOOL FOR NATURALISTS.

One of the most interesting developments of the last few years in the educational work of the national parks is the establishment of the Yosemite Field School of Natural History, which will open June 29. The school will be under the direction of Dr. H. C. Bryant, economic ornithologist of the University of California, who has been in charge of the Nature Guide Service in Yosemite National Park for several years. The California State Fish and Game Commission is cooperating with the National Park Service in conducting this school. The number of students during the 1925 session, which will last six weeks, will be limited to 20. Two years of college work or the equivalent are required for admission to the school. The plan is to make the work supplement the lower division university courses in botany and zoology, with the opportunity for field work bringing first-hand acquaintance with various living forms. Opportunities for practice in teaching, leading parties afield, presentation of nature lore at the campfire, and writing nature notes will be given every student.

No tuition fees will be charged, the expenses of the students being limited to sundry materials, such as notebooks and collecting apparatus, and transportation, food, and lodging.

Secretary Work has likened the Department of the Interior to a great university, in which the different bureaus are the colleges. Surely the educational work of the National Park Service entitles it to high rank among these "colleges."

FIFTH NATIONAL CONFERENCE ON STATE PARKS.

The Fifth National Conference on State Parks was held at Skyland, Virginia, in the heart of the proposed Shenandoah National Park, on May 25 to 28. This was the most successful conference yet held, delegates being present from every State in the Union. Director Mather's suggestion that a park or camping place was needed every hundred miles along the main highways was taken up by the conference and the slogan "a State park for every hundred miles" was adopted. Director Mather was elected vice chairman of the conference.

NATIONAL CONFERENCE ON OUTDOOR RECREATION.

On May 28 and 29 a meeting of the Executive Committee and Project Committees of the National Conference on Outdoor Recreation was held here in Washington. Assistant Director Cammerer was made chairman of the Public Lands Administration Committee. This committee is one of three very important committees appointed by the conference, the other two being the Committee on Wild Life, and the Committee on Social Relations. The Annual Meeting of the Conference, which had been planned for May 28, was postponed until next December.

ISLE ROYALE.

On June 1 Mr. Thomas F. Cole, of New York, who is intensely interested in the preservation of Isle Royale, Michigan, as a national monument, called on Director Mather here in the office. His enthusiasm was so infectious that Mr. Mather asked him to talk to the entire office force on the subject, which he did, giving us something of the island's early history. It seems that Benjamin Franklin was a member of the commission establishing the boundary between the United States and Canada. It was agreed that this line should run through the center of Lake Erie and Lake Huron, and the Canadian commissioners proposed that it continue on through the center of Lake Superior. This would have given Isle Royale and quite a large portion of Minnesota containing rich mineral deposits to Canada. Franklin, in searching some old records in Paris, discovered the mineral possibilities of the section, and through his efforts an agreement was reached whereby the present boundary was adopted, north of Isle Royale. Mr. Mather then suggested that we owed a memorial to the memory of Benjamin Franklin for saving this mineral-bearing country to the United States, and that the establishment of the proposed monument would be a fitting memorial.

A CALLER FROM THE MOVIES.

Another interesting caller at the office was Tom Mix, who with Mrs. Mix and his press agents called first on Director Mather and then on the Secretary, before giving an exhibition of wild-west riding before the President and Mrs. Coolidge at the White House grounds. Mr. Mix's appearance in the halls of the Interior Department in fancy high-heeled boots and four-gallon cowboy hat created quite a sensation. In a brief talk to the members of the Service he paid a very sincere tribute to the field forces and their management of the parks. He seemed especially to have enjoyed the opportunity he had while in the Yosemite to feed the deer.

PIECE OF PETRIFIED WOOD INSTALLED IN UNIVERSITY OF LIEGE.

A letter recently received from the Institute of Geology of the University of Liege acknowledged the receipt of a piece of petrified wood from the Petrified National Monument, Arizona. The specimen is to be placed in the museum of the University; with an inscription stating that it was donated by the National Park Service.

OPENING CEREMONIES AT ZION NATIONAL PARK.

