

UNITED STATES
DEPARTMENT OF THE INTERIOR
RAY LYMAN WILBUR, SECRETARY
NATIONAL PARK SERVICE
HORACE M. ALBRIGHT, DIRECTOR

CIRCULAR OF GENERAL INFORMATION REGARDING

YELLOWSTONE

NATIONAL PARK

WYOMING

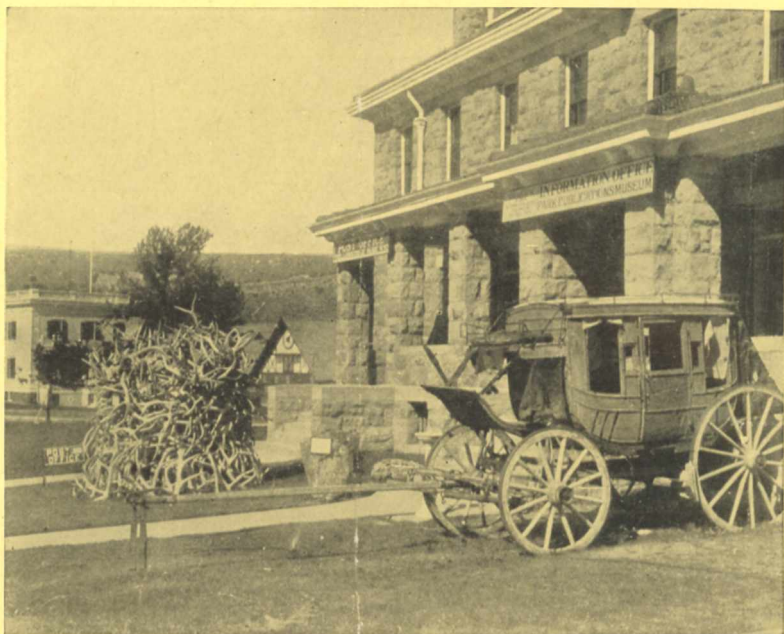


© Haynes

THE NEW 1928 GEYSER

Season from June 20 to September 19

U. S. GOVERNMENT PRINTING OFFICE: 1929



INFORMATION OFFICE AND PARK MUSEUM AT MAMMOTH HOT SPRINGS
OLD STAGE COACH IN FRONT



Haynes Photograph.

CAMPING IN MAMMOTH HOT SPRINGS AUTOMOBILE CAMP

As many as 300 cars may be parked in this site in a single night during the tourist season

The Haynes Guide Book of the Yellowstone supplements this information circular and contains more illustrations and fuller historical data. It is edited and approved by the National Park Service and is on sale at all points in the park at prices approved by the Government.

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THE NATIONAL PARKS AT A GLANCE

[Number, 21; total area, 12,113. square miles]

National parks in order of creation	Location	Area in square miles	Distinctive characteristics
Hot Springs..... 1832	Middle Arkansas.....	1½	46 hot springs said to possess healing properties—Many hotels and boarding-houses—19 bath-houses under Government supervision.
Yellowstone..... 1872	Northwestern Wyo- ming.	3,426	More geysers than in all rest of world together—Boiling springs—Mud volcanoes—Petrified forests—Grand Canyon of the Yellowstone, remarkable for gorgeous coloring—Large lakes—Many large streams and waterfalls—Vast wilderness, one of the greatest wild bird and animal preserves in world—Exceptional trout fishing.
Sequoia..... 1890	Middle eastern Cali- fornia.	604	The Big Tree National Park—Scores of sequoias 20 to 30 feet in diameter; thousands over 10 feet in diameter—The General Sherman Tree is 37.3 feet in diameter and 273.9 feet high—Tower- ing mountain ranges, including Mount Whitney, the highest mountain in continental United States—Startling precipices—Deep can- yons.
Yosemite..... 1890	do.....	1,126	Valley of world-famed beauty—Lofty cliffs—Ro- mantic vistas—Many waterfalls of extraor- dinary height—3 groves of big trees—High Sierra—Waterwheel Falls—Good trout fishing.
General Grant..... 1890	do.....	4	Created to preserve the celebrated General Grant Tree, 40.3 feet in diameter—6 miles from Sequoia National Park.
Mount Rainier..... 1899	West central Wash- ington.	325	Largest accessible single peak glacier system—23 glaciers, some of large size—48 square miles of glacier, 50 to 500 feet thick—Wonderful sub- alpine wild-flower fields.
Crater Lake..... 1902	Southwestern Oregon.	249	Lake of extraordinary blue in crater of extinct volcano—Sides 1,000 feet high—Interesting lava formations—Fine fishing.
Platt..... 1902	Southern Oklahoma...	1½	Sulphur and other springs possessing medicinal value.
Wind Cave..... 1903	South Dakota.....	17	Cavern having many miles of galleries and numerous chambers containing peculiar forma- tions.
Sullys Hill..... 1904	North Dakota.....	1½	Small park with woods, streams, and a lake—Is a wild-animal preserve.
Mesa Verde..... 1906	Southwestern Colo- rado.	77	Most notable and best preserved prehistoric cliff dwellings in United States, if not in the world.
Glacier..... 1910	Northwestern Mon- tana.	1,534	Rugged mountain region of unsurpassed Alpine character—250 glacier-fed lakes of romantic beauty—60 small glaciers—Precipices thou- sands of feet high—Almost sensational scenery of marked individuality—Fine trout fishing.
Rocky Mountain... 1915	North middle Colo- rado.	378	Heart of the Rockies—Snowy range, peaks 11,000 to 14,255 feet altitude—Remarkable records of glacial period.
Hawaii..... 1916	Hawaii.....	245	Three volcanic areas—Kilauea and Mauna Loa, active volcanoes on the island of Hawaii; Hale- akala, a huge extinct volcano on the island of Maui.
Lassen Volcanic.... 1916	Northern California...	163	Only active volcano in United States proper— Lassen Peak 10,460 feet—Cinder Cone 6,907 feet—Hot springs—Mud Geysers.
Mount McKinley... 1917	South central Alaska..	2,645	Highest mountain in North America—Rises higher above surrounding country than any other mountain in the world.
Grand Canyon..... 1919	North central Arizona.	1,009	The greatest example of erosion and the most sublime spectacle in the world.
Acadia..... 1919	Maine coast.....	15	The group of granite mountains upon Mount Desert Island, and also bold point on opposite mainland across Frenchmans Bay. Formerly called the Lafayette National Park.
Zion..... 1919	Southwestern Utah...	120	Magnificent gorge (Zion Canyon), depth from 1,500 to 2,500 feet, with precipitous walls—Of great beauty and scenic interest.
Bryce Canyon..... 1928	do.....	22	Box canyon filled with countless array of fantasti- cally eroded pinnacles. Best exhibit of vivid coloring of earth's materials.
Grand Teton..... 1929	Northwestern Wyo- ming.	150	Includes spectacular Teton Mountains, a granite uplift of unusual grandeur.

YELLOWSTONE NATIONAL PARK

GENERAL DESCRIPTION

The Yellowstone National Park was created by the act of March 1, 1872. It is 62 miles long and 54 miles wide, giving an area of 3,348 square miles, or 2,142,720 acres. It is under the control and supervision of the National Park Service of the Interior Department.

The Yellowstone is probably the best known of our National Parks. Its geysers are celebrated the world over, because for size, power, and variety of action, as well as number, the region has no competitor. New Zealand, which ranks second, and Iceland, where the word "geyser" originated, possess the only other geyser basins of prominence, but both together do not offer the visitor what he may see in two or three days in Yellowstone. Indeed, the spectacle is one of extraordinary novelty. There are few spots in this world where one is so strongly possessed by emotions of wonder and mystery. The visitor is powerfully impressed by a sense of nearness to nature's secret laboratories.

The Yellowstone National Park is located in northwestern Wyoming, encroaching slightly upon Montana and Idaho.¹ It is our largest national park. The central portion is essentially a broad, elevated, volcanic plateau, between 7,000 and 8,500 feet above sea level, and with an average elevation of about 8,000 feet. Surrounding it on the south, east, north, and northwest are mountain ranges with culminating peaks and ridges rising from 2,000 to 4,000 feet above the general level of the inclosed table-land.

Practically the entire region is volcanic. Not only the surrounding mountains but the great interior plain is made of material once ejected, as ash and lava, from depths far below the surface. Geological speculation points to a crater which doubtless once opened just west of Mount Washburn. Looked down upon from Washburn's summit and examined from the main road north of the pass, the conformation of the foreground and of the distant mountains is suggestive even to the unscientific eye.

¹ Of the park area 3,145 square miles are within the State of Wyoming, 245 square miles within the State of Montana, and 36 square miles within the State of Idaho.

In addition to these speculative appearances positive evidence of Yellowstone's volcanic origin is apparent to all in the black glass of Obsidian Cliff, the whorled and contorted lavas along the road near the top of Mount Washburn, and the brilliantly colored decomposed lava walls of the Grand Canyon.

THE GEYSERS

There are six geyser basins, the Norris, Lower, Midway, Upper, Heart Lake, and Shoshone Basins, all lying in the west and south central parts of the park. The geysers exhibit a large variety of character and action. Some, like Old Faithful, spout at quite regular intervals, longer or shorter. Others are irregular. Some burst upward with immense power. Others shoot streams at angles or bubble and foam in action.

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

It is then that the water at the surface of the geyser begins to bubble and give off clouds of steam, the sign to the watchers above that the geyser is about to play.

At last the water in the bottom reaches so great an expansion under the continued heat that the less-heated water above can no longer weigh it down so it bubbles over, thus relieving the pressure on the super-heated water below, which instantly flashes into steam, pushing the entire mass upward in an eruption. The water rises many feet into the air and continues to play until practically all the water in the crater has been expelled. The water, cooled and falling back to the ground, again seeps through the surface to gather as before in the crater's depth, and in a greater or less time, according to difficulties in the way of its return, becomes reheated to the bursting point, when the geyser spouts again.

One may readily make a geyser in any laboratory with a test tube, a little water and a Bunsen burner. Geyser models may be seen at the Old Faithful and Mammoth Museums. These geysers, when in action, play at short regular intervals. The water is heated electrically in a metal tube and finds its way to the surface through a winding tube. After the eruption it drains back into the bulb by another tube where it remains until it becomes sufficiently hot to repeat the performance.

OTHER HOT-WATER PHENOMENA

Nearly the entire Yellowstone region is remarkable for its hot-water phenomena. The more prominent geysers are confined to three basins lying near each other in the middle west side of the park, but other hot-water manifestations occur at more widely separated points. Marvelously colored hot springs, mud volcanoes, and other strange phenomena are frequent. In certain areas hot water has brought to the surface quantities of white mineral deposits which build terraces of beautifully incrustated basins high up into the air, often engulfing trees of considerable size. The hot water pours over the edges of these carved basins. Microscopic plants called algæ grow on the edges and sides of these basins, painting them with hues of red and pink and bluish gray, which glow brilliantly. Other plants known as bacteria are found in long strings of yellow and white where the water is hottest. Still others, also microscopic in size, known as diatoms, occur singly or in colonies clinging to the sides or to the algæ themselves. At many other points lesser hot springs occur, introducing strange, almost uncanny, elements into wooded and otherwise quite normal landscapes.

A tour of these hot-water formations and spouting geysers is an experience never to be forgotten. Some of the geysers play at quite regular intervals. For many years the celebrated Old Faithful has played with average regularity every 65 minutes. Some of the largest geysers play at irregular intervals of days, weeks, or months. Some very small ones play every few minutes. Many bubbling hot springs, which throw water 2 or 3 feet into the air once or twice a minute, are really small, imperfectly formed geysers.

The hot-spring terraces are also an awe-inspiring spectacle. Well-marked trails wind their way everywhere among the steaming pools. Visitors should keep on the trails, as in many places the crust is thin and walking on it is extremely dangerous. In certain lights the surface of these pools appear vividly colored. The deeper hot pools are often intensely blue. The incrustations are often beautifully crystallized. Clumps of grass, and even flowers, which have been submerged in the charged waters, become exquisitely plated as if with frosted silver.

GRAND CANYON OF THE YELLOWSTONE

But the geysers and hot-water formations are by no means the only wonders in the Yellowstone. Indeed the entire park is a wonderland. The Grand Canyon of the Yellowstone affords a spectacle worthy of a national park were there no geysers. But the grand canyons, of which there are several in our wonderful western country, are not to be confused. Of these, by far the largest and

most impressive is the Grand Canyon of the Colorado River in Arizona. That is the one always meant when people speak of visiting "The Grand Canyon," without designating a location. It is the giant of canyons.

The Grand Canyon of the Yellowstone is altogether different. Great though its size, it is much the smaller of the two. What makes it a scenic feature of the first order is its really marvelous coloring. It is the cameo of canyons.

Standing upon Inspiration Point, which pushes out almost to the center of the canyon, one seems to look almost vertically down upon the foaming Yellowstone River. To the southwest a waterfall, twice the height of Niagara, rushes seemingly out of the pine-clad hills and pours downward, to be lost from view behind a projecting parapet of the canyon wall. From that point to where you stand widens out the most glorious kaleidoscope of color you will ever see in nature. The steep slopes, dropping on either side a thousand feet and more from the pine-topped levels above, are inconceivably carved and fretted by the frost and the erosion of the ages. Sometimes they lie in straight lines at easy angles, from which jut high rocky prominences. Sometimes they lie in huge hollows carved from the side walls. Here and there jagged rocky needles rise perpendicularly for hundreds of feet like groups of gothic spires.

The whole canyon is colored as brokenly and vividly as the field of a kaleidoscope and is streaked and spotted in every shade from the deepest orange to the faintest lemon; from deep crimson through all the brick shades to the softest pink; from black through all the grays and pearls to glistening white. The greens are furnished by the dark pines above, the lighter shades of growth caught here and there in soft masses on the gentler slopes and the foaming green of the plunging river so far below. The blues, ever changing, are found in the dome of the sky overhead.

It is a spectacle which one looks upon in silence.

There are several spots from which fine partial views may be had, but no person can say he has really seen the canyon who has not stood upon Inspiration Point, on the north rim, and upon Artist Point, across the gorge.

DUNRAVEN PASS AND TOWER FALLS

From the canyon the visitor follows the road northward to Tower Falls on his way to Mammoth Hot Springs and views some of the most inspiring scenery in America. The crossing of Dunraven Pass and the ascent of Mount Washburn are events which will linger long in vivid memory.

A few miles farther north, at Tower Falls, where the road again approaches the canyon of the Yellowstone River, scenery which has

few equals is encountered. The river's gorge at this point, the falls of Tower Creek, and the palisades of rock far above the foaming Yellowstone are picturesque to a high degree.

REMARKABLE FOSSIL FORESTS

The fossil forests of Yellowstone Park may be found over extensive areas in the northern portion of the park, being especially abundant along the west side of Lamar River for about 20 miles above its junction with the Yellowstone. Here the land rises rather abruptly to a height of approximately 2,000 feet above the valley floor. It is known locally as Specimen Ridge, and forms an approach to Amethyst Mountain.

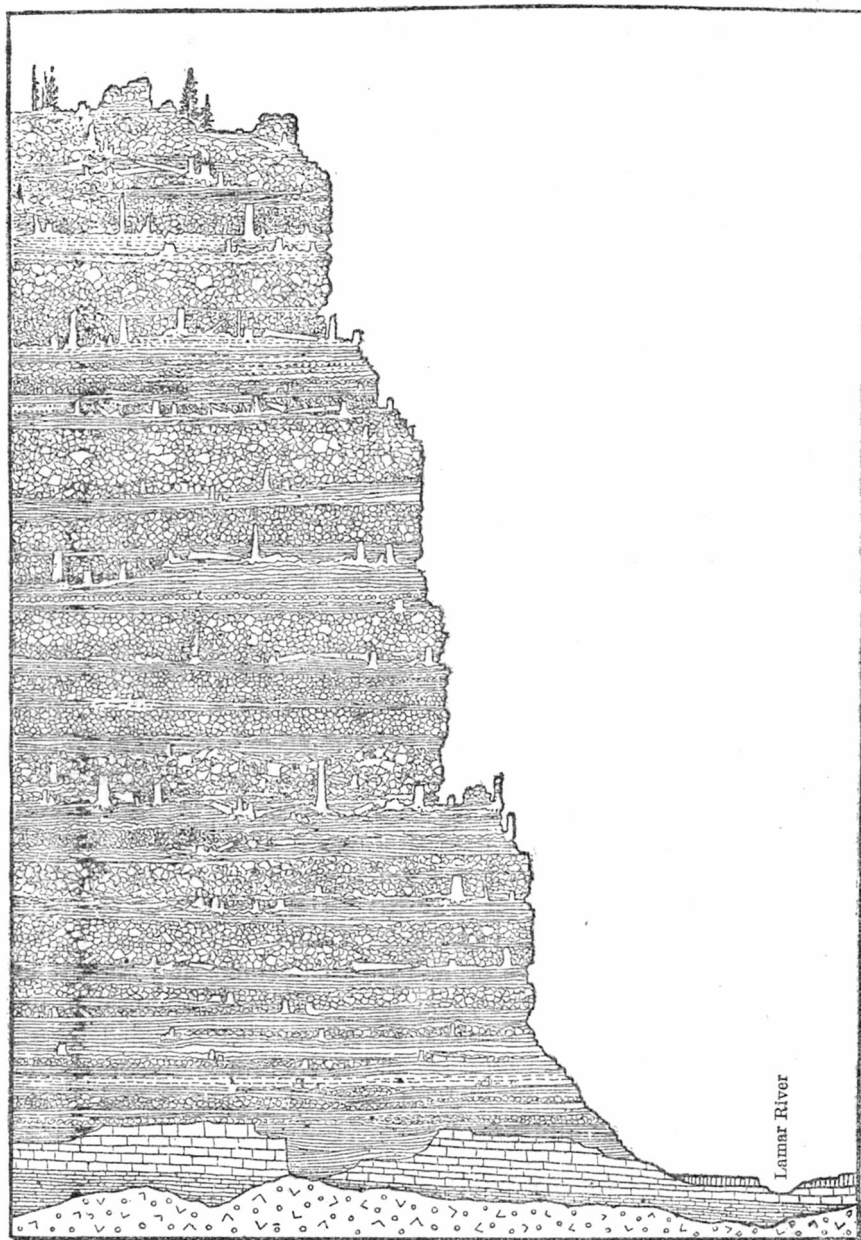
One traversing the valley of the Lamar River may see at many places numerous upright fossil trunks in the faces of nearly vertical walls. These trunks are not all at a particular level, but occur at irregular heights; in fact, a section cut down through these 2,000 feet of beds would disclose a succession of fossil forests, as in the accompanying illustration. That is to say, after the first forest grew and was entombed by volcanic ash there was a time without volcanic outburst—a period long enough to permit a second forest to grow above the first. This in turn was covered by volcanic material and preserved, to be followed again by a period of quiet, and these more or less regular alternations of volcanism and forest growth continued throughout the time the beds were in process of formation. This process must have taken thousands upon thousands of years and no geologist would dare to predict that within a few thousand years the forests of the Yellowstone will not again be buried by volcanic ash, on the top of which may flourish a new Yellowstone.

There is also a small fossil forest containing a number of standing trunks near Tower Falls, and near the eastern border of the park along Lamar River in the vicinity of Cache, Calfee, and Miller Creeks there are many more or less isolated trunks and stumps of fossil trees. In and near the park, in the Gallatin Mountains, between the Gallatin and Yellowstone Rivers, another petrified forest, said to cover more than 35,000 acres and to contain many wonderful upright trunks, has been recently discovered. These wonders are easily reached with saddle horses.

GREAT WILD-LIFE REFUGE

The Yellowstone National Park is one of the largest and most successful wild-life refuges in the world. For this reason it is also an excellent and accessible field for nature study.

Its 3,426 square miles of mountains and valleys remain nearly as nature made them, for the 302 miles of roads and the hotels, lodges,



IDEAL SECTION THROUGH 2,000 FEET OF BEDS OF SPECIMEN RIDGE, SHOWING SUC-
CESSION OF BURIED FORESTS. AFTER HOLMES

and auto camps are as nothing in this immense wilderness. No tree has been cut except when absolutely necessary for road, trail, or camp. No herds of domestic animals invade its valleys. Visitors for the most part keep to the beaten road, and the wild animals have learned in the years that they mean them no harm. To be sure they are not always seen by the people in the automobile busses which move from point to point daily during the season; but the quiet watcher on the trails may see deer and bear and elk and antelope to his heart's content, and he may even see mountain sheep, moose, and bison by journeying on foot or by horseback into their distant retreats. In the fall and spring when the crowds are absent, wild deer gather in great numbers at the hotel clearings to crop the grass. One of the diversions at the road builders' camps in the wilderness is cultivating the acquaintance of the animals.

Thus one of the most interesting lessons from the Yellowstone is that wild animals are fearful and dangerous only when men treat them as game or as enemies.

BEARS

Even the big grizzlies, which are generally believed to be ferocious, are proved by our national parks' experience to be inoffensive if not molested. When attacked they become fierce antagonists indeed. It is not only extremely dangerous but contrary to the park regulations to molest, touch, or tease the bears.

The brown, cinnamon, and black bears, which are color phases of the same species—the blonds and brunettes of the same family, so to speak—are playful, comparatively fearless, sometimes even friendly. They are greedy fellows, and steal camp supplies whenever they can. *Visitors must not feed bears* as this has resulted in the past in many injuries, some of which have been severe.

This wild-animal paradise contains several thousand elk, a few hundred moose, innumerable deer, many antelope, numerous bands of mountain sheep, and a large and increasing herd of bison.

It is an excellent bird preserve also, where more than two hundred species live natural, undisturbed lives. Eagles may be seen among the crags. Wild geese and ducks are found in profusion. Many large white swans and pelicans add to the picturesqueness of Yellowstone Lake.

TROUT FISHING

Trout fishing in Yellowstone waters is unexcelled. All of the great watersheds abound in trout, which often attain great size. Yellowstone Lake is the home of large trout, which are taken freely from boats, and the Yellowstone River and its tributaries yield excellent catches to the skillful angler.

The Madison River and its tributaries also abound in trout, and Montana grayling are to be caught in the northwestern streams.

There is excellent fishing also in many of the smaller lakes. Detailed information concerning fishing is found, beginning on page 59.

THE GRAND TETON NATIONAL PARK

The criticism often has been made by persons who have visited granite regions that the Yellowstone region lacks the supreme grandeur of some others of our national parks, and it was planned to add the magnificent Teton Mountains just south of the southern boundary to the park. These mountains begin at the foot of the Pitchstone Plateau, a mile or two below the southern gateway, and extend south and west. They border Jackson Lake on its west side, rising rapidly in a series of remarkably toothed and jagged peaks until they reach a sublime climax, 30 miles south of the park, in the Grand Teton, which rises cathedral-like to an altitude of 13,747 feet. Now, however, they have been included in the new Grand Teton National Park created February 26, 1929.

This whole amazing outcropping of gigantic granite peaks is in many respects the most imposing, as certainly it is the most extraordinary, massing of mountain spires in America. It leaps more than 7,000 feet vertically from the lake and plain. Seen from the road at Moran, where the Snake River escapes from the reclamation dam which pens flood waters within Jackson Lake for the benefit of farms in arid western lands, these mountains seem actually to border the lake's west shore. It is hard to realize that these stupendous creations of the Master Architect, bearing upon their shoulders many glistening glaciers, are 9 miles away.

Jackson Hole, as this country has been known for many years, was the last refuge of the desperado of the picturesque era of our western life. Here, until comparatively recent years, the bank robber of the city, the highwayman of the plains, the "bad man" of the frontier, the hostile Indian, and the hunted murderer found safe retreat. In these rolling, partly wooded plains and the foothills and canyons of these tremendous mountains even military pursuers were baffled. Here for years they lived in safety on the enormous elk herds of the neighborhood and raided distant countrysides at leisure.

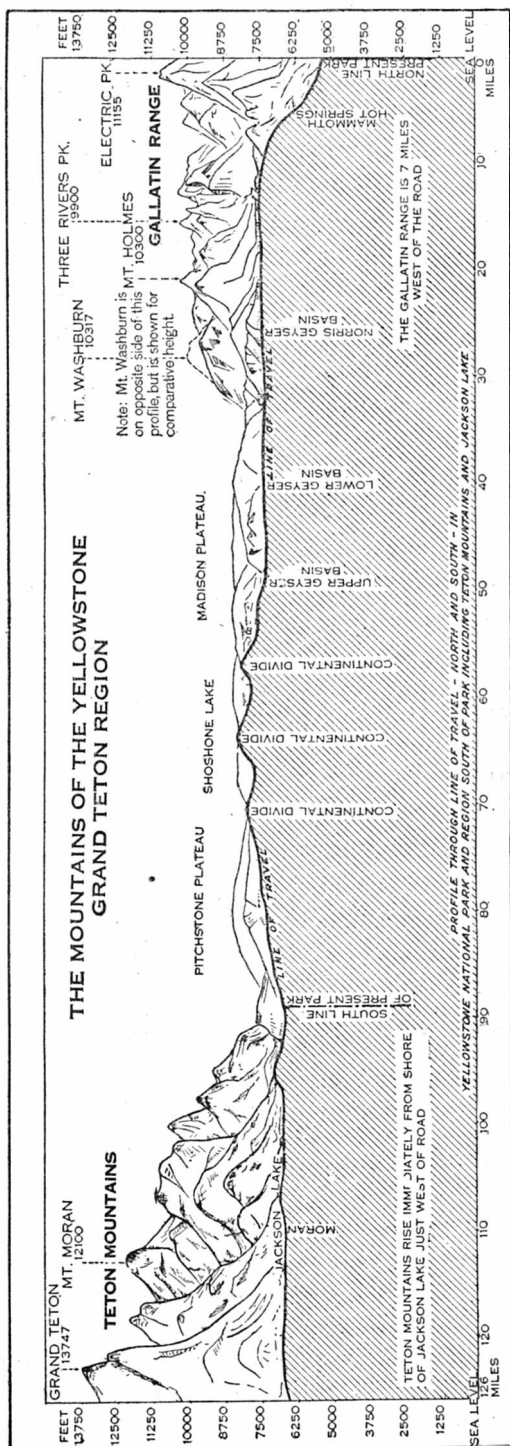
With the passing of the Old West and the partial protection of the game Jackson Hole entered upon its final destiny, that of contributing to the pleasure and inspiration of a great and peaceful people. The very contrast between its gigantic granite spires and the beautiful rolling plateau and fruitful farms farther to the south is an element of charm.

These amazing mountains are, from their nature, a component part of the Yellowstone National Park, whose gamut of majestic scenery they complete, and no doubt would have been included within its original boundaries had their supreme magnificence been then appreciated. Already Yellowstone visitors have claimed them, and automobile stages run to Moran and back on regular schedule.

THE RED CANYON OF THE SHOSHONE

Jackson Hole is not the only spectacle of magnificence intimately associated with Yellowstone but lying without its borders. Eastward through picturesque Sylvan Pass, well across the park boundary, the road passes through a red-walled canyon so vividly colored and so remarkably carved by the frosts and the rains of ages that its passage imprints itself indelibly upon memory. It is no wonder that a hundred curious names have been fastened upon these fantastic rock shapes silhouetted against the sky.

And miles farther on, where the united forks of the Shoshone won a



precipitous way through enormous walls of rock, the Shoshone Dam, one of the highest in the United States, higher than New York's famous Flatiron Building, holds back for irrigation a large and deep lake of water and creates, through partnership of man and nature, a spectacle of grandeur perhaps unequaled of its kind. The road, which shelves and tunnels down the canyon, forcing a division of space with the imprisoned river, is one of the sensational runs of the West.

THE TRAIL SYSTEM

The motorization of Yellowstone National Park, which is now complete, by reducing greatly the time formerly required to travel from scenic spot to scenic spot, permits the tourist to spend a far greater proportion of his allowance of time in pleasurable sight-seeing. It has also brought to the park many thousands of more or less leisurely motorists in their own cars, many of whom bring with them their own camping-out equipment. The day of the new Yellowstone, of Yellowstone the vacation land, has dawned.

