

REPORT

THE SUPERINTENDENT

YELLOWSTONE NATIONAL PARK

THE YEAR 1872.



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LETTER

FROM

THE SECRETARY OF THE INTERIOR,

ACCOMPANYING

A report of the superintendent of the Yellowstone National Park for the year 1872.

FEBRUARY 4, 1873.—Ordered to lie on the table and be printed.

DEPARTMENT OF THE INTERIOR,
Washington, D. C., February 3, 1873.

SIR: I have the honor to transmit herewith, for the information of Congress, a copy of the report for the year 1872 of N. P. Langford, esq., superintendent of the Yellowstone National Park.

I am, sir, very respectfully, your obedient servant,
C. DELANO,
Secretary.

Hon. SCHUYLER COLFAX,
*Vice-President of the United States and
President of the Senate.*

REPORT OF THE SUPERINTENDENT OF THE YELLOWSTONE NATIONAL PARK FOR THE YEAR 1872.

On the 20th day of May last, I received from the Department of the Interior the following letter of appointment as the superintendent of the Yellowstone National Park:

DEPARTMENT OF THE INTERIOR,
Washington, D. C., May 10, 1872.

Sir: Congress, by an act approved March 1, 1872, has set apart a tract of land near the head-waters of the Yellowstone River, in the Territories of Montana and Wyoming, as a public park or pleasure-ground "for the benefit and enjoyment of the people." The reservation so set apart is to be known as the "Yellowstone National Park," and is placed under exclusive control of the Secretary of the Interior, and you are hereby appointed superintendent of the same, to act as such, and to carry out the provisions of the act of Congress, under such instructions as you may receive from time to time from the Department. It is not the desire of the Department that any attempt shall be made to beautify or adorn this reservation, but merely to preserve from injury or spoliation the timber, mineral deposits, and various curiosities of that region, so far as possible, in their natural condition.

As Congress has not provided any appropriation to carry out the purposes of the act, your appointment must be without pay until such time as an appropriation is made for that purpose. You are at liberty to apply any money, which may be received from

leases to carrying out the object of the act of Congress, keeping account of the same, and making report thereof to the Department.

You will forward also from time to time, as you may deem for the best interests of the service, reports of the condition of the park, and such suggestions relative to its management and care as your experience may dictate. So soon as regulations for the care and management of the park are prepared, they will be forwarded to you.

Very respectfully, your obedient servant,

B. R. COWEN,
Acting Secretary.

Hon. N. P. LANGFORD,
Saint Paul, Minnesota.

On the 25th of the same month, in response to my application therefor, more specific instructions were forwarded to me, and, in pursuance to the recommendations therein set forth, I immediately repaired to Fort Hall, near Snake River, in the Territory of Idaho, and there united with that part of Dr. F. V. Hayden's geological survey which, under the immediate direction of Mr. James Stevenson, his assistant, was charged with the exploration of the valley of Snake River to its junction with Henry's Fork, and thence along that stream to the head-waters of the Madison, at or near its union with the Fire Hole River, where, at the Lower Geyser Basin, it expected to unite with the main portion of the survey, which, under the charge of Dr. Hayden, was approaching the same point from the north. On our way thither we deflected from the main route, and visited the Three Tetons, so long known as the great landmarks of that portion of the country. With much difficulty the ascent of the loftiest of these singular mountains was effected by Mr. Stevenson and myself. The general topography of the country was corrected in many important particulars, and much needful information respecting its adaptation to utilitarian purposes obtained, to which, but for its connection with improvements which have an important bearing upon the interests of the park, as they will be fully presented by Mr. Stevenson in his report, I should scarcely allude.

