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YELLOWSTONE NATIONAL PARK

(Editor's Note: This paper is the script prepared to accompany a color movie on Yellowstone National Park. It was given by Edmund B. Rogers, Superintendent of the Park in conjunction with the picture at the December 1945 meeting of the Westerners. A number of editorial changes to effect continuity have been injected.)

Nestled among the ranges of the Rocky Mountains in the northwest corner of Wyoming, with its northern border in Montana and its western border in Montana and Idaho, lies the Yellowstone National Park. This almost indescribable wonderland, with its spectacular thermal attractions set in a background of unsurpassable beauty, was the first unit of the great system of national parks to be created by the United States Government.

Known first as "Colter's Hell" because of its discovery by John Colter in 1807-8, the area was neglected for many years until farseeing and public spirited citizens of Montana noted its beauty and started a movement to preserve the region in its virgin state. Created by an act of Congress on March 1, 1872, the Yellowstone National Park covers today an area of 3,472 square miles or approximately 2,222,000 acres—a veritable wonderland larger than the states of Rhode Island and Delaware combined.

This study is an endeavor to take the reader on a "word tour" of this marvel of nature and to give him a mental picture of the geysers, hot springs, flowers, birds, and the great wildlife that make up the Yellowstone National Park of today. Here the names of a glorious past--part of the American tradition--merge with the realities of nature to form a cohesive picture of national development. John Colter, the fur trapper and explorer; Dr. Ferdinand V. Hayden, the geologist and geographer, the pioneer miners; the organized military expeditions; Chief Joseph and his harried band of retreating Nez Perce tribesmen are but a few who make up the inheritance which the National Park Service preserves and protects for the American of today and the world of tomorrow.

Seven highways approach the five entrances of Yellowstone National Park, four of which are blocked during the winter months by the deep snows of the high plateau country. Only the north entrance at Gardiner, Montana, is usable throughout the entire year. Through its huge stone arch, dedicated by President Theodore Roosevelt in 1903, have passed thousands of enthusiastic people who have enjoyed and been benefited by this great area.

It is evident immediately on entering the park that it differs from the surrounding area. Pronghorns (antelope) may be seen lying among the sagebrush calmly chewing their cud. On progressing farther into the Park it is not unusual to see moose, elk, deer, and buffalo grazing over the hillsides and in the meadows. Coyotes and bears are very common, while timber wolves, mountain lions, and mountain sheep may be seen occasionally. Although it may be dangerous it is not difficult to get close-ups in photographing many of these animals.

Ranging on the northern side of the Park during the summer months, the Pronghorns concentrate in a small area near Gardiner, Montana, during the winter. They are seldom

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seen out in the high forested areas as they are environmentally adapted to the plains. In contrast to the deer, elk, and moose, their horns are formed as a hollow covering over a bony core. This covering is shed and grows anew each year. Like domesticated cattle both sexes have horns. Being very fleet of foot, these animals can run at speeds in excess of 35 miles per hour. Most reliable estimates indicate that there are about 800 antelope in Yellowstone.

From the north entrance leading southward up Gardiner Canyon the highway parallels the Gardiner River, a tributary of the Yellowstone. With its fast flowing stream, lined with huge cottonwoods and evergreens, the canyon displays a vast spectacle of geological phenomena. Its floor rises more than 1000 feet in a distance of 5.3 miles. Although it is geologically a young canyon, the erosive action of its stream has been excessive and many pinnacles stand in bold relief against the horizon.

On top of these rocky crags the ospreys (fish hawks) often build their nests. One of these pinnacles, known as Eagle Nest Rock, has been occupied every year for more than fifty years. Very graceful in its action, the osprey has a wingspread of about five feet. Its breast and belly feathers are exceptionally light in color, making it readily distinguishable from the eagle. It is common in Yellowstone during the summer months, especially in the vicinity of Lake Yellowstone and Grand Canyon. Migratory in nature, it usually arrives in the park in March and leaves in October.

The community of Mammoth Hot Springs, which derives its name from the hot spring terraces in its immediate vicinity, is the headquarters of Yellowstone National Park. From here the superintendent administers the various activities of the entire Park. Located here also are the headquarters museum, the chief ranger's office, and other administrative units. The first buildings constructed in Yellowstone Park were built in this area.