With the completion of road work in Zion National Park and the reorganization of the park public-utility operations, a big year is expected and elaborate opening ceremonies were staged. The Governor of Utah and members of several State commissions, mayors, members of commercial clubs, and other citizens of Salt Lake City, Ogden, Cedar City, St. George, and Richfield, general passenger agents and other officials of the Union Pacific Railroad, and others assembled at the park entrance on May 15, before an arch covered with native cedar boughs. The arch was closed by a nine-foot facsimile of the Great Seal of the State of Utah. Across the seal hung a great golden lock, supported by two wreaths of roses.

After an address or two the great key to the lock was handed to Governor Dern of Utah by Acting Superintendent Ruesch. The Governor unlocked the huge lock and a minute later his car broke through the seal and officially opened the park to the public. After passing through the arch below the entrance the long caravan of cars rolled up to be checked at the ranger station and then proceeded on to the new Utah Parks Company's Lodge, where luncheon was served. This was followed by talks by a number of prominent people, which in turn was followed by a band concert.

One hundred and ninety-seven cars and 1,152 people registered on the opening day. These figures do not include many who visited the park to attend the opening ceremonies but arrived a day or two ahead of time.

SNOW REMOVAL AND HEAT FROSTRATIONS.

While the cities of the East and Middle West sweltered for ten days in the grip of a hot wave of unusual intensity and duration, word comes from Rocky Mountain National Park of a steam shovel being hard at work clearing the road over the Fall River Pass of snow 18 feet deep. Motion pictures of the snow-removal work were taken by a representative of the Pathe Company.

The thirteen boxes of dynamite which were placed on the road last October at the points where the deepest snow drifts occur were detonated on May 24. At first nothing happened, and some fifty people, including photographers, who had come to see the shot fired were disappointed, and most of them left.

On the chance that the cordeau might have become broken by the weight of the snow near the exposed end, a hole was dug in the snow near the far end of the explosive line. The cordeau was found to be unexploded and it was cut, each end inserted in a stick of dynamite, and the whole detonated.

The shot then went off in good shape. The blanket of snow was so heavy that it was not lifted high, much of it falling back in the trench. The trench produced was 15 to 20 feet in width. It was practically continuous, although deeper craters indicated the location of the boxes of powder. The depth was from 2 or 3 feet to 8 feet or more. The snow broke in large blocks and the bottom was very irregular. More snow was thrown out at the shallower end of the line. About one-third of the snow on the road was removed. The cost of the removal of the snow in this way was about 6 cents per cubic yard, while the cost of shoveling by hand would have been about 20 cents per cubic yard.

GEORGE BIRD GRINNELL NOW HEADS NATIONAL PARKS ASSOCIATION.

Those who have followed the career of George Bird Grinnell, who fifty years ago lead the first fight made for the conservation of the wild life in the new Yellowstone National Park, and since then has been an outstanding figure in national park and general conservation movements, will be glad to know that at the last annual meeting of the National Parks Association he was elected its president. As a young man in his early twenties Mr. Grinnell visited the Yellowstone, and, appalled at the slaughter of its wild animals, was instrumental in bringing about their protection. Later on he was a member of the party that explored Glacier National Park. He has been a park enthusiast first, last, and all the time, and is known as the "Grand Old Man of Conservation

PUBLIC UTILITIES IN SEQUOIA AND GENERAL GRANT
PARKS UNDER NEW MANAGEMENT.

The properties of the Kings River Park Company, in both Sequoia and General Grant National Parks, have been leased for the season, and will be managed by Mr. H. H. Hunkins, who has been associated with the management of the Yosemite National Park Company for several years. Giant Forest Lodge in Sequoia National Park was opened May 20, and the other accommodations were opened May 28.

YOSEMITE MEMORIALS.

Bronze tablets in memory of two men closely connected with the early history of Yosemite National Park have recently been placed in the park. The first tablet was in memory of Dr. Lafayette Houghton Bunnell, who was a member of the first party to enter the Yosemite Valley in March, 1851, who proposed the name "Yosemite," and who was the first to "proclaim its beauty and wonders to the world." This plaque was dedicated by the California Medical Association,

and was placed at the location of the first camp made by the party of which Doctor Bunnell was a member, at the base of the Royal Arches near what is now known as "Indian Cave."