To fill these new needs the National Park Service is developing the trail system as rapidly as time and appropriations permit. Much has already been accomplished, and several hundred miles of fairly good trails are now available for the horseback rider and hiker. These trails lead into splendid scenic sections of the park, out to streams and lakes teeming with fish, far away into the foothills of the Absaroka Range where the wild buffalo graze, into the petrified forests and other regions of strange geological formations, out beyond the east boundary to picturesque old mining camps, and they afford park tours touching the same important points of interest that the road system includes, although sections of the roads must be used in these circle tours. If parties wish to travel on the trails without the service of a guide, careful inquiries should be made at the office of the superintendent or at the nearest ranger station before starting, and a good map should be procured and studied. The map in the center of this booklet merely sketches the trail system. On pages 53 to 55 the reader will find an outline of the important trail trips.

ADMINISTRATION OF THE PARK

Headquarters of Yellowstone National Park are at Mammoth Hot Springs, 5 miles from the north gateway. Here are the executive offices of the park administration and of the public utilities that operate in the park under Government regulation and supervision.

The officer of the National Park Service in immediate charge of the park is the superintendent, Roger W. Toll. His office is in the

general headquarters building and his address is Yellowstone Park, Wyo. All complaints and suggestions regarding service in the park should be addressed to the superintendent.

PROTECTION OF THE PARK

The park is protected by a permanent ranger force composed of men who are skilled in forest-fire fighting and in the detection of offenses in violation of the rules and regulations governing the park. This ranger force is augmented in the summer season by temporary rangers who are assigned to protect the natural features of the park from depredations by thoughtless and careless tourists. This temporary force as well as the regular ranger service is charged with the duty of giving information to visitors and rendering other assistance to the touring public.

THE GUIDE, LECTURE, AND MUSEUM SERVICE

Ranger naturalists conduct parties at Mammoth, Upper Geyser Basin, Yellowstone Lake, Canyon, and in the vicinity of Roosevelt Lodge. Many lectures are given evenings, and the service is rendered by the National Park Service ranger naturalists without charge or obligation of any kind.

The National Park Service has established official information bureaus in a building near the superintendent's office at Mammoth and at the Old Faithful Museum. This is a free service for all tourists. Circulars of general information regarding Yellowstone and the other national parks and automobile maps of the Yellowstone National Park are on hand for free distribution. Pamphlets on Geysers, Geological History, Fossil Forests, and Fishes of the Yellowstone are on sale at nominal charges, and also topographical maps of this park. A small museum of the natural history of the park is maintained in connection with the information bureau at Mammoth. A branch museum devoted largely to geyser activity and its products is situated at Old Faithful between the inn and the auto camp.

THE RULES AND REGULATIONS

Exclusive jurisdiction over the park was vested in the United States by the act of Congress creating the park. The rules and regulations printed on pages 60-88, inclusive, have the full force and effect of law and should be carefully observed. Offenders charged with violation of the rules and regulations are tried at headquarters by the United States commissioner for the park, Judge John W. Meldrum.

THE TOURIST SEASON

The tourist season extends from June 20 to September 19, during which time the park utilities are operated. Between June 1 and 20 and September 19 and October 15 admittance is granted only to those tourists who come equipped to camp out along the roads or trails. September 15 is the last day on which the 4½-day motor tour may be started.

RAILROAD INFORMATION

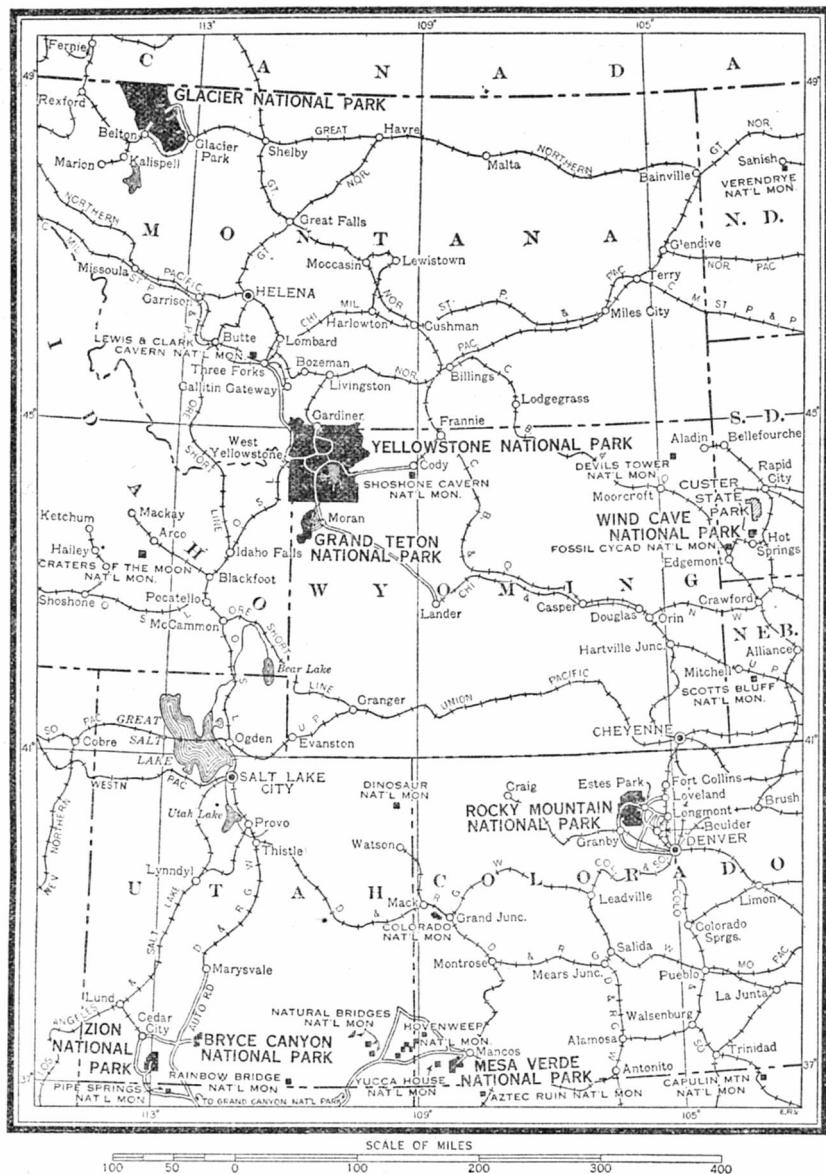
The Northern Pacific Railroad reaches the park on the north, at Gardiner, Mont., and also at Bozeman, reaching the park via the Gallatin Gateway, and the Chicago, Milwaukee, St. Paul & Pacific also serves the Gallatin Gateway entrance; the Union Pacific System reaches it on the west, at West Yellowstone, Mont.; and the Chicago, Burlington & Quincy Railroad reaches Cody, Wyo., from which the eastern entrance to the park is reached by the autostage drive of 54 miles, and the Chicago & North Western Railroad has its terminal at Lander, Wyo., 178.7 miles from the south entrance, which is reached by daily automobile service.

During the park season round-trip excursion tickets at reduced fares are sold at practically all stations in the United States and Canada, to Gardiner, West Yellowstone, Gallatin Gateway, Cody, and Lander, as destinations. From the Middle West, East, and South, such round-trip excursion tickets may be routed so that one may enter the park through any of these five gateways, and leave from the same gateway or any one of the other four.

From many sections trips may be planned to include visits to two or more of the following national parks in the Rocky Mountain region: Yellowstone, Grand Teton, Glacier, Rocky Mountain, Mesa Verde.

Passengers wishing to visit Yellowstone National Park as a side-trip in connection with journeys to other destinations will find stop-over privileges available and may make side trips to the park from Livingston, Billings, Bozeman, and Gallatin Gateway, Mont.; Pocatello, Idaho; Ogden and Salt Lake City, Utah; or Frannie, Wyo., which are stop-over points on both one-way and round-trip tickets, or from Butte, Mont., which is a stop-over point on round-trip tickets.

Coupons covering autostage transportation and accommodations at the park hotels or lodges for a "sightseeing" tour of the park of about five days' duration may be included in railroad tickets at proper additional charges, which are the same as those in effect at the park. The National Park Service, however, recommends to the traveling public that stop-overs of as long duration as practicable be planned at points within the park; that Yellowstone National Park

RAILROAD ROUTES TO YELLOWSTONE, GLACIER, GRAND TETON, ROCKY MOUNTAIN,
MESA VERDE, ZION, BRYCE CANYON, AND WIND CAVE NATIONAL PARKS

be regarded not alone as a region which may be glimpsed on a hurried trip of a few days, but also as a vacation playground of boundless opportunities for rest and recreation.

Storage charges for baggage will be waived by the interested railroads at Livingston, Gardiner, West Yellowstone, Pocatello, Idaho

Falls, Ogden, Salt Lake City, Lander, Cody, Frannie, Bozeman, Gallatin Gateway, Billings, or at Butte (by C., M., St. P. & P. R. R.), for actual length of time consumed by passengers in making the park trip. Baggage may be checked to stations via which passengers enter the park, i. e., Gardiner, West Yellowstone, Gallatin Gateway, Lander, or Cody.

DETAILED TRAVEL INFORMATION

For further information regarding railroad fares, service, etc., apply to local ticket agents of any railroad, general passenger agents of western lines, and tourist agencies.

TRANSPORTATION AND ACCOMMODATIONS

There are four hotels, five lodges, and an automobile transportation line operated in the park under contract with the Department of the Interior. Every person is at liberty to provide his own means of transportation, subject to the regulations printed on pages 64 to 68, inclusive.

For authorized rates of the public utilities see last pages of this book.

The transportation company allows each passenger to take along 25 pounds of hand baggage without extra charge, which is usually quite sufficient unless considerable extra time is to be spent in the park, when arrangements can be made for having trunks forwarded at extra expense. Arrangements can be made for caring for trunks left at entrance during tour of park, or for rechecking them for passengers who enter at one side of the park and go out by another route.

Liability of transportation company for loss of baggage in the park is limited to \$25 per piece, or parcel, but baggage may be insured for larger amounts.

Heavy, strong clothing and heavy shoes (or light shoes and rubbers) are advisable. A raincoat or other light, serviceable wrap should be taken along. Dusters or heavy coats may be rented for park trips by those desiring them.

Tourists desiring to view the wild animals feeding in Gardiner Canyon at north entrance of Yellowstone Park in winter will find comfortable accommodations in Gardiner, Mont.

General stores are located at Mammoth Hot Springs, Upper Geyser Basin, West Thumb, Lake, Fishing Bridge (the outlet of Yellowstone Lake), the Grand Canyon, and at Tower Falls.

Photo finishing plants are operated at Mammoth, Upper Geyser Basin, Fishing Bridge, and Grand Canyon by Haynes Picture Shops (Inc.).

TELEGRAMS

Telegrams may be sent from hotels or lodges to any part of the world. Park visitors should use "Yellowstone Park, Wyo.," as their telegraphic address and should inquire for messages at the telegraph office in the Mammoth Hotel, Mammoth Hot Springs. Lists of undelivered telegrams are posted daily at hotels, lodges, loop ranger stations, stores, and information offices. These lists are posted for your benefit and convenience. Inspect them daily. There may be a telegram for you.

POST OFFICE

The main post office in the park is called Yellowstone Park, Wyo., and is located at Park Headquarters—Mammoth Hot Springs. Railroad tourists are advised to have their mail addressed care of the "Yellowstone Park Hotel Co." or the "Yellowstone Park Lodge & Camps Co.," depending upon whether the trip is to be made via hotels or lodges. All mail so addressed is first received at the Mammoth Hotel and Mammoth Lodge and distributed from these points. If no particular hotel or lodge is designated in the address the mail is held at the Mammoth Hotel or Mammoth Lodge pending directions to forward. General-delivery mail must be called for at the post office at Mammoth Hot Springs, but can on request be forwarded to hotels, lodges, or by daily carrier to postal stations on the loop. Post offices near the park entrances are all located outside, and their location with regard to trip as planned should be studied before having mail forwarded to them.

In addition to the Yellowstone post office there are five postal stations in the park at Old Faithful, Lake, Fishing Bridge, Canyon, and Tower Falls. Daily service is maintained from June 20 to September 19 by motor route between the main office and the stations.

AUTOMOBILE HIGHWAY INFORMATION

The Yellowstone National Park may be reached by motorists over good connecting automobile roads from a number of the main trans-continental automobile highways. Gardiner, the northern entrance to the park, is reached from Livingston, Mont., on both the National Parks Highway and the Yellowstone Trail, which traverse Montana by approximately the same route. A map and information concerning the National Parks Highway can be obtained from the National Parks Highway Association, Spokane, Wash. Information concerning the Yellowstone Trail can be obtained from the Yellowstone Trail Association, Minneapolis, Minn.

The Cody or eastern entrance may be reached from the National Parks Highway or Yellowstone Trail by turning south from Bill-

ings, Mont., and following the main traveled highway via Laurel, Bridger, and Powell to Cody, Wyo.

West Yellowstone at the western entrance can be reached from the above main highways from Bozeman, Mont., traveling up the Gallatin Valley, and from Missoula or Butte, Mont., via the Ruby Valley or the valley of the Madison River. Inquiry should be made at the various cities concerning road conditions.

The Lincoln Highway traverses southern Wyoming, and motorists traveling this route may reach Yellowstone Park by the eastern or Cody entrance by turning north at Cheyenne and following the Yellowstone Highway via Casper, Thermopolis, and Cody, or they may reach West Yellowstone, the western entrance, by turning north at Salt Lake City and following the main traveled road through Idaho via Ogden, Utah, and Pocatello and Idaho Falls. The southern or Snake River entrance is reached from this Idaho highway by turning east at Sugar City, crossing the Teton Basin, thence crossing the Teton Mountains via the Teton Pass into the Jackson Hole country. This trip affords wonderful views of the Grand Teton National Park and Jackson Lake. The southern entrance may also be reached from the Lincoln Highway via Lander, Dubois, Togwotee Pass, and Moran, leaving the Lincoln Highway at Rawlins, Wyo. The Atlantic-Yellowstone-Pacific Highway also enters the park by way of Lander after crossing Wyoming from the Black Hills. For information concerning this highway write to the secretary, Chamber of Commerce, Sioux Falls, S. Dak.

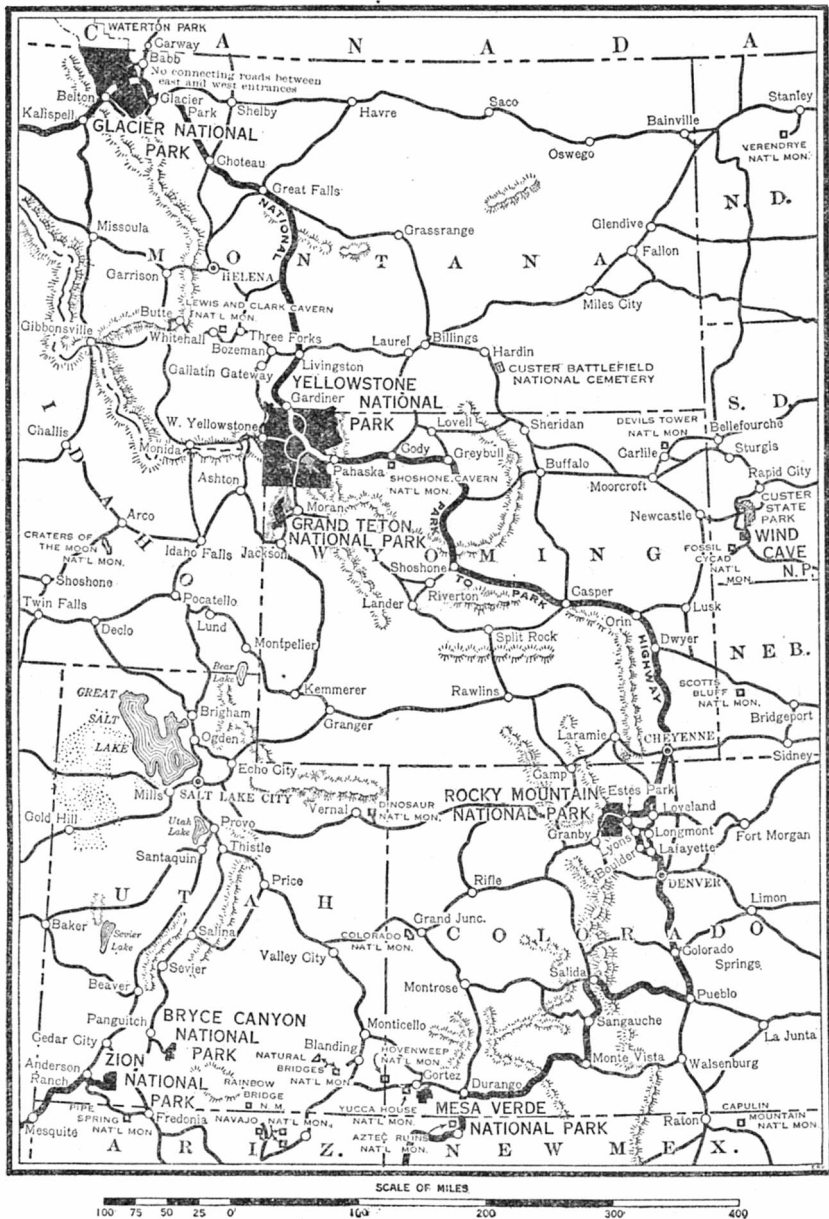
Yellowstone Park is also reached through the Cody or eastern entrance by the Custer Battlefield Hiway which traverses the Black Hills and gives direct access to the Custer State Park of South Dakota, the Wind Cave National Park, and the Devils Tower National Monument; it also crosses the Big Horn Mountains. The Custer Battlefield Hiway also leads to Glacier Park, and by taking the main highways west from Billings, Mont., travelers on this route may reach the north gateway of the Yellowstone. Address W. D. Fisher, secretary, Custer Battlefield Hiway, Mitchell, S. Dak., for information relative to this highway.

From Glacier National Park tourists may reach Yellowstone by following any one of the following routes:

The Geysers-to-Glaciery Trail via Choteau, Wolf Creek Canyon, Helena, Three Forks, Bozeman, and West Yellowstone.

The Yellowstone-Glacier Bee Line via Choteau, Great Falls, White Sulphur Springs, and Livingston.

The Flathead Valley Route via Kalispell, Missoula, Butte, Bozeman, and Livingston, or by turning off at Butte or Bozeman, routes



AUTOMOBILE ROUTES BETWEEN YELLOWSTONE, GRAND TETON, GLACIER, ROCKY MOUNTAIN, MESA VERDE, ZION, BRYCE CANYON, AND WIND CAVE NATIONAL PARKS

as above discussed, leading to the western entrance, may be followed.

Most of our national parks are linked together by the National Park-to-Park Highway, dedicated in 1920.

AUTOMOBILES IN THE PARK

Automobiles for pleasure purposes only are allowed in the park after payment of a license fee. (See p. 65.)

FREE CAMP GROUNDS

A system of free automobile camp grounds has been developed and many of these are available for use during the season. Others are being opened as fast as funds are granted for their improvement. In these camp grounds pure water is supplied and firewood is made available. Cooking grates soon will be provided.

These camp grounds accommodate hundreds of cars. For the motorist who does not care to camp in the extensive camp grounds at the main points of interest, smaller camp sites, easily recognized by signs such as "Good Camp," with pure water and wood for cooking, have been designated. Among these camping areas will be found attractive sites to meet the needs and desires of all motorists. Special attention is given to sanitation in all camp grounds.

GASOLINE, OIL, ETC.

The Yellowstone Park Transportation Co, and the general stores throughout the park are authorized to sell gasoline and oil, and the transportation company carries a stock of standard automobile parts, tires, etc. The transportation company also maintains garages and repair shops at Mammoth Hot Springs, Old Faithful, outlet of Lake Yellowstone, Grand Canyon, and Tower Falls.

THE PARK MILE-POST SYSTEM

The mile-post signs in Yellowstone National Park are diamond-shaped steel signs with raised letters, which are in every case initials of a junction point on the loop road system or a park gateway. As a measure of economy these signs have not always been placed exactly 1 mile apart. Fractions of miles have sometimes been dropped in order that two mileage signs might always be placed on one steel post. For instance, between Gardiner, the north gateway, and Mammoth Hot Springs, a speedometer indicates that the distance is slightly over 5 miles, yet the mileage signs state the distance as 5 miles.

The following is a key to the mile-post initials:

N. E. North entrance at Gardiner, Mont.

W. E. West entrance at West Yellowstone, Mont.

E. E. East entrance, 54 miles west of Cody, Wyo.

S. E. South entrance, 27 miles north of Moran, Wyo.

M. S. Mammoth Hot Springs, where the north-approach road joins the loop system.

N. J. Norris Junction, near Norris Geyser Basin, where a road leads directly across the park to the Grand Canyon of the Yellowstone.

M. J. Madison Junction, where the west-approach road joins the loop system.

O. F. Old Faithful, at the head of Upper Geyser Basin.

W. T. West Thumb of Yellowstone Lake, where the south-approach road joins the loop system.

L. J. Lake Junction, where the east or Cody approach road joins the loop system.

C. J. Canyon Junction, where a road leads directly across the park from the Grand Canyon of the Yellowstone to Norris Geyser Basin.

T. J. Tower Falls Junction, where the road to the Buffalo Ranch and Cooke City leaves the loop system.

C. C. Cooke City entrance, on a branch road which leaves the loop system at Tower Falls Junction.

Mt. W. stands for the Mount Washburn road.

There is a ranger station at each of the above entrances and near the junction points.

As the map between pages 42 and 43 clearly shows, the main road system of Yellowstone Park is roughly in the form of a figure 8. This system is called the "Grand Loop" Highway. There are 141.8 miles of improved highways in the main system.

The approach roads are the feeders to the loop system and they lead from all park gateways to junction points as above indicated. The aggregate length of the approach roads in the park is 68.3 miles.

Other roads in the park have a combined length of 92.3 miles.

Outside of the park boundaries, by special authority of Congress, the National Park Service maintains 28 miles of the east-approach road in the Shoshone National Forest and 30 miles of the south-approach road in the Teton National Forest.

YELLOWSTONE PARK TOUR—PRINCIPAL POINTS OF INTEREST

GARDINER, THE NORTHERN ENTRANCE (N. E.) TO MAMMOTH HOT SPRINGS (M. S.)²

(5 miles)

Gardiner (altitude, 5,313 feet) is the terminus of the branch line of the Northern Pacific Railroad and is immediately north of the northern boundary line of the park. Here is located the entrance arch of basaltic rock. Automobiles are required to stop at the point of entrance to register and purchase permit. Guides, horses, outfits,

² The road from West Yellowstone, Mont. (western entrance), connects with the loop road at Madison Junction (M. J.) 14.3 miles south of Norris. (See p. 29.) The route from the western entrance to the loop road is given on p. 47. The road from the southern entrance joins the loop road at West Thumb. (See p. 40.) The route from the southern entrance is given on p. 50.

The road from Cody via eastern entrance joins the loop road at Lake Junction (L. J.) about 2 miles north of Lake Hotel. (See p. 41.) The route from Cody is given on p. 47.

and supplies can be secured in Gardiner. There is no camp site near the town. The Mammoth automobile camp is located on the eastern edge of Mammoth Hot Springs, near the headquarters power plant, slightly over 4 miles from Gardiner. This is the first camping site upon entering the park from the north. The distance from Gardiner to Mammoth Hot Springs is 5 miles, and the road lies along the Gardiner River.

Electric Peak is due west of the railroad station at Gardiner and is easily recognized by its sharp point and general reddish color. It is the highest mountain in the park (11,155 feet) and one of the peaks of the Gallatin Range. It is so named by reason of magnetic disturbances noted by the first party to ascend this mountain with surveying instruments.

Sepulcher Mountain is east of Electric Peak and southwest of Gardiner. It can be easily ascended by trail from Snow Pass, $1\frac{1}{4}$ miles south of Mammoth Hot Springs, and turning to the northwest as the trail enters Swan Lake Basin, or by trail direct from Mammoth. It has an elevation of 9,500 feet, and from its summit is obtained a magnificent view to the south and east. It is named from a tomblike rock on the spur of the mountain facing Electric Peak, best viewed from near Gardiner.

Gardiner Canyon, entered 1 mile from Gardiner, is a deep, narrow gorge between walls of gray sedimentary rocks on the east and glacial drift on the west. *Eagle Nest Rock* on the east side has been a nesting place for ospreys since the park was first discovered.

Through *Boiling River*, $3\frac{1}{2}$ miles from Gardiner, a large volume of warm water from the Mammoth Hot Springs flows directly into Gardiner River. The water in this river is not boiling hot, as implied by its name, but varies in temperature, due to variations in the volume of underground steam, the highest temperature recorded being 136° F. in 1896.

From Boiling River the road ascends 600 feet in $1\frac{1}{2}$ miles to *Mammoth Hot Springs* (6,239 feet), the administrative headquarters of the park. Here are located the superintendent's office; United States Commissioner's office; Mammoth Information Office and Museum; Mammoth Hotel; Yellowstone Park, Wyo., post office; and stores where supplies, curios, etc., may be purchased. The road forks one-half mile further south at the top of the hill. Mammoth Lodge is straight ahead. The main highway to the right leads to a loop road around the hot spring formations as well as to Norris Geyser Basin. Follow the road one-half mile south of Mammoth Lodge to the buffalo corral where a small herd of buffalo and some other animals may be seen. There is a small camp site near the buffalo corral. The main attractions in the Mammoth region are the large

and beautiful hot springs and terraces. No private camping is permitted above the reservoirs nor along Glen Creek, nor in Swan Lake Basin, so the next camp site is 7.4 miles south of Mammoth Hot Springs on the road to Norris.

THE TERRACES AT MAMMOTH HOT SPRINGS

In seeing the springs and terraces the direction here given is usually followed, although the trip may be reversed if desired. The Terrace Trail starts at *Liberty Cap*, an extinct hot-spring cone now standing 40 feet above the surrounding formation. It is similar to the travertine deposits which make up the terraces and is the result of processes of erosion. At Mammoth Hot Springs the deposits from the hot water consist almost exclusively of carbonate of lime, or travertine, and are essentially different from those of the geyser basins, the latter being made up mainly of siliceous sinter, or geyserite. Under favorable conditions this carbonate of lime at Mammoth Hot Springs may deposit rapidly, as is shown by the thin film of travertine found coating all objects exposed in waters issuing directly from the springs. Objects lying for a day or two in the water frequently show a substantial deposit of this material. There are some other minerals in these waters, but it is true here, as at all other points, that the most of the coloring is due to low forms of vegetable life, principally algae, that will grow in hot water up to a temperature of 180° F.

From *Liberty Cap* the trail goes to the north and around *New Hymen Terrace* to the arch designating the Terrace Trail. After partly circling *Old Hymen Terrace*, which is only occasionally active, the trail leads to *Devil's Thumb*, similar in origin to *Liberty Cap*. The trail now climbs to *Mound Terrace* and *Minerva Terrace* with its *Grotto*.

With *Main Terrace* to the left, the trail bears to the right past *Cleopatra Terrace*, then up the stairs and along the top of a ridge which was once an active terrace similar to *Narrow Gauge Terrace*, which is next. These two formations were built up by springs which emerged along a fissure.

Cheops Mound, built up in the shape of a pyramid, is now extinct. From this place the trail parallels the auto road past *The Buttress* and *Highland Terrace* on the left to *Orange Spring Mound*, a prominent knob of travertine (hot springs deposit) which is slowly building up. From here the trail branches to the left and goes directly to the *Devil's Kitchen*. The trail branching to the right passes *Stygian Caves*, *White Elephant Back Terrace* and eventually leads to *Devil's Kitchen*. Since these features lack the interest which they once held, the trail has been shortened to go directly to the *Devil's Kitchen*, the fissure of an ancient hot spring. The tour-

ist should note that this is the only opening that is safe to descend, as at many of the other caves and openings carbonic acid gas is present to a dangerous extent. Indeed, many birds and small animals fall victims annually to the gas, especially in the *Stygian Caves* which are the most dangerous of all. The Kitchen marks the high point of the Terrace Trail. From here it leads down past *New Highland Terrace*, *Glen Springs*, *Old Angel*, and on to *Angle Terrace*. The latter is considered by many to be the most beautiful of all the terraces. The numerous dead trees found here are not petrified but are well preserved by the travertine which is being deposited about them.