MAMMOTH HOT SPRING TERRACES

The name is derived not so much from the large size of the springs as from the enormous terraces which these springs have built and are building. They range from very small ones, almost microscopic in size, to the great terrace levels which carry back to the top of Terrace Mountain. Wherever the hot mineral-laden waters come out to the surface they deposit travertine. These waters provide an environment suitable for the growth of millions of small microscopic plants known as algae. When these plants grow in sufficient numbers they provide an abundance of soft pastel shades where the hot springs are active. The color pattern around spring vents is most fascinating, changing from light yellows and pinks in the hot waters near the vent to greens and dark browns in the cooler waters. When springs become dormant the plants die but beauty persists, for although the rock surface may take on somber grays the symmetry of form still remains, and the beauty of an old terrace against a cloud-laden sky is difficult to surpass. Liberty Cap, which is 37 feet high and 20 feet in diameter, stands at the base of the Mammoth Hot Spring Terraces. It represents the eroded remnant of what was once a much larger block of travertine. From this conspicuous landmark walking trips are conducted daily during the Park season. Devil's Thumb was formed in a similar manner to Liberty Cap. The waters flowing down on either side of it come from Palette Spring. Blue Spring is today the largest and most active hot spring on the terraces. Water from it flows out to and down over Jupiter Terrace, probably the largest hot spring terrace in the world.

As the climb is made from Mammoth south toward Golden Gate and Kingman Pass the highway passes through the Hoodoos, an area comprising an enormous landslide of great blocks of travertine, which have been spilled down a mountain side in a helter-skelter manner. These great blocks of travertine,

deposited thousands of years ago in much the same way as the Mammoth Hot Springs Terraces, have broken from the white cliffs of the mountain above and tumbled down the steep slopes toward Glen Creek. From Kingman Pass, at an elevation of 7,256 feet, the view back down Glen Creek past the Golden Gate and across to Mt. Everts in the distance is one of inspiration. To the southwest the southern end of the Gallatin Range looms up. Trilobite Peak, Mt. Holmes, Dome Mountain, and Antler Peak can be seen in the distance. Although many of the peaks in this range attain elevations in excess of 10,000 feet, not all of them are visible from this vantage point. However, Bannock and Quadrant Mountains may be seen on a clear day.

Moose are not an uncommon sight in this region. They are most abundant, however, in the Yellowstone Lake area and at the headwaters of the Yellowstone River. Many may also be seen between Norris Geyser Basin and Swan Lake Flat. There are approximately 600 of these Shiras moose in the Park. Moose antlers, borne by the bull only and shed annually in December or January, are palm-like sheaths of bone with protruding tines. Full growth is usually attained in July, prior to which time the antlers are referred to as being in the velvet state.

There is in the Park a great variety of springs and lakes. Apollinaris Spring along the roadside between Kingman Pass and Norris Geyser Basin, provides a drink of cold, highly-flavored soda water. Lemonade Lake, a small basin of yellow-green water found at the base of Roaring Mountain, gets its name from its color rather than from any lemonade taste.

In the same vicinity is Obsidian Cliff, a solid mass of black natural volcanic glass, which for centuries has been the raw material source for Indian artisans. Artifacts such as spear points, arrowheads, hide scrapers, stone knives

and other implements have been skillfully designed and executed from this material. On top of the ledge are many evidences of the obsidian having been chipped and worked. This is the principal exposure of obsidian, although it is commonly found in a variety of colors in most sections of the Park.

During the summer months Yellowstone has an abundance of bird life. Of the many interesting species that come here to nest and rear their young the Sandhill Crane, with its rich brown body, powder-blue neck and bright red cap, is one of the most beautiful. It is now greatly diminished in numbers from the thousands that once winged along the flyways of the North American continent. The nesting habits of these birds are comparatively simple. They usually build adjacent to streams and lakes, preferably in marshy areas. The nests consist of little more than a few reeds, rushes or cattails sufficient to support the eggs and keep them above the level of the water. The hatching season is late May and early June. When just hatched the young Sandhill Cranes are little more than soft fluffy balls of brown-colored down. Within a few days these youngsters become very active and with the adults move from the marshes into the edge of the bordering timber.

NORRIS GEYSER BASIN

Norris Geyser Basin is the first major thermal area visited after leaving Mammoth. Within the basin are thirty geysers, twenty-five of which are active. The entire region is barren, and a constant agitation of boiling, cannonading, spouting of steam and spraying of water presents the appearance of a veritable inferno. None of the geysers in this basin is highly spectacular, no eruption being more than seventy-five feet in height. Colloidal Pool, a large hot spring in which are suspended immense quantities of fine silica and kaolin, is in a constant state of violent boiling due to the release of steam from within the earth's crust. Little Whirligig Geyser with its rust red basin, so colored by the iron deposits from

the water, erupts spasmodically. The height to which it plays varies, twenty feet being its maximum. An active phase for this geyser may last for several hours.