The second plaque commemorates the work of John Muir, author and explorer of the High Sierra. It was placed at the foot of Yosemite Falls by the California Society of Social Work.

ADVERSE EFFECT OF FOOT-AND-MOUTH EPIDEMIC ON 1924 PARK TRAVEL.

The serious effect that the foot-and-mouth epidemic had in curtailing travel in the Southwest last year is shown by the travel reports of the Grand Canyon for the month of April in the past three years. During April, 1923, 520 private cars entered the park; last year during the same month only 297 private cars were checked; while last April the record-breaking number of 971 automobiles entered the park. Weather conditions were about the same during these three periods, and it is evident that the slump in travel last year was due solely to the quarantine restrictions.

A "NATIONAL PARK WEEK!"

National Park Week will be observed in the State of Washington during the week of June 14 to 20. During this time programs calling attention to the beauties of Mount Rainier National Park will be given throughout the State.

AMERICAN NAVAL MEN SEEING HAWAII NATIONAL PARK.

A radiogram just received this morning (June 13) from Superintendent Boles states that 1,500 sailors of the American Navy visited Hawaii National Park yesterday, and the same number is expected for today. Altogether 22 ships of the Fleet are in the harbor. This is a big thing, both for the men and the park.

EARLY TRAVEL TO YELLOWSTONE.

Yellowstone National Park was opened on June 1 to motorists carrying their own camping equipment. On that day private automobiles from 24 different States in the Union were registered, as well as one car from a foreign country. This in spite of the fact that the public utilities' accommodations were not yet open to the public.

FISH PLANTING IN GLACIER PARK.

Superintendent Kraebel of Glacier Park has made arrangements with the Superintendent of the Bozeman Hatchery for the distribution of a total of about five million eggs, fingerlings, and fry this season in the lakes and streams of the park. About 3,500,000 of these will be in the form of eyed eggs of native trout, to be planted in remote and difficult waters.

INTERESTING TRADITION REGARDING MAMMOTH CAVE.

Now that the Mammoth Cave region is under investigation by the Secretary's Commission on the proposed Southern Appalachian Park, the Service is naturally interested in the history of the cave. A letter recently received here told of an old booklet which contained an account of an exploration into Mammoth Cave prior to 1818, at which time the mummy of a woman was discovered. The description contained in the book is said to give in detail information regarding the "sepulchre," position of the mummy, wrappings, weight, and musical instruments and jewelry found with the mummy. It is said that this description plainly shows the woman to have belonged to a race unknown to us. So far the authenticity of this find has not been proved, but the D. A. R. of Charleston, West Virginia, is working on the matter. True or not, it thrills the imagination to think that perhaps long before the days of the American Indians as we know them some race that attained a high degree of culture may have lived in or near Kentucky's famous caves.

N O T E -- AND NOTE WELL!

Sometimes it may seem that one park or another gets undue notice in the Bulletin -- that more news items than seems fair are devoted to one park. There is only one answer to this -- the news contained in the Bulletin is based on the news received from the various parks at this office, and some offices are much more prolific in the matter of news items than others. If you want your park prominently mentioned in the Bulletin, SEND IN ALL THE NEWS ITEMS YOU CAN COLLECT.

PERSONNEL NOTES.

Forest L. Carter has recently been appointed as Superintendent of Platt National Park, upon the resignation of former Superintendent Robert G. Morris. Mr. Carter has been a member of the National Park Service since 1920 when he was appointed ranger in Yellowstone National Park. At the time of his appointment to the superintendency of Platt Park he was serving as Assistant Chief Ranger in the Yellowstone.

Two new custodians have joined the Park Service family, Samuel A. Paisley of Arco, Idaho, having accepted appointment as custodian of the Craters of the Moon National Monument, and Jesse C. Clarke of Flagstaff, Arizona, now being in charge of the Wupatki National Monument.

With deep regret the Service learned of the death of Ranger Henry M. Smith of Lafayette National Park on May 10. The Service has lost a valuable man, for Ranger Smith not only was excellently qualified to act as ranger, but was also thoroughly interested in his work and made it a study as well as an occupation.