From *Angel Terrace* the trail goes over the ridge to the north, thence down to *Blue Springs*. By standing near these powerful springs or at a point near *Canary Spring*, once quite active and located just south of *Blue Springs*, one can observe the wonderful colorings of the pools and terraces. The color is due to microscopic plants called algæ, which give shades varying from delicate peach, through brown to dark green. Long strands of a yellow-colored substance may be noticed in places. Most of this yellow is caused by minute forms of life known as bacteria. At many places upon the broad bench of *Jupiter Terrace*, the springs present the appearance of boiling, though most of their temperatures are far below the boiling point, which is approximately 198° F. at this altitude. The violent agitation is due to the escape of gases, largely carbonic acid gas. From *Canary Spring* the trail leads down alongside *Jupiter Terrace*, the largest hot spring terrace in the world, past Mammoth Lodge and the Swimming Pool, and down the board walk to *Liberty Cap*.

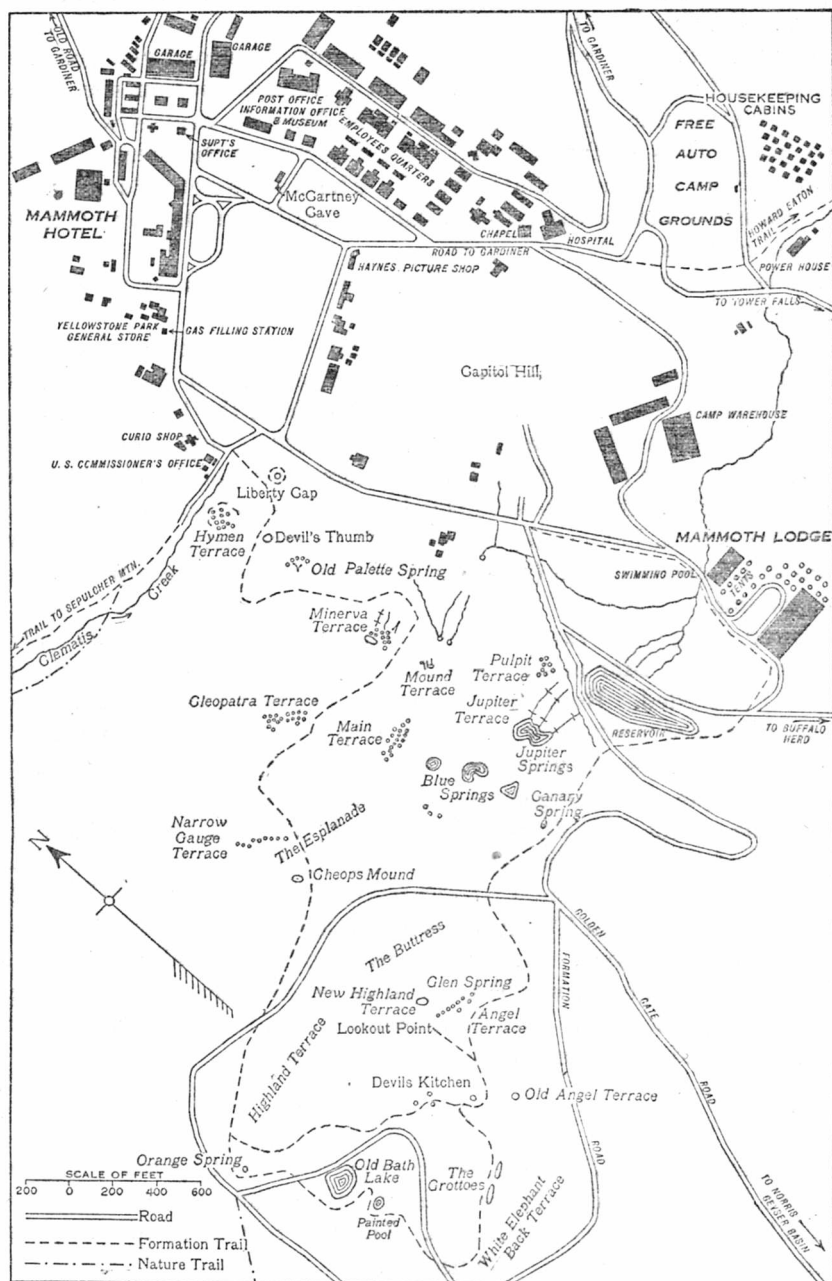
McCartney's Cave is an old extinct spring. Its wire-covered opening may be found in the lawn near the tennis court.

Free guide service is available twice daily over the Terrace Trail. A ranger naturalist takes a party over the formations, pointing out and explaining the various features to those who make the trip. Lectures are also given in the evenings by these men at the hotel, lodge, and auto camp.

SIDE TRIPS FROM MAMMOTH HOT SPRINGS

Clematis Gulch Nature Trail.—Two-mile nature-study walk beginning at *Hymen Terrace* and returning by way of hot springs, if desired. Flowers, trees, and other natural features well labeled and explained. No guide necessary.

Rangers' Nature Trail.—Five-mile round-trip horseback ride, starting through *Clematis Gulch* and returning near Administration Building. A beautiful ride, the chief attractions of which are ex-



SKETCH MAP OF MAMMOTH HOT SPRINGS

tensive beaver workings and occasional glimpses of the animals themselves. Guide advised.

Around Bunsen Peak.—Ten miles by automobile road via Hoodoos, Golden Gate, Middle Gardiner Canyon (second canyon in size in the park), Sheepeater Cliffs in canyon, walls along the canyon with view of Osprey Falls (150 feet), and returning via northeastern slope of Bunsen Peak and the Buffalo Corral. The Yellowstone Park Transportation Co. makes the trip available to rail tourists as well as to private motorists.

Same trip can be made on horseback on trails which are among the finest in the park.

Buffalo herds.—Small show herd is kept in summer in corral one-half mile south of Mammoth Lodge, on road from Bunsen Peak. Guide not needed. Formation automobiles from the hotel and lodge drive to this corral. The Lamar Valley herd is kept near Buffalo Ranch on Lamar River, 30 miles east from Mammoth, on stage road to Cooke City. More than 1,000 head of pure-blood bison under fence or herder, but usually inaccessible to motorists. Accommodations at Roosevelt Lodge (18 miles) and plenty of good camp sites and fine fishing.

Tower Falls (132 feet).—Near mouth of Tower Creek, 20 miles southeast from Mammoth. Beautiful falls and mountain scenery. Guide not needed. Roosevelt Lodge 2 miles from Tower Falls.

Northeastern portion of park.—A trip could be made to include the Petrified Tree, Tower Falls, Grasshopper Glacier, Cooke City (a picturesque old mining camp), Specimen Ridge, and Fossil Forest, and some of the best fishing in the park in Yellowstone River in vicinity of Tower Falls, Lamar River, and Slough Creek. The Yellowstone Park Lodge Co.'s Roosevelt Lodge on Lost Creek, 2 miles northwest from Tower Falls (18 miles from Mammoth), provides accommodations. Automobile road to Tower Falls and Cooke City, but other points would have to be reached by trail, requiring guide and pack train. Excellent camp sites in abundance on this trip. (See side trips out of Tower Falls, p. 51.)

MOUNTAIN CLIMBING³

Electric Peak (11,155 feet).—Ten miles northwest by trail; 8 miles may be done with saddle horse, balance on foot, and a portion of it is difficult and somewhat dangerous. Highest mountain in the park. Fine view on all sides. Guide needed.

Bunsen Peak (8,600 feet).—South 7 miles. Saddle horse can be ridden to top. Fine view. Excellent trail.

Terrace Mountain (8,100 feet).—West of Bunsen Peak.

³ There is no drinking water on top of any of these mountains.

Mount Everts (7,900 feet).—Northeast. Saddle horse can be ridden up from either end, over the top, and down the other end; total distance, about 10 miles.

Sepulcher Mountain (9,500 feet).—West 5½ miles by well-marked saddle-horse trail. Fine view. Return trip may be made via Snow Pass or Golden Gate Trail.

MAMMOTH HOT SPRINGS (M. S.) TO NORRIS JUNCTION (N. J.)

(19.8 miles)

Three miles from Mammoth Hot Springs, on the road to Norris Junction, are the *Silver Gate* and the *Hoodoos*, altitude 7,100 feet. The massive blocks of travertine, piled up in a most confused manner and covering several acres in the neighborhood of Silver Gate, were evidently thrown down from higher levels, probably as the result of some violent earthquake shock. One-half mile farther is *Golden Gate* (7,256 feet), where the concrete viaduct should be noted as part of the difficult engineering *Kingman Pass* presented. *Bunsen Peak* is on the left, *Terrace Mountain* on the right. At the head of Golden Gate Canyon is *Rustic Falls*, 70 feet high.

Immediately after passing Rustic Falls the road leads into *Swan Lake Flat*. The abrupt passing from the frowning walls of Golden Gate Canyon to this open, smiling mountain valley is typical of the many unexpected changes that form the scenery along the park roads.

On the right are the many peaks of the *Gallatin Range*. *Electric Peak* (altitude 11,155 feet), at the extreme north; then the long, flat summit of *Quadrant Mountain* (10,200), then *Bannock Peak* (10,400), *Antler Peak* (10,200), *The Dome* (9,900), *Trilobite Point* (9,900), and *Mount Holmes* (10,300) on the extreme south. Mount Holmes, especially, is visible from many points along the road. *Glen Creek*, which flows through Swan Lake Flat, contains many red speckled brook trout. Camping is not allowed along Glen Creek or in Swan Lake Flat because drinking water for headquarters and the hotel and lodges at Mammoth Hot Springs is taken from this region.

Swan Lake (7,256 feet) is near the 5-mile post. After passing the 7-mile post, camping is permitted at points designated by signs. All the streams along the road have trout in them.

Gardiner River (7,289 feet) is crossed at the 7-mile post. Here the road enters *Willow Park* (7,289 feet), comprising the valley of *Obsidian Creek*, which is frequently crossed by the dams of beaver and dotted by their interesting houses.

At *Apollinaris Spring* (10 miles from Mammoth Hot Springs), altitude 7,337 feet, are two stone stairways leading to the spring for

those tourists who wish to stop and try this water. On the opposite side of the road is a good camping place, the next camp site being 4 miles farther, on the right side of the road.

Obsidian Cliff (12 miles from Mammoth Hot Springs), altitude 7,382 feet, is a cliff of black volcanic glass. It is the most prominent exposure of this rock in the park. Obsidian also occurs in the red, white, and brown forms. It was much used by Indians for arrow-heads and other stone implements, this being one of the few points in the park frequented by them before its discovery by white men. On the right at this point is *Beaver Lake*, the ancient dam here being very long and heavy.

The crater of the Semi-Centennial Geyser, the big geyser that erupted in 1922, is on the right before reaching Roaring Mountain. This geyser may be quiescent, as its eruptions are very irregular.

Roaring Mountain (15½ miles from Mammoth Hot Springs), altitude 7,575 feet, is especially to be noted as a late development of thermal action. In 1902 this mountain side was covered by a heavy growth of pine timber, and the only evidence of subterranean heat was a small opening among the pines, 30 feet square, on the extreme top of the mountain, in which a little steam could be seen rising from the ground. In the year mentioned activity became greater, the formation gradually spreading to its present size.

Twin Lakes (16 miles from Mammoth Hot Springs) are two beautiful lakes very close together, connected by a small brook, yet they are of different color—one blue, the other green.

Bijah Spring (17 miles from Mammoth Hot Springs) is alongside the road.

The *Frying Pan* (18 miles from Mammoth Hot Springs), altitude 7,520 feet, is a peculiar hot spring, stewing away in a manner that earned its name.

The Norris Ranger Station is at the crossing of the Gibbon River, where there is fair fishing for eastern brook trout. Back of the Ranger Station there is an auto camp ground.

Just beyond the Ranger Station is Norris Junction (N. J.).

NORRIS JUNCTION (N. J.) TO CANYON JUNCTION (C. J.)

(10.8 miles)

The road leading to the left at Norris Junction is the direct route to the Grand Canyon of the Yellowstone, but is used generally by the traveling public in coming from the Grand Canyon rather than in going to it from other points. This is due to the traffic rules of the park which guide travel around the loop-road system in a counterclockwise direction. The Norris-Canyon road, however, is open for traffic in both directions at all times of the day or night.

NORRIS JUNCTION (N. J.) TO MADISON JUNCTION (M. J.)

(14.3 miles)

The road leading to the right at Norris Junction is the regular loop road to the Lower and Upper Geyser Basins as well as to Norris Geyser Basin, which is one-half mile south of the Junction.

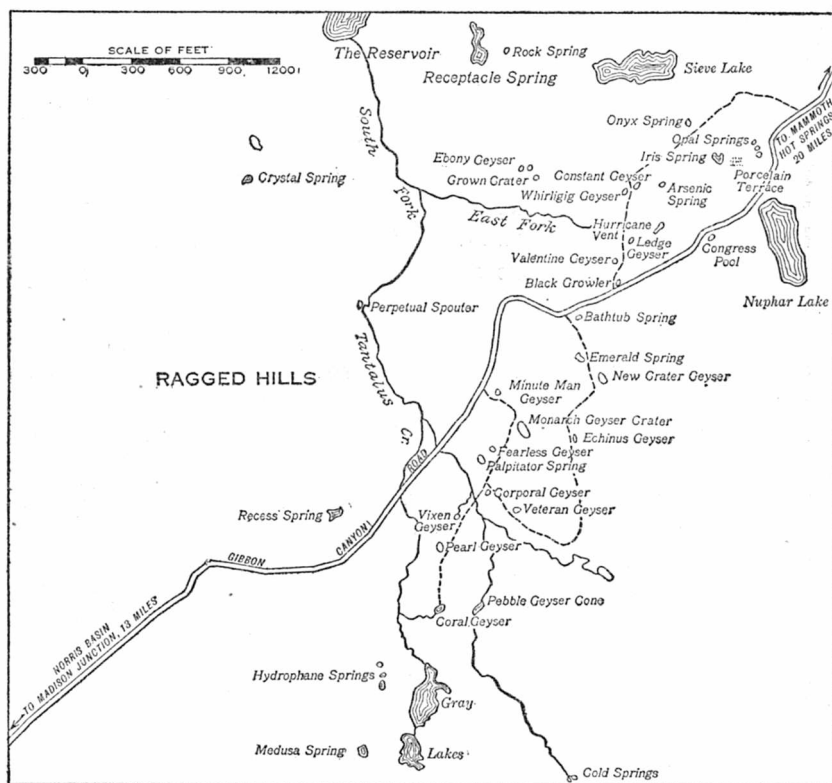
NORRIS GEYSER BASIN⁴

(Altitude, 7,550 feet)

The path for viewing this formation starts immediately beyond the parking area and follows the board walk in a southwest direction to the road near *Black Growler Steam Vent*. The floor of Norris Geyser Basin consists of siliceous sinter or geyserite, and is unsafe, so the walk should be followed. It is frequently covered with brilliantly tinted algaous growths which flourish luxuriantly in the warm waters. *Constant Geyser*, *Whirligig Geyser*, *Valentine Geyser*, in a deep pit to the right, and the *Black Growler* are passed in the order named. The new opening of *Black Growler* first made its appearance in August, 1912, and has steadily increased in power ever since; it is about 100 feet from the old opening and farther down the hill. This serves to illustrate the main characteristic of this basin, which is its unstableness. The phenomena of this basin are constantly changing in size, locality, and character of activity. The old opening of *Black Growler* is near the road and is now active. *Bathtub Spring*, on the left, is sometimes an active geyser, playing at intervals of a few minutes; at other times it boils violently, but does not throw out any water. From the Bathtub a path leads south past *Emerald Spring* and some small, recent paint pots to *New Crater Geyser*. This geyser is a comparatively recent outbreak of a well-known old vent, but unknown to those who witnessed the first display of the so-called New Crater. The texture and color of the most recent deposits are due mainly to salts of iron derived from minerals in the fresh rock exposed by the opening of the New Crater. *Congress Pool*, on the left of the road, near the north end of the basin, has been a quiet pool, a boiling pool, a steam vent, and a mud geyser, changes occurring so rapidly that one month it may have quite different characteristics from those of the preceding or following month. *Hurricane Vent* is a mud vent across the road from Congress Pool. The road from Black Growler leads down the hill to *Minute Man Geyser*. Beyond Minute Man, near the base of the hill, is *Monarch Geyser Crater*. Unfortunately this geyser has ceased to erupt. During 1913 it played every hour, and further varied its

⁴ For list of prominent geysers and springs in the park, see p. 57.

custom by throwing black mud instead of clear water, as it had previously done. Some seasons it has been known to play only once or twice, and there is no record of its having played at all for the past 10 years. The path continues south to *Fearless*, *Veteran*, *Corporal*, *Vixen*, and *Pearl Geysers*, all small and with uncertain periods of eruption.



SKETCH MAP OF NORRIS GEYSER BASIN

ELK PARK, GIBBON MEADOWS, GIBBON CANYON

From Norris Geyser Basin the road leads southwest to Madison Junction (14.3 miles). It passes through *Elk Park*, where there is a camp site, then runs along Gibbon River through a short canyon, interesting from the peculiar rock formations. Through *Gibbon Meadows*, 4 miles from Norris, altitude, 7,335 feet, are good camp sites; the next camp site is below Gibbon Falls, 5 miles farther on.

At the south end of Gibbon Meadows a trail leads to the left to *Artist Paint Pots*, located at the foot of *Paint Pot Hill*, 50 feet above the meadow level and a quarter of a mile from the loop road.

Just after crossing Gibbon River the first time (about 5 miles from Norris Junction) is an old trail that leads back up the river, then up the mountain for about three-fourths of a mile to the *Monument Geyser Basin*, which is very interesting on account of the peculiar forms of the geyser cones and because it is the highest of all the park geyser formations. These cones are more of the type of *Lone Star* and *Lion Geyser* and often resemble statues without arms or legs or "idols in a temple garden."

The road now leads through the main *Gibbon Canyon* for 5 miles, first on one bank of the rapidly flowing stream, then on the other. The canyon is characterized by fine views and many curiosities, but the tourist has time and inclination now only for the more prominent. *The Chocolate Pots* are small hot springs along and even out in the river, which have built themselves small cones covered with brownish algæ and iron, giving them the appearance of being chocolate coated. *Beryl Spring* (5 miles from Norris, altitude 7,312 feet, 197.6° F.), on the right, close to the road, is a violently agitated spring, one of the hottest in Yellowstone Park. *Iron Spring* (8 miles from Norris) is a cold mineral spring that, like Apollinaris Spring, is usually sampled by tourists. *Gibbon Falls*, 80 feet high (8½ miles from Norris), is the interesting waterfall of Gibbon River on the left as the road descends. One-half mile farther is a good camp site on the left.

The loop road continues down the Gibbon River, passing an interesting hot lake, Terrace Spring, about 13 miles from Norris Junction, and near the point where the Gibbon and Firehole Rivers meet the road from West Yellowstone, Mont., the western entrance (W. E.) enters the main highway system.

This is Madison Junction (M. J.),⁵ altitude 6,805 feet.

MADISON JUNCTION (M. J.) TO OLD FAITHFUL (O. F.)

(15.9 miles)

From the junction of the west entrance road with the loop highway the latter crosses the Gibbon River in a small meadow, turning thence up the Firehole River. The mountain on the right is National Park Mountain, where the discoverers of the park, before their camp fire in 1870, formulated plans for securing the establishment of this great playground. At its foot the Gibbon and Firehole Rivers join, forming the Madison, one of the three great branches of the Missouri River. The Gallatin River, another branch, heads

⁵ The route from West Yellowstone, Mont., the western entrance (W. E.), is described on p. 47.

in the northwestern corner of the park. The confluence of the Madison, Gallatin, and Jefferson, the third branch, is at Three Forks, Mont. These streams were all named by Lewis and Clark while on their famous expedition in the early years of the last century. The road leads up the *Firehole Canyon*. On the opposite side of the river is a cliff upon which appears what is thought to be the cross section of an ancient geyser or hot spring.

At 2.5 miles from Madison Junction the loop road passes the *Cascades of the Firehole*. Above this point there is good fishing in the Firehole for eastern brook, Loch Leven, brown, native, and rainbow trout, and also whitefish. There are several good camp sites in the timber at the left of the road. Camping is not permitted between the road and the river.

FOUNTAIN RANGER STATION is situated on the left, 5.9 miles from Madison Junction. One-half mile from the ranger station Nez Perce Creek is crossed. This is the last camp site till Excelsior Geyser, $4\frac{1}{2}$ miles farther, is reached.

Opposite the ranger station, a road known as the Fountain Freight Road branches off to the right to rejoin the loop system 5 miles to the south. Two miles from the ranger station on this secondary road, a fork to the right leads to *Fairy Creek* at the base of *Twin Buttes*, 2 miles distant. From its terminus a well-beaten path, three-quarters of a mile long, winds through the woods to the huge crater of the *New Geyser* which burst forth with tremendous fury in the summer of 1928. This geyser plays to a height of 100 to 125 feet for periods of four or five hours, with intervals of rest varying from 12 to 15 hours. The amount of water thrown out during an eruption is between 500,000 and 2,000,000 gallons (2,000 to 8,000 tons), enough to furnish a city of 25,000 inhabitants with its water supply. The geyser is of the fountain type, its eruptions closely resembling, on a smaller scale, those of the extinct giant, Excelsior. From Fountain Ranger Station and other points along the main loop highway one may discern whether the new geyser is playing by the intermittent puffs of white steam which roll upward immediately to the left of Twin Buttes during eruptions. Upon leaving the new geyser and returning to the Fountain Freight Road, one may proceed to Old Faithful by turning to the right. The freight road rejoins the main highway just above Midway Geyser Basin and immediately below the 11-mile post (MJ 11, OF 5). Turn left at the junction to visit *Excelsior Geyser Crater*, *Grand Prismatic Spring*, and *Turquoise Pool*.

LOWER GEYSER BASIN⁶

Lower or *Fountain Geyser Basin* (altitude 7,317 feet) is the largest of the park geyser basins, but its curiosities are too scattered to admit of a more thorough examination than can be given to certain prominent ones along the road.

A mile and a half beyond the Nez Perce Creek crossing, the road ascends a low hill to *Fountain Paint Pot*, a striking example of what has been given the name "paint pots." They occur everywhere throughout the park, but the more prominent are here and at Thumb of Yellowstone Lake.

From the point of unloading of busses at *Fountain Paint Pot* a side path leads along the ridge through the pines to the *Fountain Geyser*, which is surrounded by a great many small geysers. The *Fountain Geyser* was in former years very prominent, more on account of the vast quantities of water erupted than of its height. Since 1911 the eruptions have been erratic and seldom witnessed.

Clepsydra, *Bellefontaine*, and *Jet* are all small geysers near the *Fountain*; usually one or more of them is in eruption.

South of *Fountain Paint Pot* the loop road proceeds in a straight line in a southwest direction. A branch road leads to the left at *Silex Spring* to *Firehole Lake* and other curiosities. It is usually taken by the tourist unless his time is limited. The first interesting feature is *Hot Lake*, at the western end of which is a constantly playing geyser known as *Steady Geyser*. But the most remarkable feature here is the second lake at the extreme western end of the road, known as *Firehole Lake*. If the tourist leaves his conveyance and follows the path a hundred yards or so to the extreme eastern point of the lake, he will see the so-called flames. But they are to be seen from only two points, and should the wind be causing a disturbance of the water he may not see them at all. There is a circular opening in the bottom of the lake of a deep-seated spring not unlike other vents of thermal waters. Through this vent, which usually stands full of clear, transparent water, numerous bubbles of mingled air and superheated steam rise gradually. Before reaching the surface they unite to form one large mass that in its upward passage strikingly resembles a blue flame. This continues till the bubble disappears in the water, only to be followed by a repetition of the phenomenon. The phenomena are far better seen at *Firehole Lake* than elsewhere, but under favorable conditions they may be seen at other localities. On the return the road⁷ formerly branched to the left, leading to the *Great Fountain Geyser*, which is now reached by

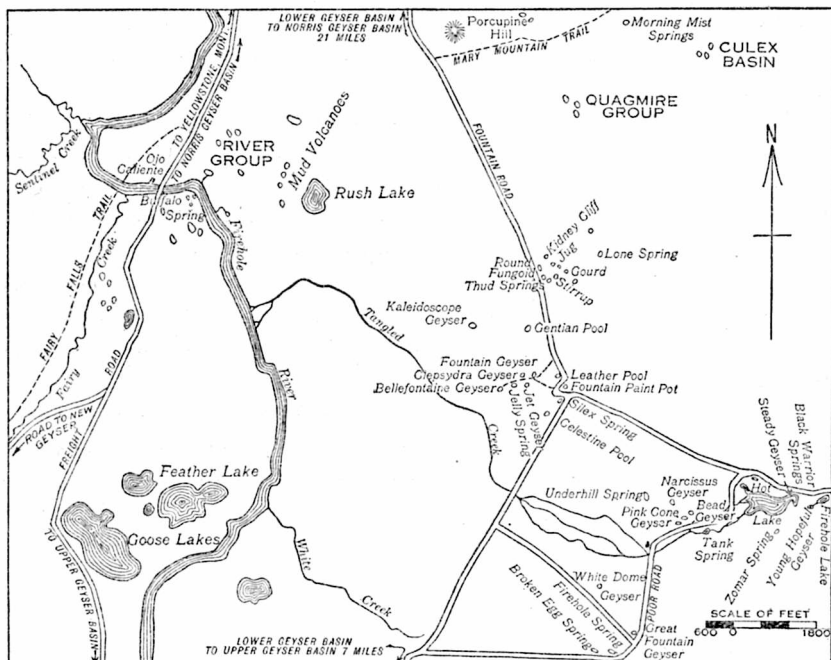
⁶ For list of prominent geysers and springs in the park, see p. 57.

⁷ This road is in disrepair. Motorists are advised not to use this road during the 1929 season, but to return to the loop road and take the next left-hand turn to Great Fountain.

returning to the loop road and taking the next left-hand turn. This geyser, which plays every 8 to 12 hours, is rightfully considered one of the features of the park. Even during the quiescent period the beauty of its pool and the delicate tracery of its formation are worthy of close examination.

To the west of *Great Fountain* a footpath a half mile in length runs past *Surprise Pool*, *Diamond*, *Five Sisters*, and *Buffalo Springs*. All are worth visiting if one has the time.

From *Great Fountain Geyser* two roads lead back to join the loop road. The one running northwest passes the imposing cone of *White*



SKETCH MAP OF LOWER GEYSER BASIN

Dome Geyser. This cone is large and interesting, but the geyser itself is too small to detain the tourist long.

The other road leads west, and about 200 feet from *Great Fountain* is a violently boiling spring close to and at the right of the road. This is *Firehole Spring*, with phenomena similar to Firehole Lake, but it is often necessary to walk entirely around the spring to find a favorable point of view.

One hundred feet farther, at the right, is *Broken Egg Spring*. For the next mile or two the road approaches *Twin Buttes*, a prominent landmark in the southern end of Lower Geyser Basin and west of Firehole River, at whose base the great new geyser burst forth in July, 1928.

MIDWAY GEYSER BASIN

Midway Geyser Basin (4.7 miles from Fountain Ranger Station) is, properly speaking, a part of the Lower Geyser Basin, but owing to the size of its features it has often been given a separate designation. There are numerous camp sites along the river above and below *Excelsior Geyser Crater*. The next camp site is at Biscuit Basin, 3 miles farther on.

The greatest attraction here is *Excelsior Geyser Crater*, which once was the largest geyser in the park, but which has not been active since 1890. The beautiful tints and colors of *Grand Prismatic Spring*, *Turquoise Pool*, and *Indigo Pool* make them worthy companions. The fountain Freight Road rejoins the main loop road just above the *Midway Geyser Basin*.