The action of the hot gases, hot water vapors and water from geysers is eating away the hillside in front of the Norris Museum. The most outstanding geysers on this hillside are Ledge and Valentine. Valentine is young, having become active in 1902. Its eruptions, like those of Ledge, are from 60 to 75 feet in height, and last from $1\frac{1}{2}$ to 2 hours, playing at intervals varying from 18 to 72 hours. Ledge erupts several times each day. Adjacent to the basin is Porcelain Hill, which derives its name from the dense deposit of geyserite that so closely resembles porcelain in lustre and texture. Steam condensing into white plumes is emitted under great pressure from vents dotting the hillside. Small springs deposit geyserite and a colorful mineral known as orpiment. This mineral pigment is unusual as most of the color present in connection with thermal action elsewhere is due to the microscopic plant life which grows so abundantly in the tepid and hot waters.

Along the banks of the Gibbon River between Norris and Madison Junction are the Chocolate Pots, so called because they resemble boiling pots with chocolate spilling down over the sides. The colors are primarily due to the iron minerals deposited by the springs although a heavy growth of dark colored algae is found in the warm waters that flow from them down into the Gibbon River. Midstream in the Gibbon is also a small spouter which erupts constantly. Another of the springs in this area has small bursts of steam coming up through a cone in the water creating the effect of a flickering flame.

Gibbon Meadows is a favorite haunt of the elk, known to the Indians as Wapiti. Yellowstone harbors about 12,000 of these animals, which are distributed during the summer over the entire Park. During the winter they concentrate in the

lower valleys on the northern side. The elk is primarily a grazing animal and is most apt to be seen feeding in the high mountain meadows in the early morning and late evening. Bull elk often measure 60 inches in height at the shoulder and weigh as much as 1,000 pounds. The male, only, grows antlers, which are shed annually. Born in late May or early June, the calves are spotted at birth and remain so during their first few months. This marking affords a natural camouflage in the brush and thickets. Peculiarly, the cow elk when nursing her calf will stand in midstream if a river is available.

National Park Mountain, so named because of its adjacency to the site of the last camp in this area made by the Washburn-Langford-Doane Party of 1870, is located near the junction of the Gibbon and Firehole Rivers. These streams unite to form the Madison River, one of the three forks which in Montana converge into the Missouri River. It was here that the national park idea was conceived, Cornelius Hedges having first made the suggestion. From his idea has grown the great national park system of today. Near the site of the Washburn-Langford-Doane camp is the Madison Junction Museum, where guests can secure information concerning the human history of the Park. In front of the Museum there is mounted in a boulder of granite a bronze plaque in memory of Stephen Tyng Mather, the first Director of the National Park Service.

Firehole Falls, which has a drop of about forty feet, is a scene which appeals to all travelers along the Firehole Canyon road. It is but one of the scenic gems that are found along the Firehole River between Madison and Old Faithful. This turbulent river cuts through the rough, steep-walled Firehole Canyon where churning white water contrasts with the dark green of the forest fringe and the vari-colored canyon walls. Such streams as this are tempting to the fisherman, the Firehole River being among the most popular trout fishing streams in the park. Yellowstone National

Park enjoys the reputation of being one of the finest places in the world for good trout fishing. Although July is the best fishing month the season extends from May 30 to October 15. The daily limit per person is fifteen pounds of dressed fish (tails and heads attached), plus one fish, and not more than a total of ten fish. A few posted areas in the park restrict the limit to ten pounds and five fish. No license is required. Even an amateur in the height of the season has no trouble in angling a limit on brook, Loch Leven, cut-throat or rainbow trout. Mackinaw and Montana grayling trout are also common in some of the waters. Fishing with dry fly is a favorite sport.