Assistant Director Cammerer returned to Washington at the end of May in time to attend the National Conference on Outdoor Recreation, after a five weeks' circle trip in the West.

Director Mather and Mr. Demaray, now Assistant in Operations and Public Relations, are with the Congressional party in Sequoia National Park. Mr. Mather joined the party in Sequoia, while Mr. Demaray met them in San Francisco and went with them to Lassen and Yosemite National Parks.

Dr. Joseph Bolten, Superintendent of the Hot Springs National Park, spent several days in Washington recently on official business.

Since there have been several changes in the roster of superintendents and custodians lately, it seems an opportune time to publish a current list of these officials. This list therefore follows:

<u>Name of Superintendent.</u>	<u>Name of National Park.</u>	<u>Superintendent's Address.</u>
Dr. Joseph Bolten, Superintendent.	Hot Springs,	Hot Springs, Arkansas.
Horace M. Albright, Superintendent.	Yellowstone,	Yellowstone Park, Wyoming.
John R. White, Superintendent.	Sequoia,	Alder Creek headquarters via Three Rivers, Calif.(winter).
John R. White, Acting Superintendent.	General Grant,	Giant Forest, Calif.(summer).
W. B. Lewis, Superintendent.	Yosemite,	Yosemite Nat'l. Park, Calif.
Owen A. Tomlinson, Superintendent.	Mount Rainier,	Ashford, Washington. (winter) Longmire, Washington. (summer)

<u>Name of Superintendent.</u>	<u>Name of National Park.</u>	<u>Superintendent's Address.</u>
Charles Goff Thomson, Superintendent.	Crater Lake,	Medford, Oregon. (winter). Crater Lake, Oregon. (summer).
Roy Brazell, Superintendent.	Wind Cave,	Hot Springs, South Dakota.
Forest L. Carter, Superintendent.	Flatt,	Sulphur, Oklahoma.
Wm. R. Beyer, Acting Superintendent.	Sullys Hill,	Fort Totten, North Dakota.
Jesse L. Musbaum, Superintendent.	Mesa Verde,	Mancos, Colorado.
Chas. J. Kraebel, Superintendent.	Glacier,	Belton, Montana.
Roger W. Toll, Superintendent.	Rocky Mountain,	Room 302, Postoffice Building, Denver, Colorado. (winter). Estes Park, Colorado. (summer).
Thos. Boles, Superintendent.	Hawaii,	Volcano House, Hawaii.
Henry P. Karstens, Superintendent.	Mount McKinley,	McKinley Park, Alaska.
J. Ross Eakin, Superintendent.	Grand Canyon,	Grand Canyon, Arizona.
George B. Dorr, Superintendent.	Lafayette,	Bar Harbor, Maine.
Richard T. Evans, Acting Superintendent.	Zion,	Springdale, Utah.
<u>Name of Custodian.</u>	<u>Name of National Monument.</u>	<u>Custodian's Address.</u>
Frank Finkley, (Also Superintendent Southwestern Monuments.)	Casa Grande, Tumacacori,	Blackwater, Arizona. Blackwater, Arizona.
Martin L. Jackson,	Montezuma Castle,	Camp Verde, Arizona.
John Wetherill,	Navajo,	Kayenta, Arizona.
William Nelson,	Petrified Forest,	Box 33, Holbrook, Arizona.
John T. Needham,	Muir Woods,	Mill Valley, California.
John Otto,	Colorado,	Grand Junction, Colorado.
Homer J. Farr,	Capulin Mountain,	Capulin, New Mexico.

<u>Name of Custodian.</u>	<u>Name of National Monument.</u>	<u>Custodian's Address.</u>
Evon Z. Vogt,	El Morro,	Ramah, New Mexico.
J. E. McClain,	Papago Saguaro,	Tempe, Arizona.
	Scotts Bluff,	Gering, Nebraska.
John M. Thorn,	Devils Tower,	Hulett, Wyoming.
Adolph Larsen,	Verendrye,	Sanish, North Dakota.
Peter Trierschild,	Sitka,	Sitka, Alaska.
Zeke Johnson,	Natural Bridges,	Blanding, Utah.
Earl Morris,	Aztec Ruin,	Aztec, New Mexico.
Herman A. Hermansen,	Pinnacles,	Pinnacles, California.
W. H. Smith,	Gran Quivira,	Gran Quivira, New Mexico.
C. A. Griffin,	Chaco, Canyon,	Crown Point, New Mexico.
Samuel A. Faisley,	Craters of the Moon,	Arco, Idaho,
W. F. McIlvain,	Carlsbad Cave,	Carlsbad, New Mexico,
J. C. Clarke	Wupatki,	Flagstaff, Arizona.