The park is at present accessible only by means of saddle and pack trains, a mode of travel attended with many privations and inconveniences. As it is likely speedily to become an object of general interest, both at home and abroad, some safer and more convenient and expeditious mode of communication is desirable. A few years only can elapse before it will be reached by railroads; but until then it must be accommodated with good wagon-roads, or remain unvisited except by the few who are willing to endure the privation and exposure incident to horseback travel. The access to it from the south, by way of Snake River, is favorable to the cheap construction of good wagon-roads. The visitor can now approach the Geyser Basin with a wagon to a point fifty miles above the junction of Henry's Fork with Snake River. Thence to the basin is about eighty miles. The route passes over or through the main range of the Rocky Mountains, by either the Henry or Targee Pass, either one of which needs but little improvement to convert it into a remarkably fine road. For the entire distance, although in the midst of the mountains, such is the favorable configuration of the country that a road can be built without a grade to exceed fifty feet to the mile.

Another route, commencing at the same point on Henry's Fork, and following up the Middle Fork, is entirely practicable. The only obstacle is the obstruction offered by fallen timber for a portion of the distance, and this not a serious one. This route would be shorter than the other, and lead more directly to the Geyser Basin and Yellowstone Lake.

From the Geyser Basin to the Yellowstone Lake is a distance of about twenty miles. The country is rolling, and for a part of the distance filled with fallen timber. To make the circuit from the southwest estuary of the lake to the point ten miles below its foot, it would be necessary to approach both extremes by roads from the Fire Hole Basin. From the point where these roads intersect below the lake, a road should be constructed to Tower Falls, and thence directly to the Hot Springs on Gardiner's River, and in as near a direct line as possible from that point to the northern boundary of the park. A continuation of this road for fifteen miles from the boundary to the first settlements above Boteller's ranch would furnish all road improvements necessary to approach the park, either by way of Snake River or by the way of the Yellowstone.

Another road that is entirely practicable should be constructed from Gardiner River Springs, in a direct line across the park to the Lower Geyser Basin, a distance not to exceed forty-five miles.

These roads, when completed, would enable the visitor to reach all the great points of interest by carriage, and at any of these points horses would be provided for interior exploration. The opening of these roads would insure the early erection of large and commodious public houses at Mammoth Springs, Yellowstone Falls, Yellowstone Lake, and the Upper and Lower Geyser Basins.

Frequent application has been made to me during the past season by responsible persons for authority to improve these several routes by the construction of toll-roads, but I have invariably, with a single unimportant exception, (in which the applicants have not availed themselves of the privileges allowed,) declined to grant these applications, believing that inasmuch as this territory had been set aside and dedicated as a national park, the Government would prefer to construct its own roads, and make them free to all who wished to visit this wonderful region. It is, however, of the highest importance that roads should be constructed at an early day for the accommodation of tourists.

I am satisfied, from the numerous applications I have received for leases of property for hotel purposes at the leading points of interest, that if the park were rendered accessible by good wagon-roads, it would immediately prove a source of considerable revenue to the Government, and in a few years would largely repay any expenditures needful for its present improvement. Leases have been refused to all, simply because it was deemed necessary, first, to know, after fuller exploration of the park, what might be the intention of Congress respecting it. With a liberal appropriation now for roads, and a few other needed improvements, it is impossible to foresee what will be the future of this remarkable aggregation of wonders.

Leases have been sought for the construction of saw-mills in parts of the property where timber could be spared. The manufacture of lumber will prove a lucrative employment whenever the erection of public houses shall be commenced. In fact, with roads such as I have recommended, the business might be extended to reach the settlements of Montana, in most of which lumber commands a high price. A large portion of the park is covered with a heavy growth of pine timber, fit only for manufacture into lumber.

There is no land in the park suitable for agricultural purposes. Bunch-grass of a good quality, affording feed for horses, grows there in abundance, and will always abound in sufficient quantity for the use of tourists. No mines have yet been discovered, and it is the general opinion of

prospectors with whom I have conversed, that none will be found within the limits of the park.