LOWER GEYSER BASIN

Lower Geyser Basin, with more than 600 springs and geysers, is the first large thermal area encountered in traveling up the Firehole River and is the most extensive geyser basin in the park. Among the less spectacular but by no means the least appealing of its thermal features is the now dormant Fountain Geyser with its soft pastel colors resulting from the algal growth in the ribbons of water that flow down over the geyserite. Fountain PaintPot (Politician's Paradise¹) is an exceptionally fascinating phenomenon consisting of a giant caldron of clay, opal, and quartz. The viscous muds are in a constant state of agitation caused by the escape of hot gases. Innumerable fantastic forms—sometimes a rose, a calla lily, or maybe a doughnut—occur in this boiling mass. The clay varies in color from pure white to dark pinks and owes its origin to the decomposition of the rhyolitic lava by the hot gases and water which have been active for centuries. The paint pots are more amusing than beautiful and vary from small, fast mud-spitting vents to large spring-like emissions which are constantly pushing outward undulations of concentric circles.

1. Editor's idea

Most thermal areas have beautiful pools which vary greatly in color. In this basin Surprise Pool, with its deep blue-green water and scalloped sinter border, is known to be thirty-five feet deep. The water in it is super-heated to a temperature of about 94° C. The boiling point for pure water under the barometric pressure existent at this spring is 92.87° C. Surprise Pool is in constant agitation, but around the edges where contact is made with the cool surface sinter it boils only intermittently.

Great Fountain, one of the better known geysers, is considered by many the most spectacular. Eruptions last from 45 to 75 minutes at intervals of 8 to 15 hours. It plays to a height of 90 to 100 feet, higher than any other in this basin.

Geysers are readily classified into two types, namely, fountain and nozzle. The fountain geysers have no appreciable cone above the ground level and the play comes from a large vent which may resemble a pool. Great Fountain is a splendid example of this type. Nozzle geysers are so-called because they have built up a cone of geyserite through which eruption takes place. These are numerous in the Upper Geyser Basin, Grotto Geyser, perhaps, being the most famous.

MIDWAY GEYSER BASIN

One of the most unusual attractions in the Midway Geyser Basin is the crater of Excelsior Geyser, which blew itself to pieces July 28, 1890, and has not erupted since. Today there is left only a large caldron of deep blue, boiling water. Grand Prismatic Spring is one of the most colorful jewels in the Yellowstone collection of thermal phenomena. Overflowing from a lake of deep blue, crystal-clear water, this large hot spring spills down over the terrace on which the lake occurs. With the bright pastel bands of algal growth, the cloud-spattered sky, the symmetry of the terraces and the rainbow colors reflected in the steam, this spot is

one never to be forgotten. Beautiful Turquoise Pool, also in this basin, reflects and refracts the light from minute particles in suspension in its waters. This peculiar phenomenon accounts for its turquoise blue color.

BISCUIT BASIN

Biscuit Basin, which is adjacent to the Upper Geyser Basin, is bisected by the Firehole and the Little Firehole Rivers, which meander through flower-laden meadows, favorite feeding grounds in early morning and late evening for wapiti and deer. Avoca Spring, one of the most attractive in this small basin, has a cone of geyserite built up around it. Its crystal clear boiling waters reflect the deep blue of the sky, contrasting with the white geyserite and the many colored algal border formed in the cooler waters. Shell Spring, although at times dry, boils violently with bursts of steam that come up through the clear waters like great silver globes that enlarge as they near the surface. Due to the higher temperatures of the water there is an absence of all algal growth. Artemesia Geyser belongs to the fountain type and consists of a large vent and beautiful deep pool. Its eruptions play to a height of 35 feet.

UPPER GEYSER BASIN

One of the major geysers of the park and certainly one of the more beautiful and spectacular to watch is the Riverside Geyser of the Upper Geyser Basin. Its eruptions, occurring about every nine hours, last at least fifteen minutes and during its play water jets are thrown at an angle out across the Firehole River, sometimes reaching a height of one hundred feet. The band of spectra, or rainbow colors, known as the geyser bow, is always present in the mist of the geyser's eruption when the sun is shining brightly.

Unique in form, almost reaching the fantastic, is the cone of the Grotto Geyser. Just why the geyserite which has

built up this odd-shaped cone was deposited in such a manner has never been satisfactorily explained. Being near the roadside it is one of the most photographed objects in the entire Park.

Castle Geyser cone is mute evidence of the fact that the geysers of Yellowstone are thousands of years old. As the geyserite has been deposited from the waters, the agents of erosion--water, wind, frost, and, of late years, man--have been wearing away the cone, but the deposition has more than kept pace with the disintegration. Castle Geyser may erupt sporadically, spouting at short intervals to heights of some twenty-five feet, or may remain dormant for 24 to 30 hours and then burst forth with a magnificent play lasting some 30 minutes, throwing its column of water a height of 100 feet.