P A R K S E R V I C E B U L L E T I N

UNITED STATES
DEPARTMENT OF THE INTERIOR
National Park Service

By direction of the Secretary of the Interior this publication is issued as an administrative report and is required for the proper transaction of public business.

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November, 1925.

SUPERINTENDENTS' CONFERENCE.

The Eighth National Park Conference, held in Mesa Verde National Park October 1 to 6, inclusive, was primarily a superintendents' conference, being attended by the various park superintendents, the general field officers, park naturalists, and several other field officials, in addition to the Director and Assistant Director from the Washington office. The conference was also attended by several people not directly connected with the Service but interested in its work. These included Mr. H. B. Hommon, sanitary engineer of the Public Health Service, and Dr. L. I. Hewes, Deputy Chief Engineer of the Bureau of Public Roads.

Two of the most important subjects discussed at the conference were the development of good roads under the road budget and the expansion of educational work throughout the parks. While discussing road plans Doctor Hewes went strongly on record in favor of tying up all of the national parks with the Federal aid highway system.

Most of the superintendents were instructed to proceed to the conference by automobile, and their routes were so arranged that they could visit other national parks along the way so that they could get acquainted with their physical characteristics and problems.

No doubt the feature of the conference that made the most lasting impression on the visitors was the presentation of the ceremonial play "Fire" in Spruce Tree House, one of the most famous cliff dwellings, by a cast of Navajo Indians. This is the play written by Mrs. Musbaum and presented first on the occasion of the visit of the congressional party to Mesa Verde last July, which was mentioned in the last Bulletin.

BOUNDARY AGREEMENTS REACHED.

The President's Coordinating Commission on National Parks and National Forests has already filed with the President's Committee on Recreation, composed of the Secretaries of War, Interior, Agriculture, Commerce, and Labor, its reports regarding boundary agreements that have been reached regarding Yellowstone, Grand Canyon, Mount Rainier, Sequoia, and Rocky Mountain National Parks. After consideration by the President's Committee these reports will be in line to be submitted to Congress for official action. The agreements for the new boundaries were reached after an extensive tour of the parks and forests involved by the committee during the past summer.

INSPECTIONS BY COMMITTEE ON SURVEYS.

During the last five or six weeks the Committee on Surveys, consisting of Chief Inspector Gartland and Inspectors Gable and Blossom, has been reviewing the work of the Service. Many valuable suggestions made by the committee have already been put into effect. The inspection, being made by direction of the Secretary of all the bureaus in the Interior Department, will be extended to the field.

HELPFUL PUBLICITY.

C. D. Williamson, of Claremont, California, who lectures before many organizations on national park matters, recently reported that from October 1, 1924, to June 1, 1925, he spoke to approximately 28,000 people on national park matters.

INFORMAL AIRPLANE SURVEY OF MOUNT RAINIER.

Superintendent Tomlinson reported during the summer that an airplane flight of two hours over Mount Rainier National Park enabled him to learn more about the topography of the park, fire hazards, etc., than he could possibly have learned on a month's trail trip. The trip was made through the courtesy of the Army Air Service at Camp Lewis, and officers at the camp cooperated with the Park Service during the summer by operating an unofficial forest patrol, keeping the superintendent informed of fires threatening the park from the outside, and watching for fires in the park forests. This work was extremely valuable, owing to the excessively dry weather that prevailed throughout the season.

YELLOWSTONE PARK PHOTOGRAPHER NOW MUSEUM DIRECTOR.

J. E. Haynes, official photographer of Yellowstone National Park, was designated Acting Director of the Yellowstone museum. Under his direction the museum has been expanded to include an adjoining room formerly assigned to publicity work for the other national parks. The number and variety of the new exhibits, with their attractiveness and effectiveness, created a flood of favorable comment from visitors. Mr. Haynes' only reward for his zeal and great expenditure of time and effort is the consciousness of good work well done.