A few months before the passage of the act of March 1, 1872, creating the park, several persons had located upon land at some of the points of greatest interest, with a view to establish a squatter's right of pre-emption, and they have since made application for such pre-emption of property, which embraces some of the chief attractions of the locality. Certainly their settlement upon these lands established no right of pre-emption or purchase in their favor. Any expenditures they may have made were at their own risk, especially if made after the passage of the act. A joint application of this kind from two of these persons (appended hereunto and marked A) has been referred to me by the Department. With no desire to impair any supposed rights these applicants may have, and with no personal objection to them as tenants, I still feel it a duty to recommend that their application be refused. To grant it would be to establish a precedent which would open the door for scores of similar applications, under which exhausting process the park would soon lose all its distinctive features of nationality. No sales of property within its boundaries should be made to any one; but whenever, in good faith, improvements have been made, with a view to future purchase or occupancy, such improvements should either be purchased of the persons who made them, or received in payment of the premises occupied by them, for such term as may, on full consideration, seem just and equitable. The realty of the land should be held alone by the Government, and be subject to such rules and regulations as may, from time to time, be adopted by the Department of the Interior. Several improvements for convenience of visitors had been made before the act of dedication was passed. These should be acquired by the Government, by making adequate compensation to the persons by whom they were erected, and these persons, if it should be their choice, should have a preference, upon equal terms, over other applicants for the rental of the premises they have improved.

The wild game of all kinds with which the park abounds should be protected by law, and all hunting, trapping, and fishing within its boundaries, except for purposes of recreation by visitors and tourists, or for use by actual residents of the park, should be prohibited under severe penalties. Laws prohibiting the cutting of timber, except in such localities as may be prescribed by the superintendent, should be adopted.

It is especially recommended that a law be passed, punishing, by fine and imprisonment, all persons who leave any fire they may have made, for convenience or otherwise, unextinguished. Nearly all extensive conflagrations of timber in the mountains may be directly traced to negligence in extinguishing camp-fires. In the timber regions, these fires are generally kindled against stumps and dry trunks of trees, by which, unless carefully extinguished, they often, after many days, communicate with the forest, and spread over immense tracts, destroying large quantities of valuable timber. Nothing less than a stringent law punishing negligence and carelessness, can save the extensive pine timber fields of the park from destruction.

As connected with this subject of legislation I would also recommend that the park be attached to Gallatin County, Montana, for judicial purposes, and that the laws of Montana be enforced within its boundaries. In order to make this recommendation effectual I would respectfully suggest that all that portion of the park not included in the boundaries

of Montana, but which is now in Wyoming, be added to Montana. This will embrace nearly the entire park.

The reason for such annexation is apparent, when it is considered that the park is only accessible from Montana. It is impossible to enter it from Wyoming. Attempts to scale the vast ridge of mountains on the eastern and southern borders have been made by several expeditions across the continent, commencing with that of Wilson G. Hunt, the chief of Astor's overland expedition in the year 1811. As late as 1833 the indomitable Captain Bonneville was thwarted in a similar effort, and after devising various modes of escape from the mountain labyrinth in which he was lost, he determined to make one more effort to ascend the range. Selecting one of the highest peaks, in company with one of his men, Washington Irving says:

After much toil he reached the summit of a lofty cliff, but it was only to behold gigantic peaks rising all around and towering far into the snowy regions of the atmosphere. He soon found that he had undertaken a tremendous task; but the pride of man is never more obstinate than when climbing mountains. The ascent was so steep and rugged that he and his companion were frequently obliged to clamber on hands and knees, with their guns slung upon their backs. Frequently, exhausted with fatigue and dripping with perspiration, they threw themselves upon the snow and took handfuls of it to allay their parching thirst. At one place they even stripped off their coats and hung them upon the bushes, and thus lightly clad, proceeded to scramble over these eternal snows. As they ascended still higher there were cool breezes that refreshed and braced them, and springing with new ardor to their task, they at length attained the summit.