The eruptions of Giant Geyser are reputed to be the highest of any in the world. Its play often lasts more than $1\frac{1}{2}$ hours with a maximum height of 200 feet. During this period of play between 750,000 and 1,000,000 gallons of boiling water are expelled. Intervals between eruptions are irregular, varying from eight days to as much as three months. Prior to the knowledge of white men this geyser blew off about one-half of its cone. As it begins to erupt Rainbow Geyser has an unusual pulsating wave action which is followed by violent bursts of steam coming up through the center of Rainbow Pool, throwing great showers of water into the air. Often these jets exceed 100 feet in height. Being pure white they contrast well with the surrounding dark background. This geyser for years was nothing but a beautiful pool entirely lacking in its eruptive action..

The most publicized feature of the entire National Park system is Old Faithful. Its height of play varies from 120 to 170 feet at intervals of about 66 minutes. Approximately ten thousand gallons of water are emitted during each eruption of two and a half minutes. Daily

throughout the travel season hiking parties start their trips from Old Faithful. These parties are guided by ranger naturalists who impart information concerning the phenomena seen along the way.

Beehive Geyser erupts probably no oftener than once a year and as a result has been seen in eruption by very few people. It derives its name from its cone, which resembles a beehive in shape. Its play lasts but 2 to 8 minutes and the water jets are thrown to heights of 200 feet. Veteran geyser fans consider Grand Geyser the grandest of all such phenomena in the world. Its interval between eruptions during the past year, varied from 14 hours to 73 hours; in consequence, it is difficult to predict eruption. However, through careful observation by naturalists it has been possible to inform the people of the approximate time so that thousands have had the good fortune to see it in action. It may throw its water jets to heights of 200 feet from 6 to 14 times during an eruption period which may last from 20 to 45 minutes. Geyser fans often spend the night in blankets or sleeping bags near the geyser in the event of a nocturnal eruption.

Beyond the Upper Geyser Basin at West Thumb on the shores of Lake Yellowstone are a number of interesting thermal attractions. Small cliffs of old geyserite deposits facing Thumb Bay give evidence of a long period of thermal activity.

Lake Shore Geyser is submerged by the lake throughout June and July and rarely erupts during this period. When its orifice is not submerged in the lake it comes into action about every 35 minutes. Its play lasts from two to ten minutes and the water jets reach a maximum height of 25 feet. Fishing Cone, a hot spring mound nearby, has been publicized as a unique phenomenon. Waters inside the cone are boiling hot, while those of the adjacent lake are very cold. It was here that the famed western entrepreneur, William Blackmore, on the expedition of 1871, caught fish and with no

more than a swing of the fishing line cooked them in the boiling cone. Doubtless others have tried this same service but such action is now prohibited. Near here is also another region where the hot gases, hot water and steam have decomposed the rocks into a fine clay, saturated with water, creating some very interesting paint pots. These are even more colorful than those of the Lower Geyser Basin.

Many miles of the Park highways cut through dense stands of Lodgepole Pine. Occasionally narrow roadways lead off into secluded spots where are located small but beautiful lakes. These lakes offer security and solitude to many species of nesting water birds. The rarest is the Trumpeter Swan, there being only 211 of them in the United States according to the last official census in 1941. Several pairs nest in Yellowstone Park and some of these are successful each year in rearing their young. Often nest sites are selected on points protruding out into the lake which affords them some protection from intruders. The Trumpeter Swan is one of the largest and the most graceful North American water fowl. An adult bird has a wing spread in excess of eight feet, a length of sixty inches from bill tip to tail, and may weigh as much as 35 pounds. The young swans, known as cygnets, are usually gray in color during the first year, after which they acquire white plumage. This is not always true, however, for sometimes pure white cygnets are hatched. These birds commonly feed in the lake bottoms in waters up to three feet in depth so their long necks serve a very useful function. While feeding they often tip up as do mallard ducks. Yellowstone National Park, Red Rock Lakes, and adjacent areas are today the only places in the United States where these birds are found.

Hemmed in between the Continental Divide on the west and the Absaroka Range on the east--the latter consisting of a number of pyramid-like peaks, many of which are over 10,000 feet high and named in honor of some of the park's early explorers such as Langford, Doane, Stevenson and Colter--Lake Yellowstone is the largest body of water on the North Ameri-

can continent, at a comparable altitude, that of 7,731 feet. The lake has a surface area of approximately 139 square miles, maximum depths of 300 feet, and a shore line of more than 100 miles. It is a fisherman's paradise and each year thousands of native black-spotted trout are taken from its waters.