YELLOWSTONE PUBLICATIONS SENT TO CONGRESSIONAL LIBRARY.

A complete set of Yellowstone Nature Notes was recently sent to the Congressional Library in Washington for reference purposes. Would it not be a good idea for all the parks issuing Nature Notes to do the same thing?



RECESSION OF NISQUALLY GLACIER.

During the past 35 years Nisqually Glacier, in Mount Rainier National Park, has receded an average of 53 feet per year. Of late years the amount of recession has been greater than this. In 1921 it receded more than 100 feet, in 1924 83 feet, and this season the ice retreated 73 feet. Although the glacier moves down hundreds of feet during the year, the melting at the lower end exceeds the rate of advancement, and the result is an annual recession.

SUPERINTENDENT WHITE PROUD OF HIS RANGER FORCE.

Superintendent White of Sequoia National Park reports with pride that not a single complaint was received against his ranger force during the 1925 season, while many favorable comments were made, and this in spite of the fact that with a 35 per cent increase in travel there was only a slight increase in the ranger force. The entire Service joins Colonel White in his pride in his ranger force, and in the whole field personnel of our bureau.

AMERICAN BUFFALO POPULAR.

Again this year when a press announcement was issued that Yellowstone buffalo would be available for distribution the Washington office was deluged with requests for these animals. One of these requests came from Wexford, Ireland.

VICE PRESIDENT DAWES AT GRAND CANYON.

On September 15 Vice-President Dawes visited the Grand Canyon National Park. He was met by Superintendent Eakin and members of the American Legion Post at Grand Canyon. The Vice-President expressed himself as much interested in park problems.

HAWAII ROAD SURVEY MADE.

Superintendent Boles and engineers of the Bureau of Public Roads have made surveys to determine the right of way for a road which will extend to the summit of Haleakala, the world's largest extinct volcano. The highway will be constructed entirely with Federal funds and will be a feature of the general plans for the improvement of the road system through Hawaii National Park, of which Haleakala is a part.

HAWAII PARK HAS MANY ATTRACTIONS.

Mr. Ernest P. Bicknell of the American Red Cross at Honolulu, Hawaii, recently visited Hawaii National Park and was greatly impressed with its many attractions. He states in a letter to Director Mather: "At the present time, as you know, the volcano is quiescent and no fire or molten lava is to be found. The crater and the country surrounding it, however, are alive with steam from



great numbers of cracks and this is a source of never ending interest. Before we went up to the volcano, I was assured by a number of persons that the place was so dead that it was scarcely worth visiting. Nothing could be further from the fact. The steam and the heat which issue from openings everywhere, the great lava field, the enormous depth of the new crater, now thirteen hundred and fifty feet deep and the many interesting phenomena, resulting from former eruptions, together with the luxuriant growth of foliage, especially ferns about the country, combine to give the place the very greatest interest and attraction. It seems to me that the Park Service might do something worth while if it would advertise these many attractions with such illustrations as are possible in order to show the world that an actual eruption of the volcano is by no means necessary to make the park well worth a visit."

GENERALS' HIGHWAY DEDICATED BY DIRECTOR MATHER.

On the morning of September 5, with Director Mather officiating in person, the first link of the new Generals' Highway which eventually will extend from the General Sherman tree in Sequoia National Park to the General Grant tree in General Grant National Park was dedicated with simple ceremonies. The new road was thrown open to travel and a large caravan drove all the way from Three Rivers to Giant Forest. On Labor Day the entrance to the new highway was closed for the winter in order to permit construction crews to complete the highway and place it in shape for next spring's travel.

Many prominent visitors from all parts of California, including officials from the California Highway Commission, the California State Automobile Club, the Automobile Club of Southern California, and supervisors from Fresno and Tulare counties were present and participated in the ceremonies. An open air barbecue lunch at Giant Forest was also held and was followed by addresses from distinguished guests. After this Garnet Holme's Mountain, Forest and Desert Players presented the Pageant "Ersa of the Red Trees."