Biscuit Basin (8.1 miles from Fountain Ranger Station) is in reality the lower end of the Upper Geyser Basin. There is a good camp site here, the next being near Riverside Geyser, 1½ miles farther. Fishing here, and in fact all the way from Nez Perce Creek, is good, but the constant fishing makes the fish wary.

The roads forks opposite Biscuit Basin; the road on the right should be taken if Biscuit Basin is to be visited. If no stop is to be made at Biscuit Basin, either road may be taken, as they unite near *Mirror Pool*.

Biscuit Basin is on the west side of Firehole River and is reached by a footbridge. *Sapphire Pool*, one minute quiet and two or three minutes later violently boiling, is the attractive feature here. The peculiar formation at its south end gives the name of "Biscuit" to this basin. A short distance west are *Jewel Geyser* and *Silver Globe Spring*.

Mystic Falls is on Little Firehole River some distance to the west and rather difficult to find.

A half mile after leaving Biscuit Basin, at the right and below the road, is *Artemisia Geyser*, which has a beautiful crater and throws a tremendous volume of water in action.

UPPER GEYSER BASIN^s

A mile and a half south of Biscuit Basin at the base of a small hill the road branches again. The road on the right should be taken, as on it is *Morning Glory Pool*, whose beautiful shape and color make it an object of universal admiration. At this point we enter the far-famed Upper Geyser Basin, where the largest and finest geysers of the world are gathered together in a small space only a mile north and south by a half mile or less wide.

^s For list of prominent geysers and springs in the park, see p. 57.

The *Fan Geyser* is on the right between the road and the river. *Mortar Geyser* is a few feet farther up the river. At their best these geysers are very interesting, but unfortunately have been seldom in eruption for the last few seasons.

At the left, just above the bridge on the extreme edge of the river, is the *Riverside Geyser*, one of the most prominent of the basin. Its period is very regular, ranging from seven to eight hours. Water overflows from the lower of its two craters for a period of two hours immediately preceding an eruption. A camp site is located on the knoll above the *Riverside Geyser*. The next camp site is southwest of *Castle Geyser*, nearly 1 mile by road from this point. Special camp grounds for private parties traveling in automobiles are provided about 200 yards south of *Old Faithful Geyser* and a little over 1 mile from the *Riverside Geyser* camp.

At the left and close to the road is the *Grotto Geyser*, differing from most in that the empty crater is more interesting than the eruption. At this point it is usual to follow the path instead of keeping to the road.

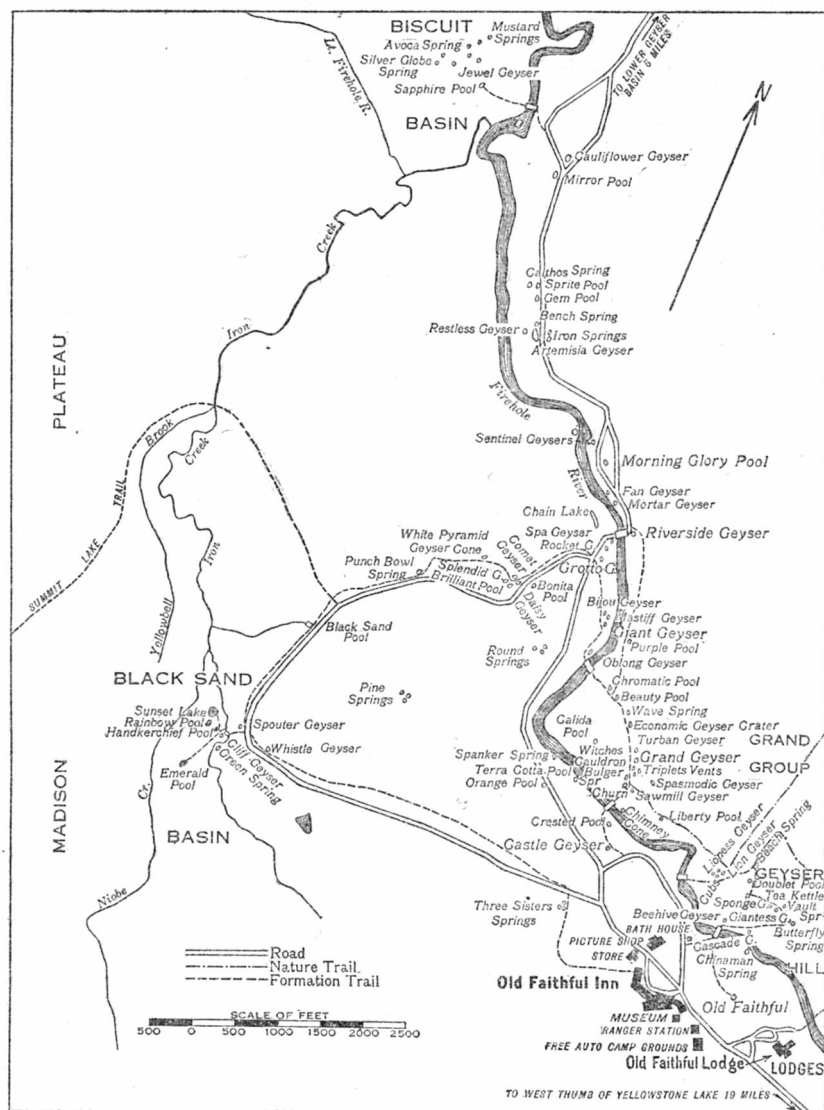
From here to *Old Faithful Geyser* there are two roads and a path. The road to the left is the direct road, but it does not pass any unusual features except *Castle Geyser*. (See description under the trip by path, below.) The road to the right (the *Black Sand Basin Road*) is slightly longer and passes many interesting phenomena.

The road to the right turns up the hill, and immediately beyond it comes close to a group of geysers and springs. Of these, the *Daisy* is a powerful little geyser that plays frequently and regularly. During the last few years it has been increasing in frequency and power. Next to it on the west is the hooded opening of *Comet Geyser*, while over near the edge of the formation is the crater of the extinct *Splendid Geyser*. These three geysers, as well as all springs in this neighborhood, are connected. When one of the geysers of this group plays it appears to affect them all.

A quarter of a mile beyond, the road passes a crested spring on a mound on the right. This is *Punch Bowl Spring*. Then *Black Sand Pool* and *Spouter Geyser* are passed. Near the latter is a footbridge to the west bank of *Iron Creek*. On crossing the bridge, *Cliff Geyser* is seen close to the bank of the stream on the left. Immediately before one are the attractive *Sunset Lake*, *Handkerchief Pool*, and *Rainbow Pool*, and to the south lies *Emerald Pool*, one of the most beautiful in Upper Basin. As the road leads on across a more or less level stretch it passes *Three Sisters Springs* and shortly afterwards joins the main road a couple of hundred yards or so north of *Old Faithful Inn*.

OLD FAITHFUL (O. F.) is the general designation of the head of Upper Geyser Basin. It is 55 miles from Gardiner (N. E.), 50

miles from Mammoth Hot Springs (M. S.), 29.6 miles from West Yellowstone, Mont., the western entrance (W. E.), and 15.9 miles from Madison Junction (M. J.); altitude 7,366 feet.



SKETCH MAP OF UPPER GEYSER BASIN

Here is located *Old Faithful Inn* and *Old Faithful Lodge*. A general store, bathhouse, and picture shop are located near these establishments. Here also, just south of *Old Faithful Geyser*, is a large free public automobile camp ground.

OLD FAITHFUL RANGER STATION AND COMMUNITY CENTER, located between Old Faithful Inn and Old Faithful Lodge, and adjoining the free public automobile camp, is open to visitors. An attractive little museum devoted to subjects of local interest, more particularly to geyser activity and its products, is maintained between the inn and ranger station. An information bureau in connection with it is for the service of the public. Several instructive lectures are delivered daily. The subjects and locations are announced in various conspicuous places.

TRAILS AND SIDE TRIPS FROM OLD FAITHFUL

The principal motive of your visit to the Yellowstone has undoubtedly been its geysers. You are now in the midst of geyserland, where the greatest variety and largest geysers in the world are to be seen. For your advantage and convenience, two excellent trails have been laid out. They are well marked with white arrows and pass by all of the principal features of the basin. Everything is plainly labeled, and numerous explanatory signs have been prepared and posted for your benefit and instruction. *Geyser Hill Trail* begins across the main road from the Old Faithful Ranger Station (at the entrance to Old Faithful Auto Camp), on the right side of Old Faithful Cone. It is three-quarters of a mile long and ends at the *Lion Group*. The second, or *Black Sand Basin Trail*, is a 4-mile circuit, measured from the museum. Its real beginning is marked by a sign at the junction of the main highway and the Black Sand Basin road, immediately to the right of the gas-filling station. It parallels the entire length of the Black Sand Basin road, in the reverse direction from that given above and crosses the main highway near *Grotto Geyser* and *Rocket Geyser*. It terminates at *Castle Geyser*. For the convenience of auto tourists who do not wish to walk the entire distance, the trail may be picked up at *Grotto* and *Giant Geysers*, which are near the main highway. The two trails may be combined by pursuing an easterly course from *Castle Geyser* to the river bank, crossing the footbridge to the *Lion Group*, and following the *Geyser Hill Trail* in the reverse direction from that given below.

Points of interest along the Geyser Hill Trail.—The trail nominally begins at *Old Faithful Geyser*, the tourist's friend. It is not the highest or most powerful geyser in the park, it does not have the most attractive crater, but it does possess something of each of these qualities, and in addition, it never disappoints, playing with great frequency and regularity. When the first exploring party emerged from the trees to the east of the basin, Old Faithful burst forth in all of the splendor of full eruption before their astonished

eyes. It has never failed to play majestically and regularly since that day. During the tourist season, the first eruption after each night-fall is illuminated by an arc light placed on top of the inn. It is then that the grace of its folds and the purity of its whiteness are best appreciated.

The trail leads from *Old Faithful Geyser* to *Chinaman Spring* around which an attractive little yarn has been spun. Across the river from this point, the *Sputterer* chafes in its cavity above the water's edge, while highly colored algæ are seen in the overflow from *Cascade Geyser*. These are microscopic plants which grow in the course of hot water, the color varying with the temperature of the stream. The *Firehole River* is crossed behind the Swimming Pool. Water for this pool (a private concession) is piped from *Solitary Geyser* in the forest above *Geyser Hill*. This was formerly a hot spring, but upon being tapped its water level dropped about 3 feet and it became a geyser, playing every five minutes to heights of 15 feet or more. *Beehive Geyser* has the most symmetrical cone of any of the geysers in the park and is rated as the second highest. It was considered extinct for some time, but in 1928 it played more frequently than ever, averaging several eruptions per month. The main claim of *Cascade Geyser* for attention is the natural bridge of geyserite over its crater. In some respects, *Giantess* is the most spectacular of geysers. Its eruptions, 100 to 200 feet high, occur only about once a year, but last from 12 to 36 hours. They are accompanied by miniature earthquakes and loud subterranean roarings and rumblings. All of the water from its tremendous steep-walled crater, 20 by 30 feet, is thrown high into the air. The crater is completely drained by an eruption, as well as the craters of *Vault Geyser* and *Teakettle Spring*, companionate hot-water bodies nearby. *Sponge Geyser* has a cone of interesting texture built by the drop-lets of water ejected by the vigorous boiling. It is stained with iron compounds, and has a miniature eruption every two or three minutes. From this geyser the trail leads past *Doublet Pool* to *Beach Spring*, one of the most delicate on the hill. This is notable for the delicate blue of the water, the splendid tints of the algæ growing on the beach, the tiny reef around the inner pool, and the coral-like growth of the sinter around the outer edge. From *Beach Spring*, through the rustic gateway on the edge of the forest, the *Nature Trail* leads past *Solitary Geyser* to the summit of *Observation Point*, from which a splendid view of the basin and Old Faithful can be obtained. All of the leading features on this trail are labeled and explained. The *Geyser Hill Trail* turns back from *Beach Spring*, past *Ear Spring*, to the *Lion Group*, which attractively surmounts a small hill of its own building. The four members of the *Lion* family are *Lion*, *Lioness*, *Big Cub*, and *Little Cub*.

Points of interest along the Black Sand Basin Trail.—As stated above, this trail closely parallels the roadways until *Giant Geyser* is reached. This is the highest existing geyser in the park. Its interval of eruptions is uncertain and variable. The companions of the *Giant*, *Bijou*, and *Mastiff* are two small geysers in almost constant eruption. *Oblong Geyser*, near the foot bridge, is beautiful to behold, either while quiet or in action. The *Inkwell Spring* spouts both brown and black ink, in this case iron compounds. *Beauty Spring* is of the morning-glory type, larger but not so symmetrical. *Economic Geyser* was formerly one of the most attractive geysers in the park, playing every few minutes to heights of 20 to 50 feet. All of the water ejected during its eruptions drained back into the crater—it was very economical of its water supply. It is now extinct. *Grand Geyser* is one of the most beautiful in the world and, next to *Old Faithful Geyser*, plays more frequently than any of the larger geysers. Its eruptions consist of a series, and many of the shafts of hot water reach a height of 200 feet. It is an interesting combination of both cone and fountain type of geysers. *Turban Geyser*, so called because of the turban-shaped masses of sinter in its crater, is more or less connected with *Grand Geyser*, as are also the *Triplets* nearby. The trail leads past *Spasmodic* and *Sawmill Geysers*, *Chimney Cone* on the left of the footbridge, beautiful *Crested Pool*, to *Castle Geyser* and *Tortoise Shell Spring*. *Castle Geyser* has the most artistic cone in the basin, both in general outline and detail. In 1928, it erupted daily at irregular intervals. So far as is known, it is unconnected with any other spring or geyser.

Ranger naturalists conduct walking parties over the *Black Sand Basin Trail* each morning and over *Geyser Hill* and *Nature Trails* in the afternoon. This is a free service sponsored by the National Park Service. Parties leave from the porch of the lodge, the ranger station, and the inn lobby for these trips.

Nature Trail.—This trail is in the shape of a double circle and may be entered from Old Faithful Lodge bridge, near Lion Geyser, or near Grand Geyser. Total distance, 4 miles. Nature features well labeled. No guide needed. Follow the arrows.

Grand Teton National Park and Jackson Hole.—Sixty-nine miles (27 outside of park), Lewis Lake and Falls. Grand Teton National Park bordering Jackson Hole; Grand Teton, 13,747 feet. Fishing for native and lake trout. Automobile road. Resorts operated by B. D. Sheffield and the Jackson Lake Lodge (Inc.). Private cars can not return directly to Old Faithful from West Thumb, as this is a one-way road for eastbound traffic only.

OLD FAITHFUL (O. F.) TO WEST THUMB OF YELLOWSTONE LAKE (W. T.)

(19.1 miles)

As the road leaves Upper Geyser Basin it begins its long climb to the *Continental Divide*, first along Firehole River and then up Spring Creek Canyon. Two miles from Upper Basin there is a platform on the right to enable one to view the pretty *Kepler Cascades*; altitude 7,583 feet.

At the junction of Firehole River and Spring Creek (3½ miles from Upper Basin) the road leaves the Firehole, but there is a branch road to the right running three-quarters of a mile to *Lone Star Geyser*, which plays for 10 minutes at intervals of 3 hours, height 40 to 60 feet. On this branch road are good camp sites, the next being 6½ miles farther up the main road at *De Lacy Creek*.

The first crossing of the *Continental Divide*, 8½ miles from Old Faithful, at an altitude of 8,262 feet, is through *Craig Pass* alongside of a little lily-covered lake, *Isa Lake*, whose waters in spring-time hesitate whether to flow out one end into Pacific waters or out the other into Atlantic waters and usually compromise by going in both directions.

Then the narrow road turns down *Corlescrew Hill* to the little valley of *De Lacy Creek*, hemmed in by pine-covered heights on all sides. Here is the last good camp site before reaching the Thumb, 9 miles from De Lacy Creek.

Soon after leaving De Lacy Creek the road comes out on *Shoshone Point*, from which *Shoshone Lake* is in plain sight and the *Teton Mountains* can be seen on a clear day. There is fine fishing in Shoshone Lake, which can be reached by a trail following down De Lacy Creek for a distance of about 3 miles from the main road.

The road descends a little from Shoshone Point and then climbs to the *Continental Divide* again at an altitude of 8,365 feet (15½ miles from Old Faithful).

From this point it pitches rapidly down through dense timber until within 1 mile of the Thumb, when a glimpse of *Yellowstone Lake* (altitude 7,735 feet) is had. A little later *Duck Lake* is passed far below the road on the left.

The road forks as it leads out toward the lake shore. The fork to the right leads to the boat landing, Lewis Lake, the South Entrance, and Jackson Lake. The fork to the left is the loop road.

THE WEST THUMB (W. T.)

THE THUMB RANGER STATION is on the left at the forks of the road; Hamilton's store is immediately north. The automobile camp grounds, housekeeping tents, and cafeteria are on the right. Altitude 7,784 feet.

A path leads to the lake by the *Thumb Paint Pots*. They are not so large as the ones in the Lower Geyser Basin, but are more brilliantly colored. The *Fishing Cone* is situated on the margin of Yellowstone Lake (altitude 7,735 feet), a quarter of a mile north of the boat landing. The *Lake Shore Geyser*, which frequently plays to a height of about 30 feet, is on the lake shore, 200 feet north of the boat landing. This locality is more or less dangerous, as the crust is thin, and it is sometimes very slippery around the Paint Pots.

The Thumb is 19.1 miles from Old Faithful (O. F.), 20.4 miles from Lake Junction (L. J.), 23 miles from the South Entrance (S. E.), and 50 miles from Moran, Wyo., on Jackson Lake;⁹ altitude 7,784 feet.

WEST THUMB (W. T.) TO LAKE JUNCTION (L. J.)

(20.4 miles)

The road from West Thumb to Lake Junction is a lake-shore drive all of the way. There are camp sites 2 miles from Thumb, 5 miles from Thumb, on *Pumice Point*, and at *Bridge Bay*. As the road passes around *Thumb Bay* fine views of *Mount Sheridan*, a portion of the rim of the old Sheridan Volcano, are had to the south. Also, magnificent views of Thumb Bay, the strait between this bay and the main lake, *Stevenson Island*, and the *Absaroka Mountains* on the east are visible from many points.

On the old road, which branches off to the left at *Arnica Creek*, at the top of the hill the *Knotted Woods* are passed on the left, and at a point 11.5 miles from Thumb the *Natural Bridge* is viewed, 200 yards to the left of the road. A side trip to the last-named feature may best be made by taking the regular road to Bridge Bay and then, turning left up a long lane, going back over the old road about a mile. The new United States Fish Hatchery is passed just before reaching *Lake Hotel* (18.4 miles from Thumb; altitude 7,761 feet).

LAKE HOTEL AND LAKE LODGE

Near the *Lake Hotel* (19.1 miles from Thumb) is the boat landing and a general store selling supplies and curios. *Lake Lodge* is a short distance east of the hotel. There is good fishing all along Yellowstone Lake, but especially at the outlet of the lake, $1\frac{1}{4}$ miles north.

⁹ The route from Moran, Wyo., is described on p. 50.

Boats and tackle may be rented at the boat landing. Along the road to Cody, Wyo., just beyond Fishing Bridge, is an auto camp, where there are housekeeping cabins, cafeteria, garage, store, and picture shop.

LAKE RANGER STATION is one-quarter mile beyond the hotel. Both lectures and free guide service are furnished daily by the Ranger Naturalist Service at Lake and Fishing Bridge auto camp.

SIDE TRIPS FROM LAKE HOTEL AND LODGE

Jackson Hole and Lake.—Sixty-nine miles (27 outside of park), Lewis Lake and Falls. Teton Mountains in Jackson Hole; Grand Teton, 13,747 feet. Fishing for native and lake trout. Automobile road.

Heart Lake and Geyser Basin.—Twenty-eight miles south by road and trail. Guide needed. Fishing for lake and native trout.

Southeast Arm of Yellowstone Lake.—This trip is made by boat.

LAKE JUNCTION (L. J.)¹⁰

Nearly 2 miles from Lake Hotel and Lodge the road to East Boundary and Cody branches off to the right. It is 26.6 miles from this point to the East Entrance (E. E.), 80.6 miles to Cody, the East gateway city, 14.3 miles to Canyon Junction (C. J.), and 20.4 miles from West Thumb (W. T.); altitude, 7,791 feet.

LAKE JUNCTION (L. J.) TO CANYON JUNCTION (C. J.)

(14.3 miles)

Six miles from Lake Junction are the *Mud Volcano* and *Dragons Mouth Spring*, located 100 yards to the left of the road, and around the next corner, down a steep bank between the road and the river, some fine examples of paint pots may be seen. There is good fishing all along the river. The road soon enters and crosses *Hayden Valley*, where elk are frequently seen, and then enters a narrow valley by the side of the Yellowstone River.

Thirteen and a half miles from Lake Junction, and right at the head of the rapids, a branch road leads to and across *Chittenden Bridge* to the *Canyon Lodge*. This lodge is most attractively located among the trees on the rim of the canyon and the roar of Upper Falls is ever present. The road extends to *Artist Point*. There is a path along the rim that can be followed on foot, and a great many magnificent views of the Upper Falls, the Lower Falls, and the Grand Canyon may be seen to advantage.

¹⁰ The route from Cody, Wyo., is described on p. 47.

The loop road leads to the left. In about a half-mile the parapet at *Upper Falls*, 109 feet high, is reached; steps lead down to the rim of the falls. A few hundred feet farther, on the left, are the special camp site and free public automobile grounds for private parties traveling in automobiles, and opposite, on the right, is the CANYON RANGER STATION. Free guide and lecture service is available.

A short distance west of the ranger station is a general store, where supplies of all kinds can be purchased, and immediately beyond there is a fork in the road, known as Canyon Junction (C. J.)

CANYON JUNCTION (C. J.)

Canyon Junction is 14.3 miles from *Lake Junction*, 41.3 miles from the *East Entrance*, 20.4 miles from *Tower Falls Junction*, 10.8 miles from *Norris Junction*, 10 miles from *Summit of Mount Washburn*, 1 mile from *Canyon Hotel*, and 2 miles from *Canyon Lodge*. The road turning to the left is the short cut to *Norris Junction*, 10.8 miles distant. The main loop road continues north past *Canyon Hotel* junction and to the left at *Grand View* junction.

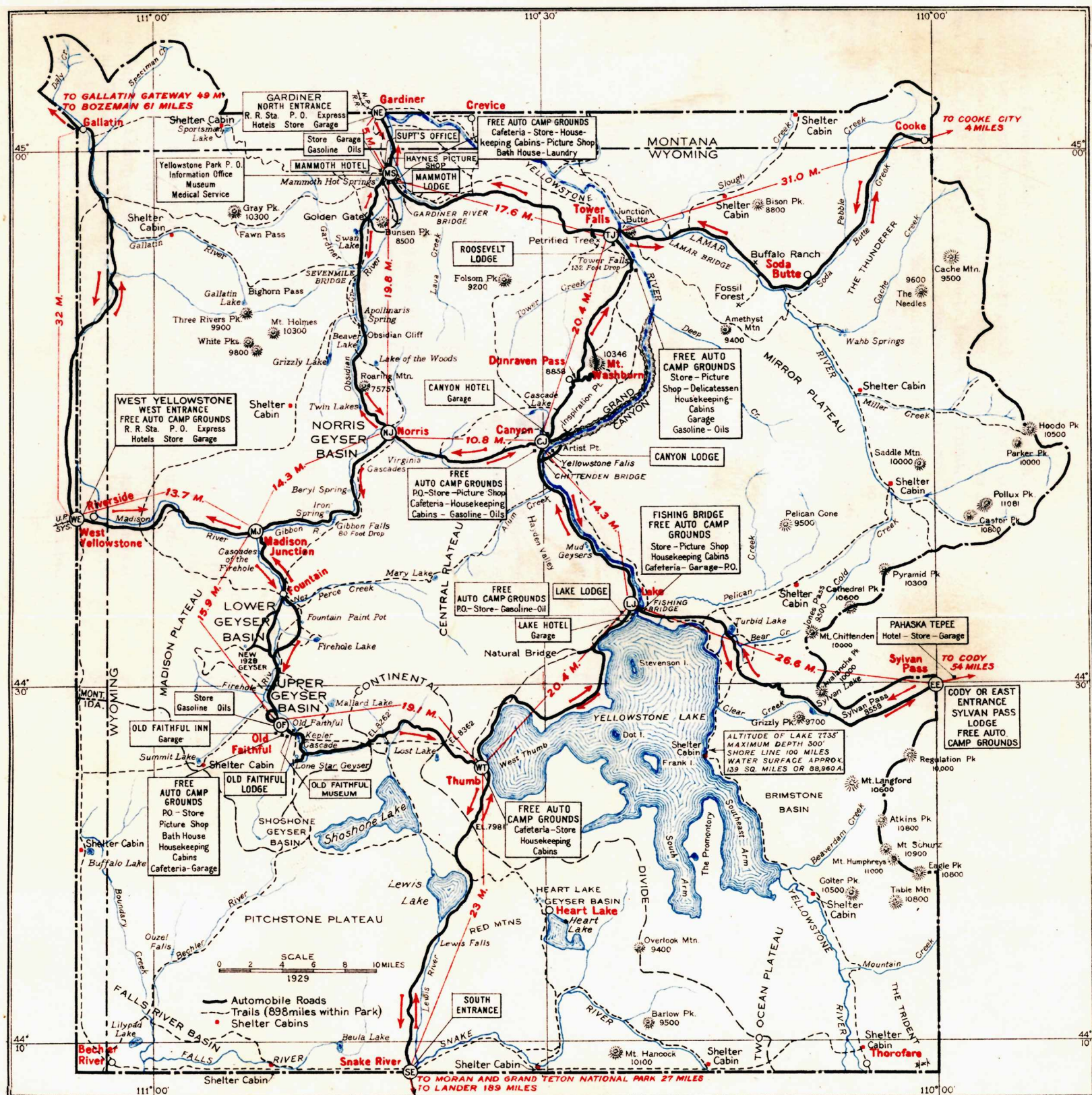
CANYON JUNCTION (C. J.) TO NORRIS JUNCTION (N. J.)

(10.8 miles)

On the crossroad from Canyon Junction to Norris there is a steep hill for the first mile (altitude 8,121 feet, 2 miles from Canyon Junction), and then the road winds through timber-covered, rolling country to *Virginia Meadows*, where there is a camp site, and the fishing is good. This is the only camp site between Canyon Junction and Norris. At the lower end of the meadow Gibbon River is crossed and the road continues down its northern bank past the *Virginia Cascades* (65 feet) to Norris Junction, 10.8 miles from Canyon Junction.

GRAND CANYON

If the canyon is to be viewed from the northern rim, the road to the right is taken. A high steel bridge is crossed over Cascade Creek. At the east end of the bridge a path leads to the right down the edge of the gulch to *Crystal Falls*, a lovely little falls that is often overlooked in the presence of the larger attractions. This path can be followed to the top of the Lower Falls of the Yellowstone, 308 feet high. Another path from the end of the bridge leads to the left; this is a short cut to the Canyon Hotel. The loop road winds up the hill, affording here and there glimpses of the Grand Canyon. At the top of the hill are stairs to the *Lower Falls*. A few hundred feet farther the road forks. A side road turns to the left



MAP OF YELLOWSTONE NATIONAL PARK

Norris Denotes Ranger Station Direction of Travel

Distances given are between main points by road

NOTE THE MILE-POST SIGNS

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and leads to Canyon Hotel (altitude 7,800 feet). The main loop road to Dunraven Pass, Mount Washburn, and Tower Falls continues to the right to Grand View junction, where it forks to the left. The road to the right at this point leads to Inspiration Point.

On the main loop road about 1 mile from Canyon Junction is *Lookout Point*, reached by walking a hundred feet out to the right of the road. Down the gulch to the right of Lookout Point is a rather steep trail leading to *Red Rock*, a fine point from which to view the Lower Falls. *Grand View* and *Castle Ruins* are other good points from which to view the canyon.