Molly Islands, at the extreme southeast arm of the lake, are the nesting place for numerous gulls, pelicans, terns, and cormorants. How long the two Molly Islands have been used by these birds as a nesting ground is not known, but records indicate that their use by the Double-Crested **Cormorant** is comparatively recent and the number of these birds seems to be increasing annually. Young cormorants when hatched are nude and very ugly. They are helpless and remain so for several weeks. The cormorant is the only bird nesting on the island that makes any effort at building a nest. They utilize sticks, feathers, and other debris found along the beach and on the islands for building materials. Hatching takes place throughout most of the summer, and in late July it is not unusual to see young just hatched and others ready to fly. The cormorant is uniformly dark in color. With legs set well toward the back of its body, it can easily dive for food. It is primarily a fish-eating bird and can readily catch those fish which are not on the alert and in a sufficiently good state of health to make an escape. The adults are frequently seen shuttling back and forth from their fishing waters to the islands with food for their young.

Young pelicans remain nude and helpless for some time after they are hatched. Exposure to the bright sunlight burns them to a bright pink. There are usually more than 200 of them reared annually on these islands.

Young seagulls are balls of gray down when hatched and their color blends well with the gray rocks of the islands. They are on their feet and running about shortly after leaving the eggs. The adult birds have a beautiful white and steel-gray plumage. Seagulls are scavengers and will eat

anything at any time. How they can visit such dirty places and yet look so clean is a mystery. The Black-Capped Caspian Tern are the busiest of all the island birds as they protect their nesting grounds from intruders. Their black caps, orange-red bills, and sharp-tipped wings readily identify them from their neighbors.

North of Lake Yellowstone near Canyon Junction is Mud Volcano. This violently-boiling caldron of mud, highly charged with sulphur, is kept in constant agitation by escaping steam. Dragon's Mouth, a vaulted grotto immediately adjacent to Mud Volcano, constantly emits a deep pulsating rumble, followed immediately by a surge of clear water and steam thrown out with violent force from the cavernous opening.

On the small wayside lakes are occasionally seen hundreds of Northern Phalarope. These small sandpiper-like birds are not indigenous to the Park nor do they nest here, but are migrants that use the Park lakes in spring and fall as stopovers and feeding grounds. They are equally at home wading, swimming and flying. Their flights are swift and in unison. They are probably the only birds that apparently have complete group control as they dart, dive and turn, much as if they were featuring a flight performance.

Made famous through print and the canvas the Grand Canyon of the Yellowstone is best seen from a position on its rim known as Artist Point. The view of the canyon and the Lower Falls from this point is inspiring. Although the Lower Falls is a mile away its roar can be heard very distinctly. This canyon, from which the entire park takes its name, is from 800 to 1200 feet deep, with its width varying from a few hundred feet to several thousand. Its walls are highly-colored with soft pastel shades caused primarily by the minerals present in the decomposed and disintegrating rhyolite lava through which the canyon has been carved. Throughout past ages the still continuing thermal

activity has decomposed the rock, making it easier for the river to create such a canyon. The Upper Falls of the Yellowstone, located at the head of the Grand Canyon, drops 109 feet. One-fourth of a mile down stream is the Lower Falls which drops 308 feet into the Grand Canyon and is one of the great inspirational sights in the entire world. No trail leads to the immediate vicinity of the Lower Falls but with the use of binoculars it is possible to see the shafts of water as they break over and feather out into fine spray.

From Canyon to Tower Falls the highway leads over Dunraven Pass, named for the Earl of Dunraven, and around the shoulder of Mount Washburn, so-called in honor of Henry Dana Washburn, who headed the 1870 expedition into the Park. The entire mountain side for miles is a blanket of vari-colored flowers. The shooting star, buckwheat, knotweed, cinquefoil, Jacobs Ladder, and a large variety of other species grow in abundance. The buckwheat with its cream-colored flowers borders the roadside and blooms profusely in the open meadows. Indian Paint Brush, the state flower of Wyoming, is found in Yellowstone in a number of species varying in color from pale yellows to the deepest of reds. The goldenrod is at its best in August. It is then that whole hillsides turn a bright golden yellow from the lavish blossoming of this plant. The little harebell or blue bell of Scotland is found blooming from the lowest river valley to the high peaks from late May through October, while the senecio adds its orange-yellow color to the pattern of the flower blanket. The wild geranium blooms in large masses on moist hillsides. Two species of this plant are common, the red, and a white called cranesbill. Shrubby Cinquefoil with its bright yellow flowers blooms from early spring until late fall. It is readily recognized as a member of the rose family by its five petals and its many stamens and pistils. The Dogtooth violet, which is not a violet at all but a bright yellow flower belonging to the lily family, blooms from early spring to mid-July.