BOY SCOUTS AID IN TRAIL BUILDING OPERATIONS.

Through the cooperation of the Seattle Council of Boy Scouts of America, 20 Eagle Scouts constructed two new trails in the vicinity of Longmire in Mount Rainier Park. Both of the trails were designed to provide short hiking trips for those visitors who are not physically able to make the more strenuous trips.

FURTHER ROADSIDE CLEAN-UP IN YELLOWSTONE AUTHORIZED FROM PRIVATE FUNDS.

The interested friend of the Park Service who donated \$4,500 last year for roadside clean-up work has now authorized Superintendent Albright to expend an additional \$5,000 on cleaning up the park roads. Work under this donation was started in August.

GREAT NORTHERN DINING CARS NOW SERVING REINDEER MEAT.

The Great Northern Railway Dining Car Department has announced that all dining cars will serve reindeer meat to its patrons in several appetizing forms, according to recipes worked out by the Superintendent of Dining Cars for that railroad. The meat comes from the domesticated reindeer herds of Alaska, and according to those who have tasted it resembles venison.

PERSONNEL NOTES.

Many changes have taken place in the personnel of the Service since the issuance of the last Bulletin. In the Washington office alone there have been four resignations. Mr. Stephenson, chief file clerk, who has been with the Service since its organization, and who handled park files before that in the Office of the Secretary, resigned to go to Florida, and from latest reports is meeting with good success in his new venture. He was accompanied by Mr. Nash, a temporary draftsman in the office here, who resigned about the same time.

Charles R. Brill, file clerk in the Secretary's Office, was transferred to the Service to fill the vacancy created by Mr. Stephenson's resignation.

Mrs. Anne O. Lamb, secretary to Assistant Director Cammerer, resigned November 15 to devote all her time to her home duties, and Miss Irene Cross, personnel clerk in the Chief Clerk's office, resigned at the same time. The cause of her resignation is a romance which developed during the time Mr. Nash was in the office, and which culminated in their marriage in Florida.

Mrs. Lamb was succeeded as Mr. Cammerer's secretary by Miss Madeleine M'Grath, formerly of the Geological Survey, and Miss Elizabeth Gillespie, formerly of the Secretary's Office and the Indian Office, became personnel clerk.

It is with deep regret that the Washington office has to report the first death that has occurred in the headquarters force. Donnally Garrettson, who succeeded Mr. McCreary as assistant file clerk, died very suddenly at Walter Reed Hospital about two months ago.

James M. Dalton was recently appointed to fill the vacancy thus created.

Many changes have also taken place in the field personnel during this period.

Superintendent Forest L. Carter of Platt National Park, formerly Assistant Chief Ranger in the Yellowstone, has now become Chief Ranger of Glacier National Park, succeeding Chief Ranger Brooks who recently resigned. Wm. E. Branch, Park Ranger of Mesa Verde National Park, has been appointed Superintendent of Platt Park.

Another field resignation was that of Peter E. Bilkert, Assistant Superintendent of the Yellowstone, who resigned during September. Both Mr. and Mrs. Bilkert were very popular in the Yellowstone colony.

Acting Superintendent Evans of Zion National Park was released from duty November 1 and returned to Washington. After two weeks' service at Camp Humphreys as an engineer reserve officer he again took up his duties with the Geological Survey. During his short time with the Park Service Mr. Evans made many friends, both among the personnel of the Service and the visiting public at Zion.

Custodian William Nelson of the Petrified Forest resigned October 31, to take a much-needed rest. His duties have been assumed by Ranger Edward Rogers as Acting Custodian. Mr. Nelson's enthusiasm for his work was very inspiring alike to the Service and visitors to his monument.