But better yet is *Inspiration Point*, at the end of this road. This point, Artist Point, Lookout Point, and the edge of the Lower Falls are the best places from which to view the wonders of the canyon. The view from each is different from the others, and each merits a careful inspection from the tourist. This canyon is some 20 miles in length, but it is only the first 3 miles below the Lower Falls that carry these wonderful colors. This is due to the fact that in times gone by fumes rising from hot springs deep in the ground have moved through the rhyolite rock of this 3-mile section until the rock has been decomposed and changed. The remainder of the canyon has not been acted on by the hot-spring fumes, and hence retains its dark-gray walls.

A short distance from Inspiration Point, on the east side of and close to the road, is the *Glacier Boulder*, not by any means the only glacier boulder in the park, but the most striking example of this force. This boulder must have been brought a distance of at least 20 miles by an ancient glacier and left here for the wonder of the tourist.

There are several interesting side trips for sight-seeing, fishing, etc., to be made from Grand Canyon on foot or on horseback, via good trails. Most of these can be taken safely without a guide, if careful inquiry is made beforehand.

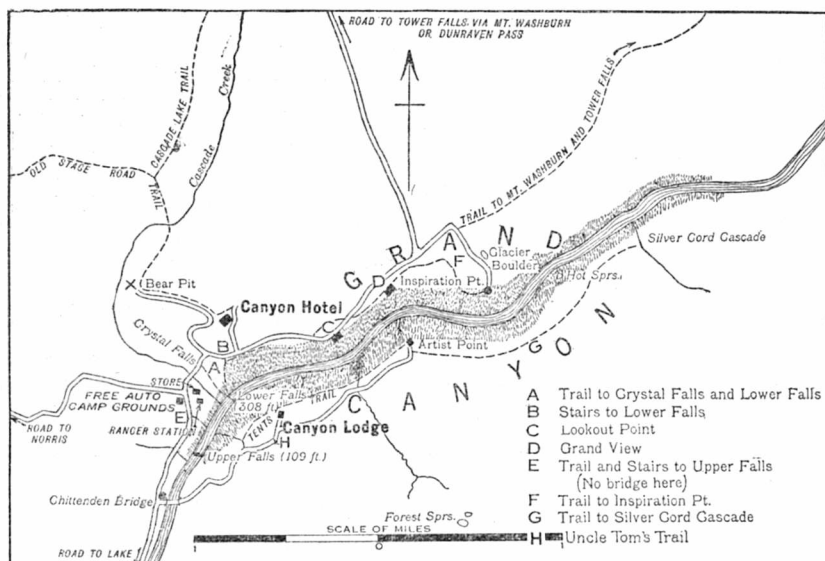
CANYON JUNCTION (C. J.) TO TOWER FALLS JUNCTION (T. J.)

(19.4 miles)

In honor of Gen. Hiram M. Chittenden, the engineer officer to whom the excellence of the present park roads is largely due, the road from Canyon Junction to the top of Mount Washburn is known as the "Chittenden Road." It is usually not free from snow until about July 1. Camp sites are scattered all along this road, the best being at *Dunraven Pass*, 7 miles from Canyon Junction, at an altitude of 8,859 feet. These are not very good, owing to lack of water, the first water to be counted on being at Tower Creek, 17 miles

from Canyon Junction by the loop road through Dunraven Pass and 20 miles by road over Mount Washburn.

At *Dunraven Pass* the road forks; the road to the left is the loop road to Tower Falls, shorter and avoiding the heavy grades of Mount Washburn, that to the right leading to the top of *Mount Washburn* (automobiles can be driven to the extreme top and down the northern side). It is well to get up Mount Washburn as early in the day as possible, on account of the heavy winds that spring up later. The climb is long, but the views constantly unfurling as the tourist rises are unrivaled, and the time taken in the slow climb is put to good advantage by the sight-seer. The view from the top of Mount Washburn, altitude 10,346 feet, is equaled only by that from Electric Peak



SKETCH MAP OF GRAND CANYON

and Mount Sheridan, both of which are as yet too inaccessible to be climbed readily.

Beyond Mount Washburn the road enters an open country free from heavy timber, and so affords numerous opportunities to view the surrounding region. The grade is a steadily descending one for 7 miles to Tower Creek, altitude 6,400 feet. A free public auto camp is located in front of the store (altitude, 6,597 feet) at *Tower Falls*. Also, housekeeping cabins are available. Owing to the congested condition of the road below, it is better to leave cars here, then go down the trail to Tower Falls, 132 feet high. An excellent view of the falls is obtained from the crest of the hill. The fence-like layers in the walls of the canyon across the Yellowstone should be noted. Fishing in the river at this point is good.

The road after leaving Tower Creek passes first the towers, or minarets, that give this section its name; then passes close to a wonderful cliff of columnar basalt that overhangs the road. This is the famous *Overhanging Cliff*. Shortly after the *Needle* is reached. This is a long, slender spire that starts at the river's edge and mounts up nearly 300 feet.

Shortly after, the bottom of the long descent from Mount Washburn is reached, 2 miles from Tower Falls. Here a branch road leads to the left to *Roosevelt Lodge*. There is a very beautiful trail back of *Roosevelt Lodge*, up through *Lost Creek Canyon* and past *Lost Creek Falls*. Northwest of *Roosevelt Lodge* and several hundred yards distant is TOWER FALLS RANGER STATION; altitude 6,264 feet.

TOWER FALLS JUNCTION (T. J.)

The ranger station is also regarded as Tower Falls Junction (T. J.), because just before this point is reached a road leaves the loop system and leads into the region of the Lamar River, thence up the valleys of the Lamar and Soda Butte Creek to the mining community of Cooke City, beyond the boundaries of the park.

SIDE TRIPS FROM TOWER FALLS JUNCTION AND ROOSEVELT LODGE

Numerous streams and lakes teeming with fish are easily accessible from the ranger station and *Roosevelt Lodge*. Many of these waters may be reached by automobile, but others lie at considerable distances from the roads and can only be reached with saddle-horse outfit. Saddle horses and full equipment, including supplies and fishing tackle, may be procured at *Roosevelt Lodge*.

From the standpoint of scenery and natural phenomena and prevalence of wild life this section of the park is second to no other in interest. Furthermore, its opportunities for rest and recreation are unsurpassed.

The following trips are worthy of special mention: *Tower Falls* (132 feet), 2 miles distant on the loop road between the Junction and Mount Washburn. Beautiful falls and mountain scenery. Guide not necessary.

Petrified Tree, 1 mile west on loop road, thence southeast three-fourths of a mile on side road. The standing trunks of one large and many small petrified trees are to be found on the slopes. A notable series of abandoned beaver dams is seen in the creek below the tree.

"*Yanceys*."—This is a beautiful place where a famous old character, "Uncle" John Yancey, lived for many years. Fishing is

usually good 2 miles below. Herds of antelope summer on the grassy hills northeast of Yanceys; large beaver dams are seen a half mile west; and conies live in the rock slides beside the old buildings.

Buffalo Ranch.—On the Lamar River, near the mouth of Rose Creek, 11 miles from the ranger station and *Roosevelt Lodge*, is the big buffalo ranch, where more than 1,000 head of bison are cared for. In summer the herd is ranging in the hills and is difficult to see. A small show herd is maintained in the buffalo corral at Mammoth.

Specimen Ridge, 7 miles distant by trail. East of Yellowstone River and south of Lamar River through a country covered with fossil trees and fossil-leaf imprints. Guide is necessary.

Soda Butte, 17 miles distant, is a mound that was formerly a huge hot-spring crater. It is chiefly interesting because there are no other objects, even remotely similar, anywhere else in this section of the park. SODA BUTTE RANGER STATION is located here.

Soda Butte Canyon is a gorge of unusual beauty which offers splendid opportunities for the study of glacial erosion. The road to the northeast corner of the park traverses its entire length. COOKE CITY RANGER STATION is located on the northeast boundary.

Cooke City.—This is a picturesque old mining camp, and lies just beyond the park boundary at the northeast corner of the reservation. Above it rise *Pilot Knob* (altitude 11,977 feet) and *Index Peak* (altitude 11,740 feet), two extraordinary mountains that were used in early days as important landmarks by travelers moving back and forth in a wholly unsettled region.

Grasshopper Glacier.—A few miles beyond Cooke City is a glacier in which millions of grasshoppers are embedded. These insects were caught in the snows of the remote past, and have for centuries formed a part of a body of ice of huge proportions. A trip to this feature necessitates travel on horseback.

TOWER FALLS JUNCTION (T. J.) TO MAMMOTH HOT SPRINGS (M. S.)

(17.6 miles)

The first camp site beyond the ranger station is 1 mile west, where a side road bears off to the left to the *Petrified Tree*, three-fourths of a mile from the loop road. The next good camp site is at Blacktail Deer Creek, 10 miles farther.

After leaving Petrified Tree Junction the road climbs a hill 3 miles long, then traverses *Crescent Gulch* to the *Blacktail Deer Divide*, from which point there is a long, steady descent to Gardiner River, within 2 miles of Mammoth Hot Springs.

At *Blacktail Deer Creek* is a good camp site, and there is good fishing for native and rainbow trout. A trail to the right, just beyond the bridge, leads to Yellowstone River, 3 miles away, where there is more good fishing. Twelve and one-half miles from Tower Falls Junction there is a very fine abandoned beaver dam and house on the left of the road.

Just beyond, the road crosses *Lava Creek*, and a few hundred yards below is *Undine Falls* (60 feet). The East Gardiner or Lava Creek Canyon, which starts here, is interesting because of the columnar basalt formation in its walls. It is 5 miles from Mammoth Hot Springs, and there is a good camp site. Good fishing for native and eastern brook trout.

At *Gardiner River*, 16 miles from the Tower Falls Junction, the road crosses on the highest and longest steel bridge in the park, 2 miles from Mammoth Hot Springs; altitude 5,960 feet. Mammoth auto camp and housekeeping cabins are located just before reaching the junction with the North Entrance Road.

WEST YELLOWSTONE, MONT., THE WESTERN ENTRANCE (W. E.) TO MADISON JUNCTION (M. J.)

(13.7 miles)

West Yellowstone, Mont. (altitude 6,688 feet), is the terminus of the Oregon Short Line Railroad, and is the western entrance to the park. Guides, outfits, and supplies for park trips can be secured. This is the post office for tourists entering and leaving via the western entrance.

The road lies up *Madison River* to Madison Junction at the confluence of the *Gibbon* and *Firehole Rivers* (13.7 miles), where the loop road is reached.¹¹ At West Yellowstone the road passes through a level country, and as the river valley is ascended low hills appear on either side, which increase in height until they culminate in *Mount Haynes* on the right and *Purple Mountain* on the left. Camp sites occur 3 miles, 7½ miles, 12 miles, and 13 miles from West Yellowstone. There is fine fishing at all points for trout.

CODY, WYO., VIA EASTERN ENTRANCE (E. E.) TO LAKE JUNCTION (L. J.)

(80.6 miles)

Cody, Wyo., is the terminus of a branch line of the Chicago, Burlington & Quincy Railroad. It is located 54 miles from the eastern entrance of the park. The Yellowstone Park Transportation Co.

¹¹ See p. 29.

operates automobile stages from Cody daily. Guides, outfits, and supplies may be secured here. For the first 40 miles most of the available space is occupied by farms and ranches. After this point is gained there are frequent camp sites to the park boundary.

Cody was founded by the famous scout, the late Col. William F. Cody, "Buffalo Bill," many years ago, and is a typical western plains town. It is situated on a bench or shelf above the Shoshone River and below the table-land that stretches away toward the east. It is therefore invisible to the traveler on the roads from Thermopolis, Basin, Powell, and other Wyoming towns to the eastward until he comes very near to the limits of the town.

Leaving the Burlington Station for the trip to the park, the road leads into the Shoshone Gorge, crosses the Shoshone River, and ascends to the bench upon which the town is located. Leaving Cody, the road passes close to the magnificent statue of "Buffalo Bill," executed by the famous sculptress, Mrs. Harry Payne Whitney, and dedicated July 4, 1924. It then keeps a general southeasterly course along the river, passes a sulphur mine and an extensive hot spring orifice, and finally the canyon walls close about the new highway as it turns out of sight of the plains.

The wonders of the trip to the park begin with the entrance to the *Shoshone Canyon*, the stupendous gorge through which the Shoshone River takes its course. On the right lies *Rattlesnake Mountain* and on the left *Cedar Mountain*. The two constituted a single mountain until the river cut a deep, narrow gash through its center of solid rock. The walls of the canyon are nearly perpendicular, and yet along the face of Rattlesnake Mountain the Bureau of Reclamation of the Department of the Interior blasted a splendid road 8 miles long from the solid rock. In many places the road passes through tunnels in the granite walls. This is the road that is traveled through the gorge and out to the park. The Government found it necessary to construct this road through the apparently inaccessible canyon in order to provide the means of transporting materials to construct the great dam of the Shoshone reclamation project. At the upper end of the canyon the *Shoshone Dam* itself is reached. This dam is 328 feet from the lowest foundation to the top of the parapet, being 48 feet higher than the Flatiron Building in New York City. At its base it is 108 feet thick up and down stream and only 80 feet long. On top it is 200 feet long and 10 feet thick. The cost of its construction was \$1,356,585, but the value of the crops raised by the use of the stored water since 1908 is approximately \$14,600,000.

Leaving the dam the road follows the shore of the beautiful *Shoshone Lake*, which was formed by closing, with a great wedge of concrete, the narrow gash in the rock walls of the canyon. Scien-

tists state that this lake occupies the basin of an ancient body of water which existed thousands of years ago. Where this lake overflowed the water gradually wore a passageway through the solid granite mountain, and in the course of numberless centuries formed the Shoshone gorge.

At the upper end of the lake the road turns into the valley of the *North Fork of the Shoshone River* and skirts the boundaries of several large ranches, many of which are favorite resorts of the big-game hunter. As the road continues westward beyond the ranch lands, a very mountainous region appears. The *Shoshone National Forest* is entered at a point where the valley suddenly narrows to a deep canyon. High mountains on each side of the river stand like huge sentinels at the gates of the forest.

Proceeding into the canyon, many wonderful natural features appear on every side. The mountains are composed principally of red volcanic rock and have been carved into a million fantastic shapes by wind and water erosion. Signs attract the attention of visitors to the peculiarly shaped formations, the most interesting of which are *Holy City*, *Chimney Rock*, *Clock Tower*, *Hole in the Wall*, *Dead Indian*, *Elephant's Head*, *Duck*, *Maimed Hand*, and *Pinnacle Point*. As the park boundary is approached the mountains become more rugged and timber growth becomes heavier. The principal species of trees are lodgepole pine, Douglas fir, and Engelmann spruce.

Just after crossing the North Fork of the Shoshone River and leaving it to the right, as the road proceeds up *Middle Creek*, *Pahaska Tepee* is reached. This is an old hunting lodge, built and owned for many years by Buffalo Bill, and is very beautifully situated in the forest. Supplies of various kinds may be obtained at this point.

Two and four-tenths miles farther up Middle Creek the park boundary at the *Eastern Entrance (E. E.)* is reached.

At the *eastern entrance to the park* are located the SYLVAN PASS RANGER STATION and SYLVAN PASS LODGE, and 1 mile farther is a good camp site. On both Shoshone River and Middle Creek there is good fishing for native trout. The next camp site is at *Sylvan Lake*, 10 miles farther. At *Sylvan Pass*, altitude 8,559 feet, 8 miles from eastern boundary, the road leaves Middle Creek and passes between high frowning cliffs on either side.

Two beautiful small lakes are passed, the first being *Lake Eleanor* and the second *Sylvan Lake*, a dainty sheet of water, set in the midst of heavy timber, surrounded by high and rugged peaks. Sylvan Lake is 10 miles from the eastern boundary and its altitude is 8,413 feet. At this point is a camp site; the next one is at *Cub Creek*, 4 miles farther.

Turbid Lake, altitude 7,957 feet, 21 miles from the eastern boundary, is remarkable for the innumerable hot springs and steam openings in its bottom and along its shores. These springs keep the water more or less agitated and muddy, but there is good water in *Bear Creek*, flowing into Turbid Lake from the southeast. The next camp site is at *Indian Pond*, or *Squaw Lake*, near the north shore of the Yellowstone Lake, 3 miles farther. The junction point of this road and the loop road is nearly 2 miles north of the Lake Hotel and 27 miles from the eastern boundary of the park. This is LAKE JUNCTION (L. J.).¹²

MORAN, WYO., VIA SOUTHERN ENTRANCE (S. E.) TO LOOP ROAD AT WEST THUMB (W. T.)

(50 miles)

Moran Wyo., is located on Jackson Lake, 27 miles south of the southern boundary of Yellowstone Park. B. D. Sheffield and the Jackson Lake Lodge (Inc.) operate resorts on the north side of Snake River just below the great reclamation dam. The location is opposite the magnificent elevation of the Teton Mountains, 9 miles westward across the lake.

This mountain group is an imposing outcropping of granite rising abruptly from the plains to the east and west. It begins in low elevations just south of the southern boundary of Yellowstone National Park and rises rapidly to its culmination, 30 miles south, in the Grand Teton; south of the Grand Teton it subsides. Only few peaks of the many are officially named. These are, from north-south, Survey Peak, altitude 9,200 feet; Forellen Peak, altitude 9,700 feet; Mount Moran, altitude 12,100 feet; and the Grand Teton, altitude 13,747 feet. The level of Jackson Lake from which these mountains rise is at 6,733 feet of altitude. The Grand Teton, therefore, rises abruptly more than 7,000 feet above the water.

These mountains wear their winter cloaks of snow far into the summer. They carry, among their peaks and spires, many small glaciers. They constitute, therefor, a supreme scenic climax to the far different volcanic grandeur of the Yellowstone.

The country east of Jackson Lake is a fine rolling plateau, thickly grown with grass and wild flowers in parklike glades among forest patches. This is the home of an elk herd of very large size, which is separate from the elk herd that makes the northern section of the park its principal home. Several large State game preserves protect wild life in this region, but outside of these preserves in certain areas hunting is permitted in appropriate season and surplus elk are killed in reasonable numbers under State law.

¹² See p. 41.

From Jackson Lake reclaimed waters fertilize a large area west of the Tetons in Idaho. The dam at Moran is 86 feet high and 650 feet long. Its distribution system includes 713 miles of canals. The power and transmission lines in Idaho have a length of 69 miles.

The SNAKE RIVER RANGER STATION, altitude 6,882 feet is at the southern entrance of the Park. A good camp site is near and there is good fishing for whitefish, native, Loch Leven, and lake trout in Lewis and Snake Rivers. Next camp site is at Crawfish Creek.

Moose Falls is on *Crawfish Creek*, $1\frac{1}{2}$ miles north of southern boundary and 100 yards east of road. The road leads over the hills west of and parallel with the *Lewis River* to the upper *Lewis Falls* (80 feet high), altitude 7,806 feet, 10.4 miles from south boundary. While climbing the hill through the section once devastated by forest fire, the tourist should look back at the Teton Mountains to the south. A good camp site is just north of Lewis Falls on Aster Creek, up which the road turns. The next camp site is at the north end of *Lewis Lake*, 4 miles farther on.

Lewis Lake, altitude 7,787 feet, is a heart-shaped lake, 3 miles north and south by 2 miles wide, lying to the west of *Mount Sheridan*. It has an extensive hot springs basin on its northwestern shore. Lewis River, which rises in *Shoshone Lake* farther north, flows through this lake on its way to Snake River. There is a fine camp site and good fishing in Lewis Lake and its inlet for lake trout. The next camp sites after leaving Lewis Lake are 2 and 7 miles north.

From Lewis Lake the road climbs gradually up the *Continental Divide*, altitude 7,981 feet, and then drops down to Yellowstone Lake, a mile and a half south of the Thumb, 23 miles from the southern boundary of the park.¹³

TOWER FALLS JUNCTION (T. J.) TO BUFFALO RANCH, SODA BUTTE, AND COOKE CITY, MONT.

Two hundred yards east of Tower Falls Ranger Station, 18 miles from Mammoth Hot Springs, the road to the mining town of Cooke City, Mont., branches off from the loop road northeast across the flat. Good camp sites are frequent, and there is good fishing for native trout to Soda Butte. The *Yellowstone River* is crossed on the longest single-span steel bridge in the park. *Junction Butte* is on the left. The road runs across open, grassy flats, strewn with granite boulders dropped by the glacier, to the bridge across Lamar River, 5 miles from Tower Falls Junction. Two miles beyond the bridge the Lamar Canyon is entered. Here the smooth, round glacier boulders lie piled in immense masses.

¹³ See p. 40.

Leaving the canyon the road passes up the north side of the upper Lamar Valley, past the Buffalo Ranch (11 miles from Tower Falls Junction), where a herd of over 1,000 head of buffalo (bison) is maintained in the winter months by the Government. Five miles beyond, the road leaves the Lamar Valley and turns northeast up the Soda Butte Valley. As one ascends this valley he is treated to some of the finest mountain scenery in the park. Soda Butte, an old hot spring or geyser cone so named by the old trappers, lies alongside the road on the right, 17 miles from Tower Falls Junction. From Soda Butte the road follows up *Soda Butte Creek* through the heart of magnificent mountain scenery. Good camp sites continue frequently for 5 miles beyond the butte, the next good camp site being 10 miles beyond the butte. The COOKE CITY RANGER STATION is located on the northeast boundary (31 miles from Tower Falls Junction and 49 miles from Mammoth Hot Springs) in the midst of a heavy forest. *Cooke City* is 4 miles farther.

BOZEMAN, MONT., VIA GALLATIN GATEWAY, MONT., TO WESTERN ENTRANCE (W. E.)

(98 miles)

Bozeman, Mont., is located on the main line of the Northern Pacific Railway, 98 miles from the western entrance of the park. From Bozeman the road passes across the valley of the *Gallatin River*, one of the richest farming sections of the State. Fourteen miles from Bozeman is the town of *Gallatin Gateway*, the terminus of a branch line of the Chicago, Milwaukee, St. Paul & Pacific Railway. The Yellowstone Park Transportation Co. operates automobile stages daily from these towns. Supplies, guides, and outfits may be secured in either place.

Leaving Gallatin Gateway, the road continues up the valley of the *Gallatin River* and at 78 miles from the western entrance enters the *Gallatin Mountains* on the south of the valley, by way of the beautiful *Gallatin Canyon*, and then enters the *Gallatin National Forest*.

For the next 35 miles the road climbs up through the mountains in this canyon, which is remarkable for its wooded slopes, high cliffs, and beautiful streams. In this section it crosses the *Gallatin River*, the *West Fork*, and *Taylor's Fork* of the Gallatin River, and finally, at the crossing of the river, it leaves the canyon; from here on the topography changes to gentle rolling slopes and broad valleys.

At 31 miles from the western entrance the road enters the northwest corner of *Yellowstone National Park*, and for another 8 miles follows the course of the *Gallatin River*, which rises among the high peaks to the left. Then the low divide between this stream and the

Madison River is crossed and followed down *Graying Creek*, a tributary of the *Madison River*, the road leaves the park 12 miles from the western entrance and enters the *Madison National Forest*. From here the road crosses the wide level valley of the *Madison River* through a dense forest of lodgepole pine, and after crossing the *Madison River* reaches the western entrance, *West Yellowstone, Mont.* The road from *West Yellowstone* to *Madison Junction*, where the main loop is joined, is described on page 29.

YELLOWSTONE PARK TRAILS

An extensive system of trails is available for the saddle horse lover desiring to visit the more remote and wilder sections of the park. Away from the beaten paths, the watcher on the trail is amply rewarded in the study of wild animals in their native retreats during summer months. It is here that nature, except for trails, remains undisturbed; where scenic beauty is so vividly impressed; where spots that appeal may be studied to your heart's content, uninterrupted by any schedule of transportation.

HOWARD EATON TRAIL

	Miles
Mammoth Hot Springs to Norris Junction.....	20
Norris Junction to Fountain Ranger Station.....	18
Fountain Ranger Station to Old Faithful.....	11
Old Faithful to West Thumb.....	20
West Thumb to Lake.....	20
Lake to Canyon.....	16
Canyon to Tower Falls Junction.....	20
Canyon to Norris Junction ¹⁴	14
Tower Falls Junction to Mammoth Hot Springs.....	18

Total mileage of Howard Eaton trail.....157

The Howard Eaton trail is a linking up of a former series of short trails. It will be noted the above listing discloses the main points of interest in the order viewed by automobile travel, starting from and ending at Mammoth Hot Springs. The Howard Eaton trail follows closely the "loop" road, touching those points of interest visited by vehicle travel, yet the trail is sufficiently distant from the road at most points to avoid contact, except at key points of interest, with travelers on the "loop" highway. The traveler by trail may start from any other station listed, reversing the route or otherwise arranging the trip to meet his requirements. The Canyon to Norris or Norris to Canyon crosscut enables the hurried traveler to split the entire route into sections to be traveled, as time affords. Certain branch trails may also be taken where they link with the Howard Eaton Trail, as the following trail schedule indicates:

¹⁴ Intersecting trail between east and west sides of park at these points.

SCHEDULE OF TRAILS, POINTS FROM WHICH THEY RADIATE, AND DISTANCES ¹⁵

	Miles
1. From Mammoth Hot Springs:	
To summit of Mount Everts and return.....	10
Around Bunsen Peak to foot of Osprey Falls and return.....	12
To summit of Mount Sepulcher and return.....	14
To Gardiner, Mont., via old road, and return.....	10
To Sportsman Lake, via Electric Peak.....	14
From Sportsman Lake to Gallatin Ranger Station.....	11
To Gallatin Ranger Station, through Snow Pass and Fawn Pass....	30
To Gallatin Ranger Station, via Golden Gate, and Big Horn Pass Trail	35
To Riverside Ranger Station, via Golden Gate, on Riverside Trail..	33
From Riverside Ranger Station to Fountain Ranger Station, on Madison Plateau Trail.....	15
2. From Old Faithful:	
To Biscuit Basin.....	2.5
From Biscuit Basin to Fountain, on Little Firehole Trail.....	16
From Fountain to Riverside, on Madison Plateau Trail.....	15
To West Boundary, on Summit Lake Trail.....	16
To Lone Star Geyser.....	3.5
From Lone Star Geyser to Shoshone Lake outlet, Shoshone Trail..	15
From Shoshone Lake to Lewis Lake, on Sheridan Trail.....	5
To Lewis Lake, via Norris Pass, DeLacy Creek, and Shoshone Lake.....	24
From Lewis Lake to Heart Lake, on Sheridan Trail.....	7
To Bechler River Ranger Station, via Lone Star Geyser and Bech- ler Canyon.....	35
To Mallard Lake, over Mallard Lake Trail, and return.....	8
3. From Lake:	
To Soda Butte, via Cold Creek and Lamar River Junction.....	53
From Cold Creek and Lamar River Junction to East Boundary....	3
From Cold Creek and Lamar River Junction to East Boundary, via Miller Creek.....	20
From Cold Creek and Lamar River Junction to Frost Lake.....	7
4. From Canyon:	
To Fountain, via Mary Lake, on Mary Mountain Trail.....	25
To foot of Lower Falls, on Uncle Tom's Trail from Canyon Lodge..	.5
To Seven Mile Fishing Hole.....	7
To Artist Point from Canyon Lodge.....	1
To Inspiration Point from Canyon Hotel.....	2
To Grebe Lake, on Grebe Lake Trail.....	6
To Summit of Mount Washburn.....	9
To Sulphur Mountain.....	5
To Tower Falls, via Cascade Lake, on Storm Peak Trail.....	25
To Cascade Lake, on Cascade Lake Trail.....	4
To Silver Cord Cascade.....	4
To Devil's Ink Pot.....	4

¹⁵ See saddle-horse trips and rates, pp. 75, 76, 79, 80; also Personally Conducted Camping Parties, pp. 87 and 88.