Mount Washburn, a vantage point from which much of the Park can be seen, is 10,317 feet high. A roadway leads over its summit. The Rocky Mountain Bighorn Sheep frequent the high alpine meadows of this mountain and on its slopes the lambs are born in late May and early June. Travelers going over Mount Washburn are certain to see these animals if they watch closely for them on the crags and high meadows. About fifty of the approximately 300 sheep spend the summer months in this alpine area. Often they are mistaken for goats because the ewe has a spike-like horn which tends to make her resemble a domestic goat. The rams have huge curled horns from which the name Rocky Mountain Bighorn Sheep is derived.

The American buffalo or bison have for countless ages been at home in the valleys and on the plateaus of Yellowstone. Today roaming at large in the more remote sections of the park are some 1,000 or more of these animals. Only during the winter months do they come to the lower valleys on the northern side. Once numbering millions there are today but a few thousand head in the entire United States. Bison are the largest of all animals in the Park, the bulls often weighing more than one ton.

The northern side of the Park has always been one favored by the Rocky Mountain Mule deer which are seen most frequently between Tower Junction and Mammoth. The term, Mule Deer, is probably derived from the fact that these animals have large mule-like ears. Does are antlerless while the bucks shed their antlers each year sometime between December and May. There are at present about 700 of these animals in the Park.

Perhaps because of their boldness and friendliness the bears are the most widely-publicized and consequently the best known animals in Yellowstone. They are of two breeds, the Grizzly and the Black. A full-grown Grizzly bear measures 8 to 9 feet and weighs as much as 600 pounds, while the Black

is 5 to 5½ feet in length and weighs about 250 pounds. Although friendly, these animals may become highly sensitive and ferocious if tormented or alarmed. Bears are omniverous and feed mainly on berries, roots, honey, grass, insects, reptiles and small animals. From mid-October to mid-April is their hibernation period, spent wherever protection against the elements can be found. Cubs are born in January while the sow bear is in hibernation. The Black bear is arboreal in its habits while the Grizzly, except as a cub, does not climb trees. There are today in the Park about 450 Blacks and 200 Grizzlies.

Bears, while a valuable part of Yellowstone National Park, have, unfortunately, raised a problem of major importance to the Park staff. An otherwise doting parent who would not permit her young Johnny or Susie to pat the next-door neighbor's dog will, without hesitation, place her offspring upon the back of a 250-pound Black bear (or even a Grizzly) in order to snap a picture for the folks back home. The reasoning behind this dangerous and thoroughly indefensible action can be traced to the sentimental attachment of humans for the toy Teddy-bear. In a moment of desperation following one such incident I once publicly stated that I would cheerfully wring the neck of the person who started the Teddy-bear concept. One of my audience took me literally and sent the following description of the origin of the apparently world-wide sentimental attachment for bears.

Mark Sullivan in Our Times has given an account of the origin of the Teddy Bear:

On November 10, 1902, Roosevelt went on a bear hunt in Mississippi. While he was in camp near Smedes, Miss., a newspaper dispatch described him as refusing to shoot a small bear that had been brought into camp for him to kill. The cartoonist of the Washington POST, Clifford K. Berryman, pictured the incident. For one reason or another,

whimsical or symbolic, the public saw in the bear episode a quality that it pleased to associate with Roosevelt's personality. The "Teddy-bear", beginning with Berryman's original cartoon, was repeated thousands of times and printed literally thousands of millions of times; in countless variations, pictorial and verbal, prose and verse; on the stage and in political debate; in satire or in humorous friendliness. Toy-makers took advantage of its vogue; it became more common in the hands of children than the woolly lamb. For Republican conventions, and meetings associated with Roosevelt, the "Teddy-bear" became the standard decoration, more in evidence than the eagle and only less usual than the Stars and Stripes. (Vol. II, p. 445.)