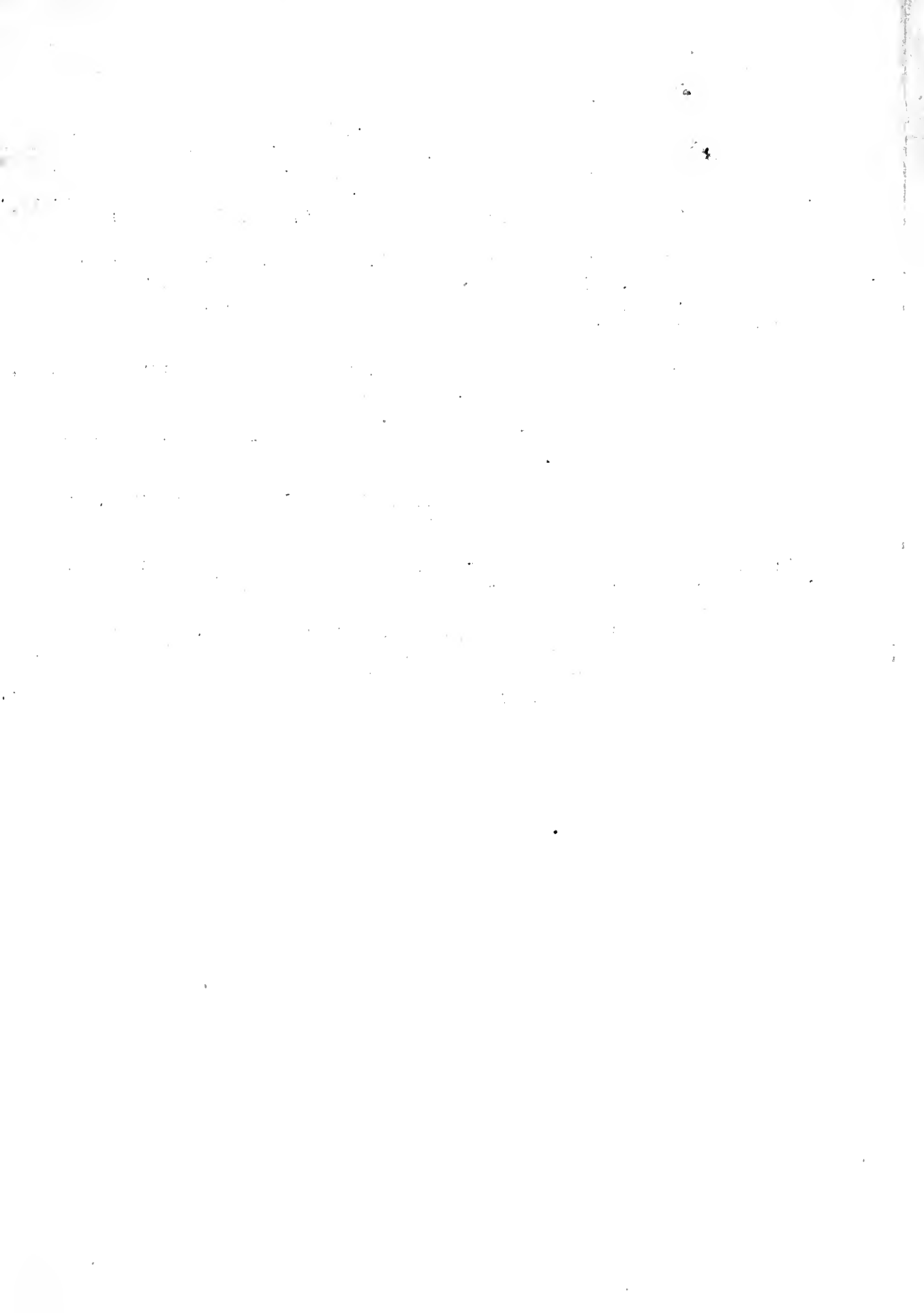
Another change in custodians occurred at the Pinnacles National Monument, where Mr. Hermansen was succeeded by W. I. Hawkins on September 16.

A. W. Mathers of Gering, Nebraska, was appointed to the custodianship of Scotts Bluff National Monument.

Daniel J. Tobin, Chief Clerk of Sequoia National Park since 1922, has been appointed Assistant Superintendent of that Park.

Thomas J. Allen, jr., Chief Park Ranger in Rocky Mountain National Park since 1923, has been appointed Assistant Superintendent there.

The Service recently learned that Chief Ranger Forest S. Townsley of Yosemite National Park was married in San Francisco on September 13. Rumors of other marriages among the field force have reached the Washington office, but since they are merely rumors can not be published in this number of the Bulletin.



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