5. From Tower Falls:	Miles
To Canyon, via Cascade Lake, on Storm Peak Trail.....	25
To Specimen Ridge.....	7
From Specimen Ridge to Soda Butte, via Amethyst Mountain.....	12
To North Boundary, via Hellroaring Creek, Hellroaring Trail.....	12
To East Boundary, via Buffalo Farm and Miller Creek.....	37
To East Boundary, via Lamar River and Cold Creek Junction.....	45
To Frost Lake, via Lamar River and Cold Creek Junction.....	49
6. From Fountain:	
To Riverside Ranger Station, on Madison Plateau Trail.....	15
To Biscuit Basin, on Little Firehole Trail.....	16
From Biscuit Basin to Old Faithful.....	2.5
To Canyon, via Mary Lake, on Mary Mountain Trail.....	25
7. From West Thumb:	
To Lake (see Howard Eaton Trail).....	20
To Heart Lake, by road and trail.....	15
To Lewis Lake (proposed trail).....	9
To Shoshone Lake, via road and trail.....	14
8. From Norris:	
To Lake of Woods, on Lake of Woods Trail.....	8
9. From Soda Butte:	
To Lake, via Lamar River and Cold Creek Junction.....	53
From Lamar River and Cold Creek Junction to East Boundary..	3
To East Boundary, via Miller Creek.....	20
From Lamar River and Cold Creek Junction to Frost Lake.....	7
To Specimen Ridge, via Amethyst Mountain.....	12
From Specimen Ridge to Tower Falls Junction.....	7
10. From Gardiner:	
To Blacktail Deer Creek, on Turkeypen Trail.....	7
From Blacktail Deer Creek to Hellroaring, on Hellroaring Trail..	12
From Hellroaring to Slough Creek, on Hellroaring Trail.....	12
From Slough Creek to North Boundary, on Slough Creek Trail....	12
To Crevice Ranger Station, on Crevice Trail.....	7
To Knowles Cabin, on Knowles Trail.....	8
To Mammoth Hot Springs, on old road.....	5
11. From Gallatin:	
To Mammoth Hot Springs, through Snow Pass and Fawn Pass....	30
To Sportsman Lake, via Sportsman Lake Trail.....	11
From Sportsman Lake to Mammoth Hot Springs, via Electric Peak..	14
To Mammoth Hot Springs, via Golden Gate, on Big Horn Pass Trail.....	35
To Bechler River Station, via Riverside, on West Boundary Trail..	60
12. From Riverside:	
To Fountain Ranger Station, on Madison Plateau Trail.....	15
From Fountain Ranger Station to Biscuit Basin on Little Firehole Trail.....	16
From Biscuit Basin to Old Faithful.....	2.5
To Mammoth Hot Springs, via Golden Gate, on Riverside Trail....	33
13. From Upper Yellowstone:	
To Snake River Station, via Big Game Ridge.....	25
To Lake, on Upper Yellowstone Trail.....	50

Weather report for Mammoth Hot Springs, Yellowstone Park, Wyo., 1887 to 1928, inclusive

[Compiled by Glen Jefferson, meteorologist, United States Weather Bureau]

	Length of record	January	February	March	April	May	June	July	August	September	October	November	December	Annual
Mean temperature (degrees Fahrenheit).....	42	18.2	20.2	27.0	37.0	45.6	53.9	61.3	59.9	51.0	40.6	29.5	20.2	38.7
Mean maximum temperature (degrees Fahrenheit).....	42	26.4	29.9	37.1	48.0	57.6	67.3	76.5	75.5	64.9	52.0	38.6	28.2	50.2
Mean minimum temperature (degrees Fahrenheit).....	42	10.0	10.4	17.1	26.1	33.8	40.6	46.1	44.4	37.1	28.8	20.3	12.1	27.2
Highest temperature (degrees Fahrenheit) and date.....	42	1888 49	1921 51	1910 62	1890 77	1887 89	1900 92	1901 96	1900 93	1887 88	1893 82	1887 68	1920 48	July, 1901 96
Lowest temperature (degrees Fahrenheit) and date.....	42	1888 -41	1905 -36	1920 -25	1920 -3	1899 15	1901 20	1901 30	1910 23	1895 Zero.	1887 -20	1896 -27	1923 -34	Jan., 1888 -41
Average number of days with minimum temperature zero or below.....	25	6	5	3								2	5	21
Average precipitation (inches).....	42	1.80	1.40	1.78	1.35	2.02	1.69	1.31	1.10	1.22	1.39	1.38	1.47	17.91
Greatest precipitation in 24 hours (inches) and date.....	41	1895 1.60	1890 1.30	1888 1.12	1921 0.76	1921 1.55	1895 1.55	1902 1.40	1924 0.98	1905 0.98	1908 2.34	1893 0.90	1889 1.05	Oct., 1908 2.34
Average number of days with 0.01 inch, or more, of precipitation.....	42	13	10	12	10	13	12	10	9	8	9	10	12	128
Average snowfall (inches).....	42	18.8	14.2	16.1	8.6	4.6	0.8	0.1	T.	1.6	7.1	11.0	14.6	97.5
Greatest snowfall in 24 hours (inches) and date.....	42	1895 16.0	1908 13.1	1888 11.2	1911 7.0	1921 10.8	1905 8.0	1921 3.8	1910 T.	1919 7.7	1919 14.0	1893 9.0	1922 11.3	Jan., 1895 16.0
Average depth of snow on ground at end of month (inches).....	25	11.8	12.2	5.5	0.3	T.	0	0	0	0.1	1.0	2.9	7.7	
Greatest depth of snow on ground (inches) and date.....	25	1911 26.0	1922 29.6	1917 35.6	1917 26.2	1921 10.8	1905 4.0	1921 2.3	1910 T.	1919 6.0	1919 14.6	1911 12.8	1916 28.0	Mar., 1917 35.6
Average hourly wind velocity (miles per hour).....	25	9.1	8.3	8.6	8.0	7.9	7.4	6.8	6.8	7.4	7.3	8.0	7.9	7.8
Maximum wind velocity (miles per hour) and date.....	25	1917 42-SW.	1923 52-NW.	1921 54-S.	1922 48-SW.	1927 54-S.	1911 45-S.	1904 52-SW.	1912 48-S.	1915 49-S.	1916 46-NW.	1926 44-S.	1907 42-SW.	Mar., 1921 54-S.
Prevailing wind direction.....	42	S.	S.	S.	S.	S.	S.	S.	S.	S.	S.	S.	S.	S.
Sunshine (percentage of possible) average.....	25	39	52	58	57	54	62	72	70	63	57	45	39	56
Average number of days clear, partly cloudy, and cloudy:														
Clear.....	25	5	7	7	7	6	8	12	12	10	10	7	6	97
Partly cloudy.....	25	9	11	13	13	13	15	14	14	11	10	10	9	142
Cloudy.....	25	16	11	12	11	12	7	4	5	8	11	13	16	126
Mean relative humidity (percentage of saturation):														
6 a. m.....	25	78	78	77	76	77	75	75	73	74	74	74	78	76
Noon.....	11	67	65	57	51	46	40	36	38	45	53	62	69	52
6 p. m.....	25	73	67	60	52	49	43	39	38	46	57	65	73	55

T. indicates trace.

Table of surface temperatures of hot springs, geysers, and fumaroles

[Based upon observations made by the Geophysical Laboratory of the Carnegie Institution of Washington, D. C.]

All given temperatures are at best only approximate as they vary considerably from time to time.

Name	Temperatures		Remarks
	Centi- grade	Fahren- heit	
Boiling River.....	48.5	119.3	North of Mammoth on river bank.
Mammoth Hot Springs:			
Angel Terrace.....	74.0	165.5	Most delicate formation.
Cleopatra Terrace.....	68.0	154.4	Coloring due to algae.
Hymen Terrace.....	73.0	163.6	Nearest to Liberty Cap.
Jupiter Terrace.....	73.0	163.6	Largest hot spring terrace in the world.
Mound Terrace.....	71.0	159.8	High, prominent formation.
Norris Geyser Basin:			
Black Growler Steam Vent.....	140.0	284.0	Hottest vent in the park.
Cinder Pool.....	92.0	197.6	Peculiar "cinders" floating on surface.
Echinus Geyser.....	91.0	195.8	Beautiful spiny sinter.
New Crater Geyser.....	93.0	199.4	Ruddy, mineral-colored formation.
Beryl Spring (Gibbon Canyon).....	92.0	197.6	Violently agitated spring.
Lower Geyser Basin:			
Clepsydra Geyser.....	92.0	197.6	Name means a water clock.
Fountain Paint Pot.....	93.5	200.3	Bubbling, colored clay.
Great Fountain Geyser.....	96.0	204.8	Beautiful and quite regular.
Biscuit Basin:			
Jewel Geyser.....	95.0	203.0	Just before an eruption.
Do.....	92.0	197.6	Just after an eruption.
Sapphire Pool.....	93.0	199.4	Intermittently seething.
Upper Geyser Basin:			
Beach Spring.....	89.3	192.7	Algaous coloring notable.
Beehive Geyser.....	95.0	203.0	Beautifully slender geyser.
Chinaman Spring.....	93.5	200.3	A small spring near Old Faithful.
Giantess Geyser.....	94.2	201.6	Dangerous area.
Lion Geyser.....	93.8	200.6	Active once or more each day.
Lioness Geyser.....	94.8	202.64	Very seldom in eruption.
Morning Glory Pool.....	77.0	170.6	One of the most famous pools.
Sponge Geyser.....	95.0	203.0	Coloring due to iron.
Teakettle Spring.....	94.0	201.2	Violently bubbling.
Tortoise Shell Spring.....	95.0	203.0	Bubbler beside Castle Geyser.
Black Sand Basin:			
Black Sand Pool.....	93.0	199.4	Deep blue color.
Cliff Geyser.....	91.1	195.98	Infrequently erupts.
Comet Geyser.....	94.8	202.64	Underground connection with Daisy Geyser.
Daisy Geyser.....	94.0	200.1	Just before eruption.
Do.....	91.0	195.8	Just after eruption.
Emerald Pool.....	69.3	156.74	Most beautiful green pool.
Handkerchief Pool.....	83.5	182.3	A famous spring.
Punch Bowl Spring.....	94.5	202.1	A crested, bubbling spring.
Yellowstone River Road:			
Dragons Mouth.....	75.0	167.0	Gushing, muddy water.
Mud Volcano.....	84.0	183.2	Violently boiling mud.

PROMINENT GEYSERS AND SPRINGS OF THE YELLOWSTONE

NORRIS GEYSER BASIN

Name	Height of eruption	Duration of eruption	Interval between eruption	Remarks	Heat of water
	<i>Feet</i>				<i>° F.</i>
Black Growler.....				Great steam vent.....	284.0
Constant Geyser.....	15-35	5 to 15 seconds.....	20 to 55 seconds.....	Irregular.....	188.1
Coral Geyser.....			Irregular.....	Coral like sinter.....	
Echinus Geyser.....	30	3 minutes.....	40 to 50 minutes.....	Spiny sinter.....	195.8
Hurricane Vent.....				Whirling steam vent.....	
Ledge Geyser.....	75	Irregular.....	Irregular.....	Plays from three vents.....	
Minute Man Gey- ser.....	8-15	15 to 30 seconds.....	do.....	Quiet for long periods.....	
New Crater Gey- ser.....	6-25	1 to 4 minutes.....	2 to 5 minutes.....	Beautiful ruddy sinter.....	199.4
Pearl Geyser.....			Irregular.....	Glistening sinter.....	171.5
Valentine Geyser.....	60	15 to 60 minutes.....	do.....	In crater-like pit.....	199.4
Vixen Geyser.....			do.....	Vigorous.....	195.8
Whirligig Geyser.....	10-15	Irregular.....	do.....	Near Constant Geyser.....	189.9

Prominent Geysers and Springs of the Yellowstone—Continued

LOWER GEYSER BASIN (INCLUDING MIDWAY GEYSER BASIN)

Name	Height of eruption	Duration of eruption	Interval between eruption	Remarks	Heat of water
Black Warrior Springs.	-----	-----	-----	Near Steady Geyser.	-----
Clepsydra Geyser.	10-40	Few seconds.	3 minutes.	Named for water clock.	197.6
Excelsior Geyser Crater.	200-300	About ½ hour.	Irregular.	Ceased playing in 1890.	193.3
Fountain Geyser.	75	10 minutes.	do.	Seldom in eruption.	-----
Fountain Paint Pot.	-----	-----	-----	Basin of boiling clay.	200.3
Firehole Lake.	-----	-----	-----	Underwater "flames."	-----
Grand Prismatic Spring.	-----	-----	-----	Size about 200 by 400 feet; remarkable coloring.	149.8
Great Fountain Geyser.	75-150	45 to 60 minutes.	8 to 12 hours.	Spouts 4 or 5 times.	204.8
New Geyser (1928).	100-125	4 to 5 hours.	12 to 15 hours.	Started playing at its present dimensions in July, 1928.	-----
Steady Geyser.	20-40	Steady.	None.	Plays continuously.	-----
Turquoise Pool.	-----	-----	-----	About 100 feet in diameter.	-----

UPPER GEYSER BASIN (OLD FAITHFUL GEYSER BASIN)

Artemisia Geyser.	50	10 to 15 minutes.	24 to 30 hours.	Irregular.	-----
Beehive Geyser.	200	6 to 8 minutes.	Irregular.	Averaged 3 or 4 times per month in 1928.	-----
Black Sand Pool.	-----	-----	-----	Deep Blue Pool.	199.4
Castle Geyser.	50-75	30 minutes.	Irregular.	Played daily in 1928.	-----
Chinaman Spring.	-----	-----	-----	Active bubbler.	200.3
Cliff Geyser.	40-50	Irregular.	Irregular.	Seldom in eruption.	-----
Cub, Big.	60	8 minutes.	With Lioness.	-----	201.0
Cub, Little.	3-10	17 minutes.	1 to 2 hours.	-----	201.0
Daisy Geyser.	70	3 minutes.	80 to 90 minutes.	-----	200.1
Emerald Pool.	-----	-----	-----	Beautiful green pool.	156.7
Giant Geyser.	200-250	60 minutes.	Irregular.	Played once or twice a month in 1928.	202.7
Giantess Geyser.	150-200	12 to 36 hours.	do.	About once a year.	201.6
Grand Geyser.	200	15 to 30 minutes.	16 to 20 hour average.	Spectacular eruption.	-----
Grotto Geyser.	20-30	Varies.	2 to 5 hours.	Distinctive cone.	201.0
Jewel Geyser.	5-20	1 minute.	5 minutes.	Near Sapphire Pool.	197.6
Lion Geyser.	50-60	2 to 4 minutes.	Irregular.	2 to 17 times a day.	200.6
Lioness Geyser.	80-100	10 minutes.	do.	Played once in 1910, once in 1912, once early in 1914, and once in 1920.	202.6
Morning Glory Pool.	-----	-----	-----	Beautiful blue pool.	170.6
Oblong Geyser.	20-40	7 minutes.	Irregular.	About once a day.	201.8
Old Faithful.	120-170	4 minutes.	60 to 80 minutes.	Usual interval 65 minutes.	200.1
Punch Bowl Spring.	-----	-----	-----	Crested spring near road.	202.1
Riverside Geyser.	80-100	15 minutes.	7 to 8 hours.	Very regular; plays over the river.	201.2
Sawmill Geyser.	20-35	1 to 3 hours.	Irregular.	Usually 5 to 8 times a day.	192.1
Splendid Geyser Crater.	200	10 minutes.	Extinct.	Has not played since 1892.	200.48
Sponge Geyser.	-----	1 minute.	2 to 3 minutes.	A small but perfect geyser.	203.0
Sunset Lake.	-----	-----	-----	A beautiful hot lake.	-----
Turban Geyser.	20-40	10 minutes to 3 hours.	Irregular.	Turbanlike pieces of sinter in the crater.	-----

Notable springs.—Black Sand Pool [199.4], Chinaman [200.3], Emerald Spring [156.7], Morning Glory [170.6], Punch Bowl [202.1], Sunset Lake, Crested Pool [191], Teakettle Spring [201.2], Handkerchief Pool [182.3].¹⁰

¹⁰ Figures given indicate approximate temperature in degrees Fahrenheit.

FISHING IN THE YELLOWSTONE PARK

To thoroughly enjoy the fishing of the Yellowstone National Park, waters as remote as possible should always be sought. Most of the streams and lakes in the park from timber line down to the lowest altitudes contain trout of one or more species, and a few contain whitefish and grayling. But the more accessible waters are fished so steadily by our thousands of visitors that the trout become educated and wary. Back in the depths of the mountain fastnesses are fish that are much less disturbed and that can be caught more readily.

Fishing tackle may be purchased at the general store, near the hotel at Mammoth, and at the general stores at Upper Geyser Basin, Lake, and Canyon Junction. It may be rented of the porters at the Mammoth Hotel, Old Faithful Inn, and Grand Canyon Hotel, and of the Yellowstone Park Boat Co. at the lake. At the various lodges of the Yellowstone Park Lodge Co. fishing tackle may be rented or purchased as desired. No fishing license required.

The native fishes of the park represent only a few species which have been supplemented by a number of others planted by the Government in barren waters. The species that now abound in the park comprise some of the best game fishes. Persons planning to fish should provide themselves with the pamphlet entitled "Fishes of the Yellowstone National Park," by Hugh M. Smith and William C. Kendall, of the United States Bureau of Fisheries. This pamphlet contains a description of the park waters, a figure of each kind of fish in the park, together with notes on size, distribution, habits, game qualities, etc. It is a public document and is sold for 5 cents a copy. It may be purchased from the Superintendent of Documents, Government Printing Office, Washington, D. C., and in Yellowstone National Park at the *Information Office*, Mammoth Hot Springs, or the *Old Faithful Museum*, but the latter offices can not fill mail orders.

WILD ANIMALS

Bears are seen daily in summer at garbage dumps near hotels, lodges, and camps, occasionally along the roads, and abundantly around the kitchen door at *Roosevelt Lodge*. Moose are seen occasionally, especially in the evenings. Mountain sheep are seen about once a week on Mount Washburn. Elk remain in the mountains above 8,000 feet and can be seen on trips made especially for this purpose. Deer are frequent along roads and trails, and antelope may always be found on hikes or horseback trips about *Roosevelt Lodge*. Beavers may be seen at work along the Rangers' Nature Trail at Mammoth Hot Springs, or near *Roosevelt Lodge*.

In winter elk, mule deer, and white-tailed deer, antelope, and mountain sheep may be viewed at close quarters along the northern line of the park, and a lover of wild animals would be well repaid for taking a trip to Gardiner and Mammoth Hot Springs to see them.

RULES AND REGULATIONS

(Approved February 18, 1929, to continue in force and effect until otherwise directed by the Secretary of the Interior)

GENERAL REGULATIONS

The following rules and regulations for the government of the Yellowstone National Park are hereby established and made public pursuant to authority conferred by section 2475, United States Revised Statutes, the act of Congress approved May 7, 1894 (28 Stat. 73), as amended June 28, 1916 (39 Stat. 238), and the act of August 25, 1916 (39 Stat. 535), as amended June 2, 1920 (41 Stat. 732).

1. *Preservation of natural features and curiosities.*—It is forbidden to remove or injure the sediments or incrustations around the geysers, hot springs, or steam vents; or to deface the same by written inscriptions or otherwise; or to throw any object or substance into the springs or steam vents; or to injure or disturb in any manner or to carry off any of the mineral deposits, specimens, natural curiosities, or wonders within the park; or to ride or drive upon any of the geyser or hot-spring formations; or to turn stock loose to graze in their vicinity.

The destruction, injury, defacement, or disturbance in any way of the public buildings, signs, equipment, or other property, or the trees, flowers, vegetation, rocks, mineral, animal, or bird, or other life is prohibited: *Provided*, That flowers may be gathered in small quantities when, in the judgment of the superintendent, their removal will not impair the beauty of the park. Before any flowers are picked permit must be secured from the ranger in charge.

2. *Camping.*—In order to preserve the natural scenery of the park and to provide pure water and facilities for keeping the park clean, permanent camp sites have been set apart for tourists visiting the park in their own conveyances, and no camping is permitted outside the specially designated sites. These camps have been used during past seasons; they will be used daily this year and for many years to come. It is necessary, therefore, that the following rules be strictly enforced for the protection of the health and comfort of the tourists who visit the park in their own conveyances.

(a) Combustible rubbish shall be burned on camp fires, and all other garbage and refuse of all kinds shall be placed in garbage cans, or, if cans are not available, placed in the pits provided at the edge

of camp. At new or unfrequented camps garbage shall be burned or carried to a place hidden from sight. *Keep the camp grounds clean.*

(b) There are thousands of visitors every year to each camp site, and the water in the creeks and streams adjacent is not safe to drink. The water supply provided is pure and wholesome and must be used. If, however, the water supply is not piped to grounds, consult rangers for sources to use. Tourists out on hiking parties must not contaminate watersheds of water supplies. They are indicated by signs, pipe lines, and dams. *There is plenty of pure water; be sure you get it.*

(c) Campers and others shall not wash clothing or cooking utensils or pollute in any other manner the waters of the park, or bathe in any of the streams near the regularly traveled thoroughfares in the park without suitable bathing clothes.

(d) Stock shall not be tied so as to permit their entering any of the streams of the park. All animals shall be kept a sufficient distance from camping grounds in order not to litter the ground and make unfit for use the area which may be used later as tent sites.

(e) Wood for fuel shall only be taken from dead or fallen trees.

3. *Fires.*—Fires constitute one of the greatest perils to the park; they shall not be kindled near trees, deadwood, moss, dry leaves, forest mold, or other vegetable refuse, but in some open space on rocks or earth. Should camp be made in a locality where no such open space exists or is provided, the deadwood, moss, dry leaves, etc., shall be scraped away to the rock or earth over an area considerably larger than that required for the fire. Fires shall be lighted only when necessary, and when no longer needed shall be completely extinguished and all embers and bed smothered with earth or water so that there remains no possibility of re-ignition.

Especial care shall be taken that no lighted match, cigar, or cigarette is dropped in any grass, twigs, leaves, or tree mold.

4. *Hunting.*—The park is a sanctuary for wild life of every sort, and hunting, killing, wounding, capturing, or frightening any bird or wild animal in the park, except dangerous animals when it is necessary to prevent them from destroying life or inflicting injury, is prohibited.

The outfits, including guns, traps, teams, horses, or means of transportation used by persons engaged in hunting, killing, trapping, ensnaring, or capturing birds or wild animals, or in possession of game killed on the park lands under circumstances other than prescribed above, shall be taken up by the superintendent and held subject to the order of the Director of the National Park Service, except in cases where it is shown by satisfactory evidence that the

outfit is not the property of the person or persons violating this regulation and the actual owner was not a party to such violation. Firearms are prohibited in the park except on written permission of the superintendent. Visitors entering or traveling through the park to places beyond shall, at entrance, report and surrender all firearms, traps, nets, seines, or explosives in their possession to the first park officer and in proper cases may obtain leave to carry them through the park sealed. The Government assumes no responsibilities for loss or damage to any firearms, traps, nets, seines, or other property so surrendered to any park officer nor are park officers authorized to accept responsibility of custody of any property for the convenience of visitors.

5. *Bears*.—Molesting, teasing, or touching the bears is prohibited.

6. *Fishing*.—Fishing with nets, seines, traps, or by the use of drugs or explosives or in any other way than with hook and line, or for merchandise or profit is prohibited. Boiling or attempting to boil live fish in hot springs, pools, or geysers, is prohibited. Fishing in particular waters may be suspended by the superintendent, who may also designate waters which shall be reserved exclusively for fishing with the artificial fly. All fish hooked less than 8 inches long shall be carefully handled with moist hands and returned at once to the water if not seriously injured. Fish retained shall be killed immediately upon being removed from the hook.

Ten fish per person fishing shall constitute the limit for a day's catch. In the discretion of the superintendent the limit for a day's catch may be extended to not exceeding 20 fish per day per person fishing in well-stocked waters distant from the Grand Loop Road.

The use of live minnows for bait in any of the waters within the park is prohibited.

7. *Private operations*.—No person, firm, or corporation shall reside permanently, engage in any business, or erect buildings in the park without permission in writing from the Director of the National Park Service, Washington, D. C. Applications for such permission may be addressed to the director or to the superintendent of the park.

8. *Cameras*.—Still and motion-picture cameras may be freely used in the park for general scenic purposes. For the filming of motion pictures requiring the use of artificial or special settings, or involving the performance of a professional cast, permission must first be obtained from the superintendent of the park.

9. *Gambling*.—Gambling in any form, or the operation of gambling devices, whether for merchandise or otherwise, is prohibited.

10. *Advertisements*.—Private notices or advertisements shall not be posted or displayed within the park, excepting such as the park superintendent deems necessary for the convenience and guidance of the public.

11. *Mining*.—The location of mining claims is prohibited within the park.

12. *Grazing*.—The running at large, herding, or grazing of livestock of any kind in the park, as well as the driving of livestock over same, is prohibited, except where authority therefor has been granted by the superintendent. Livestock found improperly on the park lands may be impounded and held until claimed by the owner and the trespass adjusted.

13. *Authorized operators*.—All persons, firms, or corporations holding franchises in the park shall keep the grounds used by them properly policed and shall maintain the premises in a sanitary condition to the satisfaction of the superintendent. No operator shall retain in his employment a person whose presence in the park may be deemed by the superintendent subversive of good order and management of the park.

All operators shall require each of their employees to wear a metal badge with a number thereon, or other mark of identification, the name and the number corresponding therewith, or the identification mark, being registered in the superintendent's office. These badges must be worn in plain sight on the hat or cap.

14. *Dogs and cats*.—Dogs and cats may be transported through the park, provided they are kept on a leash or in a crate while within the confines of the park. All dogs and cats must be registered at the entrance ranger station. The superintendent has authority to grant, in writing, special permission, if necessary, to retain dogs and cats in the park unleashed.

15. *Dead animals*.—All domestic and grazed animals that may die in the park at any tourist camp or along any of the public thoroughfares shall be buried immediately by the owner or the person having charge of such animals at least 2 feet beneath the ground, and in no case less than one-fourth mile from any camp or thoroughfare.

16. *Travel*.—(a) Saddle horses, pack trains, and horse-drawn vehicles have right of way over motor-propelled vehicles at all times.

(b) On side hill grades throughout the park motor-driven vehicles shall take the outer side of the road when meeting or passing vehicles of any kind drawn by animals.

(c) Load and vehicle weight limitations shall be those prescribed from time to time by the Director of the National Park Service and shall be complied with by the operators of all vehicles using the park roads. Schedules showing weight limitations for different roads in the park may be seen at the office of the superintendent and at the ranger stations at the park entrances.

(d) All vehicles shall be equipped with lights for night travel. At least one light shall be carried on the left front side of horse-

drawn vehicles in a position such as to be visible from both front and rear.

17. *Miscellaneous.*—(a) Campers and all others, save those holding licenses from the Director of the National Park Service, are prohibited from hiring their horses, trappings, or vehicles to tourists or visitors in the park.

(b) No pack-train or saddle-horse party will be allowed in the park unless in charge of a licensed guide. All guides shall pass an examination prescribed by and in a manner satisfactory to the superintendent of the park covering the applicant's knowledge of the park and fitness for the position of licensed guide. At the discretion of the superintendent, licensed guides may be permitted to carry unsealed firearms.

(c) All complaints by tourist and others as to service, etc., rendered in the park should be made to the superintendent in writing before the complainant leaves the park. Oral complaints will be heard daily during office hours.

(d) The Government is in no way responsible for any kind of accident.

18. *Fines and penalties.*—Persons who render themselves obnoxious by disorderly conduct or bad behavior shall be subjected to the punishment hereinafter described for violation of the foregoing regulations, or they may be summarily removed from the park by the superintendent and not allowed to return without permission in writing from the Director of the National Park Service or the superintendent of the park.

Any person who violates any of the foregoing regulations shall be deemed guilty of a misdemeanor and shall be subject to a fine of not more than \$500 or imprisonment not exceeding six months, or both, and be adjudged to pay all the costs of the proceedings.

19. *Lost and found articles.*—Persons finding lost articles should deposit them at the nearest ranger station, leaving their own names and addresses, so that if not claimed by owners within 60 days articles may be turned over to those who found them.

AUTOMOBILE AND MOTOR CYCLE REGULATIONS

Pursuant to authority conferred by section 2475, United States Revised Statutes, the act of Congress approved May 7, 1894 (28 Stat. 73), as amended June 28, 1916 (39 Stat. 238), and the act of August 25, 1916 (39 Stat. 535), as amended June 2, 1920 (41 Stat. 732), the following regulations covering the admission of automobiles and motor cycles into the Yellowstone National Park are hereby established and made public:

1. *Entrances*.—Automobiles and motor cycles may enter and leave the park between 6 a. m. and 9.30 p. m. by any of the entrances, viz, northern or Gardiner entrance, western or West Yellowstone entrance, eastern or Cody entrance, southern or Snake River entrance.

The superintendent may in his discretion keep any or all the gateways open longer each day should the public convenience make this appear necessary.

2. *Automobiles*.—The park is open to automobiles operated for pleasure, but not to those carrying passengers who are paying, either directly or indirectly, for the use of machines (excepting, however, automobiles used by transportation lines operating under Government franchise), and any person operating an automobile in contravention of the provisions of this regulation will be deemed guilty of its violation.

Careful driving is demanded of all persons using the roads.

The Government is in no way responsible for any kind of accident.

3. *Motor cycles*.—Motor cycles are admitted to the park under the same conditions as automobiles and are subject to the same regulations, as far as they are applicable.

4. *Motor trucks*.—Motor trucks may enter the park subject to the weight limitations and entrance fees prescribed by the Director of the National Park Service. Schedules showing prescribed weight limitations and entrance fees for motor trucks may be seen at the office of the superintendent and at the ranger stations at the park entrances.

5. *Permits*.—A permit shall be secured at the ranger station where the motor vehicle enters, and will entitle the permittee to operate the particular vehicle indicated in the permit over any or all of the roads in the park. It is good for the entire season, expiring on December 31 of the year of issue, but is not transferable for the operation of any other vehicle than that for which originally issued. The permit shall be carefully kept so that it can be exhibited to park rangers on demand.

6. *Fees*.—Fees for automobiles and motor-cycle permits are \$3 and \$1, respectively, and are payable in cash.

7. *Direction*.—Automobiles shall pass around the road system forming the "loop" in the direction opposite to that of the hands of a clock, as indicated by the arrows printed in red on the automobile guide map. The reverse direction may be taken as follows:

Norris Junction (N. J.) to Mammoth Hot Springs (M. S.), any time, day or night.

Madison Junction (M. J.) to Norris Junction (N. J.), any time of day or night except the periods 9 a. m. to 11.30 a. m. and 2 p. m. to 4.30 p. m.

Upper Geyser Basin (Old Faithful—O. F.) to Western Entrance (W. E.), any time, day or night.

Canyon Junction (C. J.) to Lake Junction (L. J.), any time, day or night.

Mammoth Hot Springs (M. S.) to Tower Falls, early enough to reach Tower Falls by 1 p. m. (but not to Canyon Junction—C. J.). Distance, 20.2 miles.

Canyon Junction (C. J.) to Norris Junction (N. J.) direct, any time, day or night.

Lake Junction (L. J.) to West Thumb (W. T.) and South Entrance (S. E.) (but not Old Faithful—O. F.), any time, day or night.

Summit of Mount Washburn (Mt. W.) down north side to junction of Dunraven Pass Road, thence to Canyon Junction (C. J.), after 3 p. m.

The superintendent of the park has authority to change routing of cars if necessary.

8. *Distance apart, gears, and brakes.*—Automobiles while in motion should keep a reasonable distance apart, except for purpose of passing, which is permissible only on comparative levels or on slight grades. All automobiles, except while shifting gears, must retain their gears constantly enmeshed. The driver of each automobile will be required to satisfy the ranger issuing the permit that all parts of his machine, particularly the brakes and tires, are in first-class working order and capable of making the trip, and that there is sufficient gasoline in the tank to reach the next place where it may be obtained. The automobile shall carry at least one extra tire.

9. *Speeds.*—Automobiles and other vehicles shall be so operated as to be under the safe control of the driver at all times. The speed shall be kept within such limits as may be necessary to avoid accident. Speed is limited to 15 miles per hour on grades and when rounding sharp curves and in restricted areas. On straight open stretches the speed may be increased to not exceeding 30 miles per hour.

The speed of all motor trucks over 1½ tons capacity is limited not to exceed 20 miles per hour on all park roads.

10. *Horns.*—The horn shall be sounded on approaching curves or stretches of road concealed for any considerable distance by slopes, overhanging trees, or other obstacles, and before meeting or passing other machines, riding or driving animals, or pedestrians.

11. *Lights.*—All automobiles shall be equipped with head and tail lights, the headlights to be of sufficient brilliancy to insure safety in driving at night, and all lights shall be kept lighted after sunset when automobile is on the road. Headlights shall be dimmed when meeting other automobiles or horse-drawn vehicles.

12. *Muffler cut-outs.*—Muffler cut-outs shall be closed while approaching or passing riding horses, horse-drawn vehicles, hotels, lodges, or camps.

13. *Teams.*—When teams, saddle horses, or pack trains approach, automobiles shall take the outer edge of the roadway, regardless of the direction in which they may be going, taking care that sufficient room is left on the inside for the passage of vehicles and animals. Teams have the right of way, and automobiles shall be backed or otherwise handled as may be necessary, so as to enable teams to pass with safety. In no case shall automobiles pass animals on the road at a speed greater than 8 miles per hour.

14. *Overtaking vehicles.*—Any vehicle traveling slowly upon any of the park roads shall, when overtaken by a faster-moving motor vehicle, and upon suitable signal from such overtaking vehicle, give way to the right, in case of motor-driven vehicles, and to the inside, or bank side of the road, in case of horse-drawn vehicles, allowing the overtaking vehicle reasonably free passage, provided the overtaking vehicle does not exceed the speed limits specified for the park highways.

When automobiles, going in opposite directions, meet on a grade, the ascending machine has right of way, and the descending machine shall be backed or otherwise handled, as may be necessary to enable the ascending machine to pass with safety.

15. *Accidents; stop-overs.*—Automobiles stopping over at points inside the park, or delayed by breakdowns or accidents of any other nature, shall be immediately parked off the road, or, where this is impossible, on the outer edge of the road.

Any driver of a motor-driven vehicle who meets with an accident shall report same at the nearest ranger station, or to the superintendent of the park.

16. *Fines and penalties.*—Any person who violates any of the foregoing regulations shall be deemed guilty of a misdemeanor and shall be subject to a fine of not more than \$500 or imprisonment not exceeding six months, or both, and be adjudged to pay all costs of the proceedings—or may be punished by revocation of the automobile permit and by immediate ejectment from the park or by any combination of these penalties. Such violation shall be cause for refusal to issue a new automobile permit to the offender without prior sanction in writing from the Director of the National Park Service or the superintendent of the park.

17. Paragraphs 1, 2, 5, 6, and 7 of these regulations do not apply to motor traffic on the Gallatin Road in the northwest corner of the park.

18. *Garages, repairs, supplies, free automobile camp grounds.*—Gasoline, oils, tires, and accessories are available for purchase at regular supply stations at Mammoth Hot Springs, Old Faithful, West Thumb, Yellowstone Lake, Fishing Bridge Camp Grounds, Grand Canyon, and Tower Falls. Repair shops and garages are maintained at all these points except West Thumb. Prices of supplies and rates for repair work are strictly regulated by the National Park Service. Free public camp grounds for motorists are maintained at points indicated on the automobile guide map and by "Good Camp" signs.

19. *Reduced engine power; gasoline, etc.*—Due to the high altitude of the park roads, averaging nearly 7,000 feet, the power of all automobiles is much reduced. A leaner mixture of gasoline and air is required, but on account of reduced engine power about 50 per cent more gasoline will be used per mile than is required at lower altitudes. Likewise, one gear lower will generally have to be used on grades than would have to be used in other places. A further effect that must be watched is the heating of the engine on long grades, which may become serious unless care is used.

MAPS

Topographic maps of the park and adjacent areas may be purchased from the Director of the Geological Survey, Washington, D. C., at the prices indicated below, postage prepaid. Remittances should be made by cash or money order.

Map of Yellowstone National Park, size 28½ by 32 inches; scale, 2 miles to the inch. Price, 25 cents.¹⁷

The roads, trails, and names are printed in black, the streams and lakes in blue, and the relief is indicated by brown contour lines.

The areas north, east, and south of the park are mapped on the atlas sheets of the Geological Survey listed below. These maps should be ordered by the names of the atlas sheets. They are printed in the same colors as the large map of the park described above.

Area north of park: Livingston sheet; scale, 4 miles to the inch. Price, 10 cents.

Area east of park: Crandall and Ishawooa sheets; scale, 2 miles to the inch. Price, 10 cents each.

Area south of park: Mount Leidy and Grand Teton sheets; scale, 2 miles to the inch. Price, 10 cents each.

¹⁷ May be purchased by personal application to the Information Office at Mammoth Hot Springs or at Old Faithful Museum, but these offices can not fill mail orders.

LITERATURE

GOVERNMENT PUBLICATIONS

Government publications on Yellowstone National Park may be obtained as indicated below. Separate communications should be addressed to the officers mentioned.

LITERATURE ON YELLOWSTONE NATIONAL PARK

DISTRIBUTED FREE BY THE NATIONAL PARK SERVICE

The following publications may be obtained free on written application to the Director of the National Park Service or by personal application to the Government information office at Mammoth or the Old Faithful Museum:

Motorists Guide—Yellowstone National Park. Distributed in park only.

Shows the park road system, hotels, lodges, free public auto camp grounds, garages, superintendent's office, routes to the park, etc. Also contains the automobile regulations and information for the motorist and camper.

Map of National Parks and Monuments.

Shows location of all the national parks and monuments administered by the National Park Service and all railroad routes to the reservations.

Manual for Railroad Tourists. Distributed in park only.

Contains time-tables of all park tours.

Glimpses of our National Parks. 62 pages, including 23 illustrations.

Contains descriptions of the most important features of the principal national parks.

SOLD BY THE SUPERINTENDENT OF DOCUMENTS

The following publications may be obtained from the Superintendent of Documents, Government Printing Office, Washington, D. C., at the prices given, postage prepaid. Remittances should be made by money order or in cash:

National Parks Portfolio, by Robert Sterling Yard. 270 pages, including 310 illustrations. Bound securely in cloth, \$1.¹⁸

Contains nine chapters, each descriptive of a national park, and one larger chapter devoted to other national parks and monuments.

Canyon Automobile Camp, Yellowstone National Park, by Isador W. Mendelsohn. 12 pages. Price, 5 cents.

Illustrated pamphlet dealing with the Canyon Camp from a sanitation point of view.

Reprint No. 1019 from Public Health Service Reports, June 12, 1925.

Geological History of Yellowstone National Park, by Arnold Hague, 24 pages, including 10 illustrations, 10 cents.¹⁸

This pamphlet contains a general résumé of the geologic forces that have been active in the Yellowstone National Park.

Geysers of Yellowstone National Park, by Walter Harvey Weed, 32 pages, including 23 illustrations, 10 cents.¹⁸

In this pamphlet is a description of the forces which have produced the geysers, and the geysers of the Yellowstone are compared with those in Iceland and New Zealand.

¹⁸ May be purchased by personal application to the Information Office at Mammoth Hot Springs or at Old Faithful Museum, but these offices can not fill mail orders.

Fossil Forests of the Yellowstone National Park, by F. H. Knowlton, 32 pages, including 15 illustrations, 10 cents.¹⁸

This pamphlet contains descriptions of the fossil forests of the Yellowstone National Park and an account of their origin.

Fishes of the Yellowstone National Park, by Hugh M. Smith and W. C. Kendall (Bureau of Fisheries Document 904). 30 pages, including 16 illustrations, 5 cents.¹⁸

Contains description of the park waters and notes on fishing.

Guidebook of the Western United States, Part A, The Northern Pacific Route, with a side trip to Yellowstone Park, by M. R. Campbell and others. (Bulletin 611, U. S. Geological Survey.) 1915. 212 pages, 27 route maps, 27 plates, 39 text figures. Price, \$1.

This volume deals with the country along the Northern Pacific Railway from St. Paul to Seattle and along the branch line to Yellowstone Park.

Guidebook of the Western United States, Part B, The Overland Route, with a side trip to Yellowstone Park, by W. T. Lee, R. W. Stone, H. S. Gale, and others. (Bulletin 612, U. S. Geological Survey.) 1915. 244 pages, 29 route maps, 50 plates, 20 text figures. Price, 50 cents.

A handbook for the traveler which deals not only with the geology but with the natural resources, history, and development of the country between Omaha and San Francisco.

REFERENCES

ALBRIGHT, H. M., and TAYLOR, F. J. Oh, Ranger! A Book about the National Parks. Stanford University Press. 1928. 178 pages, illustrated. Price \$2.50.

ALTER, J. CECIL. James Bridger.

A biography. Price, \$12.50. Shepard Book Co., Salt Lake City, Utah.

——— Through the Heart of the Scenic West. 220 pages, illustrated. 1927. Shepard Book Co., Salt Lake City, Utah.

BARNES, O. P. Fly fishing in wonderland, by Klahowya, 1910, 56 pp., illustrated.

BRYCE, JAMES. University and historical addresses. 1913. 433 pp.

National parks—The need of the future on pp. 389-406.

BURROUGHS, JOHN. Camping and Tramping with Roosevelt. 111 pp., illustrated. Houghton Mifflin Co., Boston and New York.

CAMPBELL, REAU. Complete guide and descriptive book of the Yellowstone Park, 1923. 173 pp., illustrated.

CHITTENDEN, H. M. The Yellowstone National Park, historical and descriptive, 1927. 350 pp., illustrated, revised. Price \$3. Published by J. E. Haynes, 341 Selby Avenue, St. Paul, Minn.

DUNRAVEN, EARL OF. The Great Divide: Travels in the Upper Yellowstone in summer of 1874. 1876. 377 pp., illustrated. Reprinted in 1917 under title of Hunting in the Yellowstone, edited by Horace Kephart, 333 pp.

A good description of the park in its early days.

EVARTS, HAL G. Passing of the Old West. 1921.

Relates to wild life of the park.

——— The Cross Pull. 1920. 273 pp. Published by Alfred A. Knopf, New York.

FARQUHAR, FRANCIS P. Reading Up on The Yellowstone. Published by J. E. Haynes, 341 Selby Avenue, St. Paul, Minn.

¹⁸ May be purchased by personal application to the Information Office at Mammoth Hot Springs or at Old Faithful Museum, but these offices can not fill mail orders.

- FORDYCE, DR. C. P. *Trail Craft*, 1922. 202 pp. Published by Stewart Kidd Co., Cincinnati.
- FREEMAN, LEWIS R. *Down the Yellowstone*. 1922. 282 pp., illustrated. Published by Dodd, Mead & Co.
- HAWKINS, P. H. *The trees and shrubs of Yellowstone National Park*. 1924. 125 pp., illustrated. Published by The Collegiate Press, George Banta Publishing Co., Menasha, Wis. Cloth \$0.75, paper \$0.50, post paid.
- HAYNES, JACK E. *Guide to the Yellowstone National Park*. Published annually, 200 pp., illustrated. Price 75 cents. J. E. Haynes, 341 Selby Avenue, St. Paul, Minn.
- HENRIKSSON, FRITZ. *Med. Sveriges Kronprinspar Genoma Amerika. Story of visit of Crown Prince and Crown Princess of Sweden to the United States*. 1926. P. A. Norstedt and Söner.
Yellowstone on pp. 230-252.
- HOLMES, BURTON. *Travelogues*, vol. 6: *The Yellowstone National Park; the Grand Canyon of the Arizona; Moki Land*. 1908. 336 pp., illustrated.
Yellowstone on pp. 5-112.
- HOUGH, EMERSON. *Maw's vacation—a human being in the Yellowstone*. 1924. Second ed., 62 pp. octavo, illustrated. Price 75 cents.
- JEFFERS, LE ROY. *Call of the Mountains*. 1922. 282 pp., illustrated. Published by Dodd, Mead & Co., New York.
Yellowstone on pp. 27-35.
- KANE, J. F. *Picturesque America, Its Parks and Playgrounds*. 1925. 521 pp., illustrated. Published by Frederick Grumbrecht.
Yellowstone on pp. 189-202.
- KIPLING, RUDYARD. *American notes*.
Issued in several editions. One chapter contains an account of a trip through the Yellowstone Park in 1889.
- LANGFORD, N. P. *Discovery of the Yellowstone*. 1923. 122 pp., illustrated.
A good account of one of the early expeditions to the park.
- LEWIS, SINCLAIR. *Free air*.
Story of a motor tour across Northern States, including trip through Yellowstone Park.
- MILLS, ENOS A. *Your National Parks*. 532 pp., illustrated. Houghton-Mifflin Co. 1917.
Yellowstone on pp. 3-64, 433-443.
- *The Grizzly*. 1921. Published by Houghton-Mifflin Co.
- MUIR, JOHN. *Our national parks*. 1909. 382 pp., illustrated.
Yellowstone on pp. 37-75.
- MURPHY, THOMAS D. *Three wonderlands of the American West*. 1912. 180 pp.
Yellowstone on pp. 1-58.
- QUICK, HERBERT. *Yellowstone Nights*. 1911. 345 pp.
- QUINN, VERNON. *Beautiful America*. 333 pp., illustrated. Frederick A. Stokes Co., New York City. 1923.
Yellowstone on pp. 215-229.
- ROLFE, MARY A. *Our National Parks. Book Two*, 1928. 329 pp., illustrated. Benj. H. Sanborn & Co., Chicago, New York, and Boston.
Yellowstone on pp. 243-297.
- RYDBERG, PER AXEL. *Catalogue of the flora of Montana and the Yellowstone National Park. Memoirs of the New York Botanical Garden*, vol. 1. 1900. 492 pp., map.

- SANDERS, H. F. History of Montana, vol. 1. 1913. 847 pp.
Yellowstone on pp. 650-684.
- SCHAUFFLER, R. H. Romantic America. 1913. 339 pp.
Yellowstone on pp. 134-160.
- SENN, NICHOLAS. Our national recreation parks. 1904. 147 pp., illustrated.
Yellowstone on pp. 17-92. Notes on fauna in addition to descriptive matter.
- SETON, ERNEST THOMPSON. Life histories of northern animals. 1909. Two quarto volumes, 1,267 pp., with 68 maps and 560 drawings.
Deals largely with Yellowstone mammals.
- Wild animals at home. 1913. 226 pp., 8 vol., with over 150 sketches and photographs.
In this Mr. Seton gives, for the first time, his personal adventures in studying wild animals, especially in the Yellowstone Park.
- The biography of a grizzly. 1903. 124 pp., illustrated. Published by The Century Co., N. Y.
- SKINNER, M. P. Birds of the Yellowstone. 1923. Illustrated. Price \$1.
- The Yellowstone Nature Book. 1924. 229 pp., illustrated. Price \$2.50.
- Bears of the Yellowstone. 1925. 151 pp., illustrated. Price \$2.50.
- The American antelope. 1923. 27 pp., illustrated. Price 30 cents.
- The Story of the Whitebar elk. 1923. Price 15 cents.
- SMITH, F. DUMONT. Book of a hundred bears. 1909. 233 pp., illustrated.
For sale by the Yellowstone Park Lodge Co.
- SMITH, WALLACE. On the Trail in Yellowstone. 1924. 105 pp., illustrated.
Published by G. P. Putnam's Sons.
- STODDARD, JOHN L. Lectures, vol. 10. Southern California, Grand Canyon of the Colorado River. Yellowstone National Park. 1911. 304 pp., illustrated.
Yellowstone on pp. 207-304.
- STRAHORN, C. A. Fifteen thousand miles by stage. 1911. 693 pp., illustrated.
Early days in Yellowstone, pp. 254-286.
- THONE, FRANK E. A. Trees and flowers of the Yellowstone National Park, 1923. 64 pp., illustrated. Price, 75 cents.
- TOMLINSON, EVERETT TITSWORTH. Four boys in the Yellowstone. 1906. 399 pp., illustrated.
- UNITED STATES GEOLOGICAL SURVEY. Monograph 32, part 2, Descriptive geology, petrography, and paleontology of the Yellowstone National Park. Out of print.
- Geologic Folio No. 30, containing topographic and geologic maps of the park and a description of the geology. Out of print.
- VINTON STALLO. John Colter, Discoverer of Yellowstone Park. 1926. An account of his 1807 exploration. Edw. Eberstadt, New York, publisher.
- WARREN, EDWARD R. The Beaver. No. 2. 177 pp., illustrated. Price, \$3. Williams & Wilkins, Baltimore, Md.
- The Beaver in Yellowstone Park. Notes on the Beaver in Estes Park, Colo. Roosevelt Wild Animal Annals. Syracuse University, October, 1926.
- WILEY, WILLIAM H. and SARAH K. The Yosemite, Alaska, and the Yellowstone. 1893. 230 pp., illustrated.
Yellowstone on pp. 205-230.
- WRIGHT, WILLIAM H. The Grizzly Bear. Scribner's. 1909. 274 pp., illustrated.
- The Black Bear. Scribner's. 1910. 127 pp., illustrated.

YARD, ROBERT STERLING. The Top of the Continent. 1917. 244 pp., illustrated. Yellowstone on pp. 63-86.

——— The Book of National Parks. Scribner's. 1926. 444 pp., 74 illustrations, 14 maps and diagrams. Yellowstone on pp. 202-228.

OTHER NATIONAL PARKS

Rules and Regulations similar to this containing information regarding the national parks listed below may be obtained free of charge by writing to the Director of the National Park Service, Washington, D. C.:

Acadia National Park.
Crater Lake National Park.
Glacier National Park.
Grand Canyon National Park.
Grand Teton National Park.
Hawaii National Park.
Hot Springs National Park.
Lassen Volcanic National Park.
Mesa Verde National Park.

Mount McKinley National Park.
Mount Rainier National Park.
Rocky Mountain National Park.
Sequoia and General Grant National
Parks.
Wind Cave National Park.
Yosemite National Park.
Zion and Bryce Canyon National
Parks.

NATIONAL MONUMENTS

Glimpses of Our National Monuments, a pamphlet containing brief descriptions of the national monuments administered by the Department of the Interior, is also available for free distribution. This contains 74 pages, including 34 illustrations.

AUTHORIZED RATES FOR PUBLIC UTILITIES, SEASON OF 1929

All rates of the authorized public utilities are approved by the Government. Therefore complaints regarding overcharges should be made to the superintendent. Employees of the hotels, lodges, and transportation lines are not Government employees but discourteous treatment by public-utility employees should be reported to the park administration.

YELLOWSTONE PARK HOTEL CO.

The Yellowstone Park Hotel Co. maintains four hotels in the park. These are located at Mammoth Hot Springs, the Upper Geyser Basin, the outlet of Yellowstone Lake, and the Grand Canyon of the Yellowstone.

The address of the hotel company is Yellowstone Park, Wyo., from June 15 to September 20, and Helena, Mont., thereafter. The authorized rates at the hotels are as follows:

RATES OF THE YELLOWSTONE PARK HOTEL CO.

HOTEL RATES

4½-day tours:

14 meals and 4 lodgings (in rooms without bath), American plan, on standard tour of Yellowstone Park by passengers of Yellowstone Park Transportation Co.....	\$29.00
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The 4½-day tour is planned on the basis of 14 meals and 4 nights' lodging. If the trip is so arranged that less than 14 meals are furnished, refund will be made by the hotel company. However, guests registering for rooms will be charged for meals served between the time of registering and the time of checking out, regardless of whether or not meals are actually eaten. All rates at the hotels are based upon the American-plan operation.

Board and lodging, American plan, regular accommodations (not including private bath), per day, per person.....	6.50
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American plan hotel rates per day, per person, providing for room with private bath, are:

- 1 person in a room, \$10 to \$11, according to location.
- 2 persons in 1 room, \$9 to \$10 each, according to location.
- 3 persons in 2 rooms with bath between, corner suite, \$10 each person.
- 3 persons in 2 rooms with bath between, inside suite, \$9 each person.
- 3 persons in 1 room with private bath, \$8.50 and \$9 per day, per person, according to location.
- 4 persons in 2 rooms, with bath between, \$8.50 to \$9, each, according to location.

Meals or lodging (room without bath), part of a day:

Lodging.....	\$2. 25
Breakfast.....	1. 25
Lunch.....	1. 50
Dinner.....	1. 50
Meals served in rooms, extra, each.....	. 50
(Children under 8 years of age, half of above rates.)	

BARBER SHOPS, BATHS, ETC.

Shave.....	. 25
Neck shave.....	. 10
Hair cutting (men).....	. 65
Women's hair cut, boy style.....	. 75
Straight bob.....	. 60
Shingle, back only.....	. 50
All other hair cuts for women.....	. 75
Shampoo (men), plain.....	. 50
Women's shampoo (plain bobbed hair).....	. 75-1. 00
Women's shampoo (long hair).....	1. 00-1. 50
Rinses.....	. 25-0. 75
Head massage.....	. 50
Scalp treatment.....	1. 00
Face massage (men).....	. 50
Face massage (men), with vibrator.....	. 75
Standard tonic.....	. 25
Face massage (women).....	1. 00-1. 50
Clay pack.....	1. 50
Manicure.....	. 75
Women's marcel.....	. 75-1. 00
Round curl.....	. 75
Finger wave.....	1. 00
Water wave.....	1. 00
Women's hair dressing, plain.....	. 50
Women's hair dressing, fancy.....	1. 00-2. 00
Bath.....	. 50
Shoe polish.....	. 15

GUIDES, HORSES, AND SPECIAL TRIPS

Saddle animals for riding trips of 1 day or less duration from all hotels
(rates do not include guide service):

Per full day, 8 hours.....	3. 50
Per half day, 4 hours.....	2. 50
Per hour.....	. 75

(Horses kept out over 8 hours will be charged for at hourly rates for each hour over the 8-hour period.)

Mounted guides for saddle-horse parties:

Per day of 8 hours.....	5. 00
Per half day of 4 hours.....	3. 00
Per hour.....	1. 00

Personally conducted saddle-horse trips escorted by mounted guide are available from the following hotels:

Canyon Hotel—

To Cascade Lake and return (8 miles)-----	\$2. 50
To Grebe Lake and return (12 miles)-----	3. 00
To Silver Cord Cascade and return (8 miles)-----	3. 00
To Sulphur Mountain and return (14 miles)-----	3. 00
To Seven Mile Hole and return (14 miles)-----	4. 00
To Devil's Ink Well and return (8 miles)-----	4. 00

Old Faithful Inn—

To Lone Star Geyser and return (7 miles)-----	2. 50
To Mallard Lake and return (8 miles)-----	3. 00
To Shoshone Lake and return (18 miles)-----	4. 00

Mammoth Hotel—

To summit of Mount Everts and return (10 miles)-----	4. 00
To summit of Mount Sepulcher and return (14 miles)-----	4. 00
Around Bunsen Peak to foot of Osprey Falls and return (12 miles)-----	4. 00
To point near Gardiner and return via old road (9 miles)-----	2. 50
Ranger Nature Trail (loop trip) (5 miles)-----	2. 00
Foot of Electric Peak and return—	
For 1 person-----	8. 50
For 2 or more persons, each-----	6. 00

NEWS STANDS

Guide books, periodicals, magazines, etc., at customary rates.

TELEGRAMS

From or to all points in the United States at Western Union rates, either hotels or lodges.

Messages exchanged between offices in the park at the rate of 30 cents for 10 words or less and 2½ cents for each additional word. This rate is used in computing charges on day letters and night letters.

TELEPHONE MESSAGES

Bell System long-distance service is available from or to all points in the United States and Canada, also points in Mexico, Cuba, England, Scotland, and Wales.

Bell System long distance is available at the following points within the park: Mammoth Telephone Office, Mammoth Information Bureau, Mammoth Hotel, Mammoth Lodge, Old Faithful Inn, Old Faithful Lodge, Old Faithful Ranger Station, Lake Hotel, Lake Lodge, Lake Ranger Station, Canyon Hotel, Canyon Lodge, Canyon Ranger Station, West Yellowstone Post Office, and West Yellowstone Ranger Station.

Standard Bell System rates between points in the park are as follows:

Station-to-station day rates

Canyon to Lake-----	\$0. 10
Canyon to Mammoth-----	. 20
Canyon to Old Faithful-----	. 25
Canyon to West Yellowstone-----	. 30
Lake to Canyon-----	. 10
Lake to Mammoth-----	. 30
Lake to Old Faithful-----	. 20

Lake to West Yellowstone.....	\$0. 30
Mammoth to Canyon.....	. 20
Mammoth to Lake.....	. 30
Mammoth to Old Faithful.....	. 35
Mammoth to West Yellowstone.....	. 30
Old Faithful to Canyon.....	. 25
Old Faithful to Lake.....	. 20
Old Faithful to Mammoth.....	. 35
Old Faithful to West Yellowstone.....	. 15
West Yellowstone to Canyon.....	. 30
West Yellowstone to Lake.....	. 30
West Yellowstone to Mammoth.....	. 30
West Yellowstone to Old Faithful.....	. 15

YELLOWSTONE PARK LODGE & CAMPS CO.

The Yellowstone Park Lodge & Camps Co. maintains six lodges in the park. They are located at Mammoth Hot Springs, Upper Geyser Basin, Yellowstone Lake, Grand Canyon of the Yellowstone, Eastern Entrance, and near Tower Falls. The address of the Lodge Company is Yellowstone Park, Wyo., from June 1 to September 30, and Livingston, Mont., thereafter. The authorized rates at the lodges are as follows:

RATES OF THE YELLOWSTONE PARK LODGE & CAMPS CO.

LODGE RATES

4½-day tours:

14 meals and 4 lodgings, American plan, on standard tour of the Yellowstone Park by passengers of Yellowstone Park Transportation Co..... \$20. 00

The 4½-day tour is planned on the basis of 14 meals and 4 nights' lodging. If the trip is so arranged that less than 14 meals are furnished, refund will be made by the camps company. However, guests registering for rooms will be charged for meals served between the time of registering and the time of checking out, regardless of whether or not meals are actually eaten. All lodge rates are based upon the American-plan operation.

Meals and lodging, American plan:

Per day.....	4. 50
Breakfast.....	1. 00
Lunch.....	1. 00
Dinner.....	1. 00
Lodging and breakfast.....	2. 50
Meals served in guests' sleeping tents, extra, each.....	. 25

(Children under 8, half of above rates; children in arms, free.)

Service at Sylvan Pass Lodge:

Breakfast.....	1. 00
Lunch.....	1. 50
Dinner.....	1. 00
Lodging.....	1. 50

(Children under 8, half of above rates; children in arms, free.)

HOUSEKEEPING TENTS IN PUBLIC AUTOMOBILE CAMP GROUNDS

Canvas and frame cabin occupied by 1 person, per day-----	\$0. 75
Canvas and frame cabin occupied by 2 or more persons, per day, per person-----	. 50

(Children under 8, half of above rates; children in arms, free.)

Tents or cabins are available, furnished with the following equipment:

Single tent or cabin, 1 double bedstead, 1 bed spring, 1 stove, 1 washstand, 1 table, 1 bench.

Double tent or cabin, 2 double bedsteads, 2 bed springs, 1 stove, 2 washstands, 2 tables, 2 benches.

Persons not having all their own camp equipment may rent the following items:

Standard-size mattress for 2 people, per day-----	. 25
Single size mattress for 1 person, per day-----	. 25
Blanket, per day-----	. 25
2 sheets, 2 pillows, 2 pillowcases, 2 hand towels, set, per day-----	. 40
Use of above set of linen, each additional day-----	. 25
Coffeepot, frying pan, each article, per day-----	. 05
Knife, fork, and spoon, set, per day-----	. 05
Cup and plate, set, per day-----	. 05
Sawed and split wood, per cubic foot-----	. 20
Lodging in fully equipped tent or cabin, 1 person, per day-----	1. 50
(Children under 8, half rate; children in arms free.)	

In the Mammoth Hot Springs, Old Faithful, Fishing Bridge (Yellowstone Lake), and West Thumb auto camps, cafeteria service is available, and near the Canyon Public Automobile Camp cafeteria service is also available. At Tower Falls auto camp grounds delicatessen service may be had. All service at these different places is at reasonable prices. Laundry tubs, hot and cold showers, and tub baths are available at Old Faithful auto camp grounds at reasonable prices.

BARBER SHOPS, BATHS, ETC.

Shave-----	\$0. 25
Neck shave-----	. 10
Hair cutting (men)-----	. 65
Women's hair cut, boy style-----	. 75
Straight bob-----	. 60
Shingle, back only-----	. 50
All other hair cuts for women-----	. 75
Shampoo (men), plain-----	. 50
Women's shampoo (plain bobbed hair)-----	. 75-1. 00
Women's shampoo (long hair)-----	1. 00-1. 50
Rinses-----	. 25- . 75
Head massage-----	. 50
Scalp treatment-----	1. 00
Face massage (men)-----	. 50
Face massage (men), with vibrator-----	. 75
Standard tonic-----	. 25
Face massage (women)-----	1. 00-1. 50
Clay pack-----	1. 50
Manicure-----	. 75
Women's marcel-----	. 75-1. 00

Round curl.....	\$0. 75
Finger wave.....	1. 00
Water wave.....	1. 00
Women's hair dressing, plain.....	. 50
Women's hair dressing, fancy.....	1. 00-2. 00
Bath.....	. 50
Swimming pool: Admission, suit, and towel.....	. 50
Children between ages 5 and 12 (less than 5 no charge).....	. 25
Shoe polish.....	. 15

GUIDES, HORSES, AND CONVEYANCES

Saddle animals for riding trips of 1 day or less duration from lodges
(rates do not include guide service):

Per full day, 8 hours.....	\$3. 50
Per half day, 4 hours.....	2. 50
Per hour.....	. 75

(Horses kept out over 8 hours will be charged for at hourly rates
for each hour over the 8-hour period.)

Mounted guides for saddle horse-parties:

Per day of 8 hours.....	5. 00
Per half day of 4 hours.....	3. 00
Per hour.....	1. 00

Personally conducted saddle-horse trips escorted by mounted guides are
available from the following lodges:

Canyon Lodge—

To Sulphur Mountain and return (10 miles).....	3. 00
To Crystal Lake and return (9 miles).....	3. 00
To Elk Park and return (9 miles).....	2. 00
To Point Sublime and return (6 miles).....	2. 50

Mammoth Lodge—

To summit of Mount Everts and return (10 miles).....	4. 00
To summit of Mount Sepulcher and return (14 miles).....	4. 00
To summit of Bunsen Peak and return (10 miles).....	4. 00
Around Bunsen Peak to foot of Osprey Falls and return (12 miles).....	4. 00
To point near Gardiner and return via old road (9 miles).....	2. 50
Ranger Nature Trail (loop trip) (5 miles).....	2. 00
To foot of Electric Peak and return—	
For 1 person.....	8. 50
For 2 or more persons, each.....	6. 00

Old Faithful Lodge—

To Mallard Lake and return (8 miles).....	3. 00
To Lone Star Geyser and return (7 miles).....	2. 50
To Shoshone Lake and return (18 miles).....	4. 00

Roosevelt Lodge—

To Garnet Hill and return (8 miles).....	3. 00
To Specimen Ridge and return (14 miles).....	5. 00
To Tower Falls and return (4 miles).....	1. 50
To Lost Lake and return (4 miles).....	3. 00

Fishing trips from all lodges:

All day, 8 hours.....	\$5. 00
Three-fourths day, 6 hours.....	4. 00
One-half day, 4 hours.....	3. 00

All-expense camping tours: The following rates for complete outfits for trip of 10 days or more, including the guides, packers, cooks, saddle animals, pack animals, canvas shelter, cooking utensils, and bedding necessary for the camping trip. The costs do not include provisions. These rates are quoted for trips of 10 days or more. Special arrangements may be made for trips of less than 10 days.

	Cost per day per person
1 person.....	\$27. 00
2 persons.....	17. 00
3 persons.....	14. 00
4 persons.....	13. 00
5 persons.....	12. 00
6 persons.....	11. 00
7 persons or more.....	10. 00

FISHING TACKLE**Outfit, consisting of rod, reel, line, and landing net:**

First day.....	\$0. 50
Each additional day.....	. 25

Charges may be made for broken rods or outfits lost. Flies and other fishing equipment are sold at reasonable prices, according to quality.

NEWS STANDS

Guide books, periodicals, magazines, etc., at customary rates.

TELEGRAMS

From or to all points in the United States at Western Union rates. Either hotels or lodges.

Messages exchanged between offices in the park at the rate of 25 cents for 10 words and 2 cents for each additional word. This rate is used in computing charges on day letters and night letters.

TELEPHONE MESSAGES

(See Bell System long-distance telephone rates, p. 76.)

ACCOMMODATIONS BEFORE AND AFTER SEASON

Meals and lodgings can be obtained from Mr. C. A. Hamilton at his Old Faithful and Lake stores as soon as park roads are negotiable in the spring and for about a month after the regular season closes in the fall. Also, gasoline and groceries may be procured at approved prices.

PHOTOGRAPHS OF THE PARK

Haynes Picture Shops (Inc.) (address, Yellowstone Park, Wyo., in summer, and Selby Avenue at Virginia, St. Paul, Minn., at any season) maintains picture shops at Mammoth Hot Springs, Old Faithful, Grand Canyon, Fishing Bridge, and Tower Falls, and sale

stands in various hotels and camps for sale of photographs of their own manufacture in all sizes and styles, including hand-painted enlargements, lantern slides, moving pictures, souvenir post cards, a complete line of photographic supplies and guide books; and have laboratories in the park for developing, printing, and enlarging photographs for travelers.

SCHEDULE OF RATES OF THE AUTHORIZED PHOTOGRAPHER

Haynes Guide Book, current edition (enlarged)-----	\$0.90 and \$1.50
Sepia photographs, 5 by 8 to 40 by 60-----	.75-25.00
Hand-painted pictures, 2 by 5½ to 40 by 60-----	.40-50.00
Black and white photographs, miniatures, sets of 12-----	.25
Black and white photographs, 4 by 5 to 16 by 21-----	.10-3.50
Lantern slides, hand painted, each, \$1.50; set of 100-----	125.00
Masterpieces album, 12 colored pictures-----	2.00
Treasures album, 20 colored pictures-----	1.25
Souvenir album, sepia rotogravure, many pictures-----	.25
Colorgraphs, set of 12 in full color-----	1.50
Color rotogravures de luxe, 8 by 9½-14 by 24-----	.35-2.00
Hand-painted transparencies, 7 by 10, \$9.25; 12 by 17-----	18.65
Souvenir playing cards, de luxe deck, 53 views-----	1.25
Souvenir playing cards, Old Faithful Backs, colored-----	1.00
Gem folders, 24 colored pictures-----	.25
Scenic gems of the Yellowstone, 24 pictures, 25 cents; set of 5-----	1.00
Souvenir folders, 18 views each, 15 cents; 2 for-----	.25
Souvenir post cards in color, 3 for 5 cents; per dozen-----	.20
Set of 100 souvenir post cards in color, per set-----	1.00
Set of 50 souvenir post cards in color, per set-----	.50
Frames, games, maps, paintings, sand souvenirs, books, albums, and other pictorial souvenirs, apparatus, and supplies at current prices.	
Developing:	
6 and 8 exposure roll films, 1¼ by 1¼ to 5 by 7-----	.15-.50
10 and 12 exposure roll films, 1½ by 2¼ to 4 by 5-----	.25-.45
12 exposure film packs, 1¼ by 2¾ to 5 by 7-----	.30-.65
Prints, glossy, ferrotyped (dull finish 1 cent each extra):	
1¼ by 1¼ to 2¼ by 2¼-----	.05½
2¼ by 3¼-----	.06
2½ by 4¼-----	.07
3½ by 3½-----	.07½
2¾ by 4¾ to 3¼ by 4¼-----	.08
3 by 5¼ to 3¼ by 5½-----	.09
4 by 5 to 4½ by 6½, 10 cents to-----	.15
5 by 7-----	.20
Repair service on apparatus and equipment, per hour-----	1.00
Roll film, film packs, cine film, cine library film, kodaks, cameras, cine kodaks, Filmo cameras, projectors, accessories, and supplies at current prices.	

STORES AND NEWS STANDS

At Mammoth Hot Springs, a general store is operated by Mr. George Whittaker, who also maintains a store where food supplies can be obtained by campers in the free auto camp. The Park Curio

Shop, Mammoth Hot Springs, operates a combined curio shop, coffee shop, and soda fountain, and at the free auto camp a combined lunch room and delicatessen.

At Old Faithful, Mr. C. A. Hamilton operates a general store, with store and delicatessen located in public auto camp for campers. At West Thumb and Lake (between Lake Hotel and Lake Lodge) general stores are also operated, with store at Fishing Bridge free auto camp.

At the Grand Canyon of the Yellowstone, near Canyon Junction, Mr. George Whittaker conducts the general store that serves the canyon district.

At Tower Falls a general store is maintained by Mr. J. E. Haynes. In all of the general stores, in addition to complete lines of groceries, clothing, and campers' supplies, are carried curios, souvenirs, films, photographs, post cards, tobacco, and smokers' supplies, etc.

In all the hotels and lodges there are news stands at which curios, souvenirs, newspapers, magazines, tobacco, and smokers' supplies, etc., are also available.

All store and news stand charges are reasonable and subject to control by the park superintendent. Stores are open before and after park season to serve auto campers, weather permitting. Before and after park season lodging and meals are available at Old Faithful and Lake stores.

TRANSPORTATION IN THE PARK

Under a franchise from the Department of the Interior, the Yellowstone Park Transportation Co. operates on the main park highways a line of specially built Lincoln touring cars and 11 passenger White automobiles. This line is under the strict regulation of the Government as to the type of service it renders to the public and the rates that it is permitted to charge for such service. It operates as a public utility, and may be compared to a street-car system in a city.

Each day during the tourist season, regardless of weather or volume of travel, this transportation line meets all incoming and outgoing trains at the various park gateways.

The address of the company is Yellowstone Park, Wyo., between June 15 and September 20; thereafter, Helena, Mont.

Four and one-half days represent the minimum time required for a sight-seeing tour of Yellowstone National Park. The tour can profitably be extended to a week, two weeks, or longer, giving time for recreation, fishing, mountain climbing, and other sports, and side trips to the scenic regions off the main roads. Stop-overs are encouraged. There is no additional transportation expense.

RATES OF YELLOWSTONE PARK TRANSPORTATION CO.

PARK TOUR

From any entrance, full park tour, and back to the same entrance, or to any other entrance..... \$25.00

NOTE.—The \$25 transportation rate for the standard tours, which include Cody, Gallatin, Bozeman, and Lander gateways, applies only in connection with authorized paid rail tickets of Chicago, Burlington & Quincy Railway, Chicago, Milwaukee, St. Paul & Pacific Railway, Northern Pacific Railway, and Chicago & North Western Railway. Via Cody in either direction, Chicago, Burlington & Quincy Railway passengers must hold paid railroad tickets to or from Cody, Wyo.; otherwise extra auto fare from Cody to eastern entrance of the park, or vice versa, is \$2.25. Via Gallatin, Chicago, Milwaukee, St. Paul & Pacific Railway passengers must hold paid rail tickets to or from Gallatin Gateway, Mont.; otherwise extra auto fare Gallatin Gateway to west entrance to park, West Yellowstone, or vice versa, is \$4. Via Bozeman, Northern Pacific Railway passengers must hold paid rail tickets to or from Bozeman, Mont.; otherwise extra auto fare from Bozeman to west entrance to the park, West Yellowstone, or vice versa, is \$5. Via Lander, Chicago & North Western Railway passengers must hold paid rail tickets from east of O'Neill, Nebr.; otherwise extra auto fare from Lander to south entrance of park, or vice versa, is \$16.50.

On regular park tour, cars will be routed over top of Mount Washburn, each passenger, extra..... 2.00

On regular park tour, passengers holding in Gardiner out Cody (G-C), or in Gardiner out West Yellowstone (G-W) tickets may make round trip from Grand Canyon to Roosevelt Lodge, going via Dunraven Pass and returning via Mammoth Hot Springs and Norris, each passenger, extra..... 5.00

On regular park tour, passengers leaving Old Faithful may continue same day from Lake to Canyon, provided accommodations are available at Canyon, each passenger, extra..... 5.00

From Old Faithful to foot of Jackson Lake in Teton Mountain region (Jackson Hole) and return to Lake Hotel and Lodge, each passenger, extra..... 12.50

SIDE TRIPS

From Mammoth:

Terraces and Buffalo Corral..... 1.00

Gardiner and return..... 1.50

Around Bunsen Peak, via Golden Gate and Osprey Falls..... 2.50

Roosevelt Lodge (Tower Falls Junction)—

One way..... 3.50

Round trip..... 7.00

From Old Faithful:

Hurry trips to geysers..... 1.00

Black Sand Basin..... 1.00

Lone Star Geyser..... 1.50

Jackson Lake and Teton Mountains and return to Yellowstone Lake, for holders of regular park transportation tickets, each passenger. 12.50

From Canyon:

Top of Mount Washburn and return.....	\$4. 00
Either side of canyon.....	1. 00

From Roosevelt Lodge (minimum 5 fares):

Soda Butte and return.....	5. 00
Cooke City and return.....	14. 00

LOCAL FARES

(On busses operating on regular schedule)

Gardiner to:

Mammoth.....	. 75
Norris.....	4. 75
West Yellowstone.....	10. 25
Old Faithful.....	10. 25
Canyon (via Norris).....	6. 75

West Yellowstone to:

Old Faithful.....	6. 00
Mammoth.....	9. 50
Gardiner.....	10. 25

Old Faithful to:

West Yellowstone.....	6. 00
Thumb.....	4. 00
Lake.....	7. 00
Canyon (via Lake, overnight stop at Lake).....	10. 00

NOTE.—Passengers leaving Old Faithful may continue same day to Canyon, provided accommodations are available at Canyon, each passenger, extra, \$5.

Lake to:

Pahaska or Sylvan Pass Lodge.....	6. 00
Pahaska or Sylvan Pass Lodge and return.....	10. 00
Cody.....	12. 50
Cody and return (overnight stop at Cody).....	22. 50
Canyon.....	3. 00
Mammoth (via Roosevelt Lodge).....	11. 00

Cody to:

Pahaska or Sylvan Pass Lodge.....	6. 50
Pahaska or Sylvan Pass Lodge and return.....	12. 50
Lake.....	12. 50
Lake and return (overnight stop at Lake).....	22. 50
Canyon.....	15. 50

Mammoth to:

Gardiner.....	. 75
Norris.....	4. 00
West Yellowstone.....	9. 50
Old Faithful.....	10. 00
Canyon (via Norris).....	6. 00

Pahaska or Sylvan Pass Lodge to:

Cody.....	6. 50
Cody and return (overnight stop at Cody).....	12. 50
Lake.....	6. 00
Lake and return (overnight stop at Lake).....	10. 00
Canyon.....	9. 00
Mammoth.....	17. 50

Canyon to:

Lake.....	\$3. 00
Pahaska or Sylvan Pass Lodge.....	9. 00
Cody.....	15. 50
West Yellowstone (via Norris).....	7. 50
Old Faithful.....	8. 00
Tower Falls.....	4. 00
Mammoth (via Roosevelt Lodge).....	8. 00
Mammoth (via Norris).....	6. 00
Gardiner (via Roosevelt Lodge).....	8. 75
Gardiner (via Norris).....	6. 75

Roosevelt Lodge to:

Mammoth.....	3. 50
Gardiner.....	4. 25

Moran, Wyo., to:

Yellowstone Lake.....	10. 00
Canyon.....	13. 00
Old Faithful (via Thumb, Lake, and Thumb).....	10. 50
West Yellowstone (via Lake, Canyon, and Norris).....	21. 25
Gardiner (via Lake, Canyon, Roosevelt Lodge, and Mammoth).....	21. 75
Cody (via Thumb and Lake).....	22. 25

Bozeman or Gallatin Gateway to:

West Yellowstone, one way.....	10. 00
Round trip.....	17. 50

RATES FOR CHILDREN

Children under 12 years of age, one-half rates for all tours and trips scheduled above.

BAGGAGE-TRUNKS

Transportation of trunks between Gardiner and Mammoth Hot Springs in each direction, each trunk.....	\$1. 00
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Liability of transportation company for loss of trunk in park is limited to \$100, but trunks may be insured for larger amounts.

SPECIAL AUTOMOBILE SERVICE

Special touring cars for complete park tours (minimum 5 fares), at \$25 plus \$25 per day, from the time car is taken at park entrance until release of car at exit gateway, railway terminal, or station in the park.

Six-passenger touring cars for short trips in the vicinity of the various hotels and lodges, when available for such service, maximum charge per hour.....	6. 00
Storage, per day.....	. 50

GASOLINE, OIL, ETC.

Gasoline, oil, garage repair service, parts and accessories of various kinds are available at prices subject to control by the park superintendent.

BOAT SERVICE ON YELLOWSTONE LAKE

The Yellowstone Park Boat Co., under contract with the department, maintains and operates a speed boat, power boats, and row-boats on Yellowstone Lake. The service on this lake is not a part

of the regular transportation of the park, and an extra charge is made, as shown in the schedule below. No power boats are permitted to be operated on this lake except those that have passed the inspection of the United States Steamboat Inspection Service of the Department of Commerce.

RATES OF THE YELLOWSTONE PARK BOAT CO.

SPEED BOAT

Thumb of Lake to Yellowstone Lake Hotel and Lodge, per passenger.....	\$2. 50
Southeast arm and return, per passenger (minimum 10 fares).....	3. 00
Half-hour trips, per passenger.....	1. 00

POWER BOATS

Excursions to southeast arm of lake, per individual (this trip not made for less than \$40).....	2. 00
16-foot and 18-foot launches:	
Per day (price includes use of fishing tackle).....	20. 00
Per hour (price includes use of fishing tackle).....	3. 50

ROWBOATS

Per day, 8 hours.....	2. 50
Per hour.....	. 50

Rowboats can be secured at dock, near Lake Hotel, and from general store, near dock at West Thumb.

ROWBOATS EQUIPPED WITH MOTORS

Per day, 8 hours.....	\$10. 00
Per hour.....	2. 50

Boat rental and services of motor boat and attendants' time commence at time of leaving the dock until return; or if boat is engaged in advance, charges start from time for which boat is engaged.

FISHING TACKLE

Outfit, consisting of rod, reel, and landing net, per day.....	\$0. 50
--	---------

Same, free to each individual hiring launches. Charges may be made for broken rods or lost outfit at regular price.

Flies and fishing accessories sold at regular prices, according to quality.

BATHHOUSE, UPPER GEYSER BASIN

(Henry P. Brothers, proprietor)

Swimming pool, including use of bathing suit.....	\$0. 50
Private pool, one person, with or without bathing suit.....	1. 00
Two or more persons using same private pool, charge for second and each additional person, with or without bathing suit.....	. 50
Tub bath.....	. 50
Children between ages 5 and 12 (less than 5, no charge).....	. 25
Boy and Girl Scouts when accompanied by scoutmaster.....	. 25

Stockings, each pair-----	\$0. 25
Caps-----	. 25
Caps, higher grade-----	. 50
Shoes-----	1. 00
Use of inflated floats-----	. 25

AUTOMOBILE CAMP GROUND

Showers-----	. 25
Laundry tubs, per hour or fraction thereof-----	. 25
Electric irons, per hour or fraction thereof-----	. 25

PERSONALLY CONDUCTED CAMPING PARTIES

DUDE (TOURIST) RANCHES

The trail of the summer vacationist has deviated during the last decade from the old familiar courses and now opens into a newly exploited region of the West, the new summer playground of America, which embraces vast areas in Wyoming and Montana. A veritable invasion of eastern tourists has followed the opening of this beautiful country which offers the vacationist, known in the parlance of men of the range as "dude," a solution for the summer vacation problem.

Located in the mountainous regions of these two far Western States, on the last frontier, are the "dude" ranches, the quarters of the summer vacationist. These ranches are established in the mouths of canyons, among foothills, or in clearings in the forest.

The dude ranches are not pretentious places, but are rustic and unique. Composed of little groups of cabins, corrals, and bunk houses, all of which are familiar to the native westerner, they are established as permanent lodges. In addition to the regular ranch work arrangements are made to care for a number of visitors each summer, and in this way they serve to perpetuate the spirit, the glamour, and the romance of the old West. Their popularity began in 1904 when Howard, Willis, and Alden Eaton established the now famous Eaton brothers "Dude Ranch" at Wolf, Wyo.

Many of these ranches are situated in territory within easy access to Yellowstone Park. Entering Wyoming from the east, the first of them are found near Sheridan and Buffalo. North of Sheridan, in the Birney, Mont., ranch district, are many more. As the visitor journeys westward toward the park many more dude ranches are discovered, some of them near Cody, Wyo., the eastern entrance to the Yellowstone. Within a day's motor trip from the southern entrance of the Yellowstone, near the new Grand Teton National Park, are the Dubois, Wyo., dude ranches and those of the famous Jackson Hole.

North of Yellowstone Park and west as far as Glacier National Park are scores of dude ranches, all within a day's motor trip of both

parks. Southern Montana is the location of most of these, and Big Timber, Livingston, and Bozeman are the tourist centers of the State. Other ranches are located near Rosebud and the Crow and Cheyenne Indian Reservations in southeastern Montana.

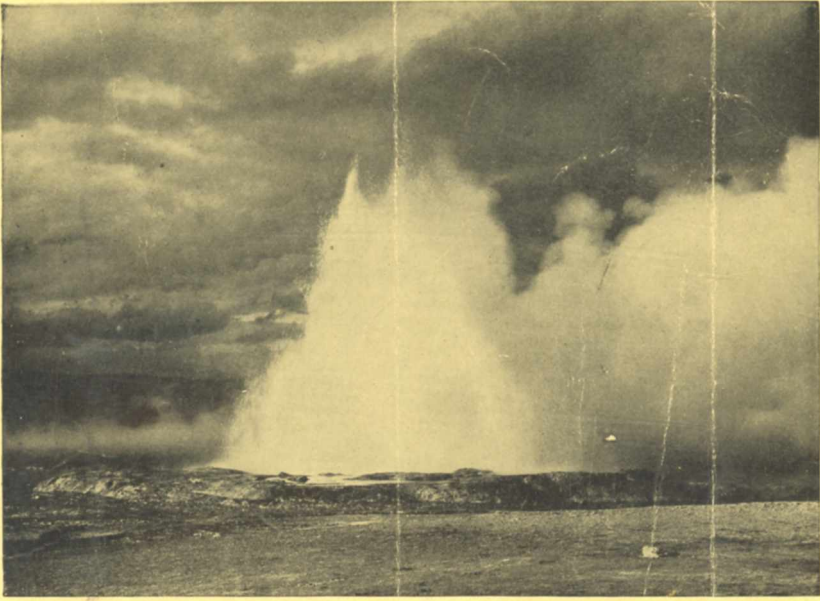
Many have traveled the world seeking adventure and romance in far-away places, but in this historic old cattle country they have found a freedom and naturalness in the great outdoors that is unequaled.

CAMPING PARTIES WITH LICENSED GUIDES

Several villages near the park boundaries are headquarters for guides and outfitters with whom arrangements can be made for saddle-horse and pack-train trips through the park.

The names and addresses of these guides and outfitters and their tourist rates can be obtained by addressing the Superintendent of Yellowstone National Park, Yellowstone Park, Wyo.

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Haynes Photograph.

Fountain Geyser
LOWER GEYSER BASIN



Terrace Falls



Union Falls

Photographs by Col. C. H. Birdseye, U. S. Geological Survey.

IN THE FALLS RIVER SECTION



Haynes Photograph.

OLD FAITHFUL GEYSER, YELLOWSTONE NATIONAL PARK