As late as 1860 Captain Reynolds, foiled in repeated efforts to cross this barrier, was obliged to make a *détour* of four or five hundred miles, to reach a point on the head-waters of the Yellowstone not fifty miles distant from his camp. While camped at the southeastern base of this formidable range of mountains, Captain Reynolds (Senate Ex. Doc. No. 77, Fortieth Congress, first session) wrote:

To our front and upon the right, the mountains towered above us to the height of from three thousand to five thousand feet, in the shape of bold, craggy peaks of basaltic formation, their summits crowned with glistening snow. It was my original desire to go from the head of Wind River to the head of the Yellowstone, keeping on the Atlantic slope, thence down the Yellowstone, passing the lake and across by the Gallatin to the Three Forks of the Missouri. Bridger said at the outset that this would be impossible, and that it would be necessary to pass over to the head-waters of the Columbia and back again to the Yellowstone. I had not previously believed that crossing the main crest twice would be more easily accomplished than the transit over what was in effect only a spur, but the view from our present camp settled the question adversely to my opinion at once. Directly across our route lies a basaltic ridge, rising not less than 5,000 feet above us, its walls apparently vertical, with no visible pass or even cañon. On the opposite side of this are the head-waters of the Yellowstone. Bridger remarked triumphantly and forcibly to me upon reaching this spot, "I told you you could not go through. A bird can't fly over that without taking a supply of grub along." I had no reply to offer, and mentally conceded the accuracy of the information of the "old man of the mountains."

As this portion of Wyoming Territory is thus entirely separated from the settled portions, which can only be reached by more than one thousand miles of travel, by way of Montana, Idaho, and Utah, and as there is not the most remote probability of any settlement in Wyoming in this region, except within the boundaries of the park, the annexation of the park to Montana for judicial purposes is an absolute necessity. It is not improbable that occasion may often render the services of the United States marshal necessary to eject defaulting or troublesome tenants. In such cases it would be impracticable to send a thousand miles for that officer, when, by the act of annexation, one could be obtained within a hundred. Aside from the delay which would thus be avoided, when haste might be really necessary, the expense would be so

greatly diminished as of itself to furnish a conclusive argument in favor of including the park within the boundaries of Montana. For further information upon this subject I respectfully refer to Washington Irving's "Astoria" and "Bonneville's Adventures," and to Captain Reynolds's official report.

The park can be visited any time between the last of April and the first of November, but it appears to the best advantage during the months of July, August, and September. Then the weather is warm and pleasant, storms rarely occur, and the forests, plains, and foot-hills are in full verdure. Tourists desirous of reaching the park by the most picturesque route will proceed by railroad to Corinne, Utah, where they can purchase their outfits for the trip cheaper and to better advantage than at any advanced point. The difference between a long and tedious stage-ride to Helena, and a ride on horseback from Corinne to Taylor's Bridge, is decidedly in favor of the latter, both as regards comfort and opportunities for observation. So much of the outfit as relates to food, groceries, and cooking utensils, can be advantageously purchased at the stores in the vicinity of Taylor's Bridge, to which point, and on to Market Lake, the route lies over the main route to Montana.

From Market Lake to the park the country is wild and unsettled, and all provisions must necessarily be transported by pack-trains. Following the road from Market Lake to the ford on Henry's Fork of Snake River, a distance of thirty miles, the traveler from that point has nothing to guide him but a faint bridle-path. While passing over this part of the route, he will have many fine views of the Tetons, the great mountain landmarks of this region. Ascending Henry's Fork a distance of seventy miles, he will arrive at the frontier cabin of Gilman Sautelle and Levi Wurtz, on the shore of Henry's Lake, in which the fork takes its rise. In Messrs. Sautelle and Wurtz he will find men who, with all the better qualities of sagacious and expert mountaineers, unite fine moral natures and rare culture. Perfectly familiar with the entire region, these gentlemen will give the traveler all needful information as to his future journey of thirty-five miles to the Lower Geyser Basin, the first of the interesting localities in the park. In this basin there are many objects of rare interest. The geysers, though comparatively small, are very wonderful in the eyes of the visitor who first beholds them. So, also, are the hot springs; but they are merely a foreshadowing of the greater wonders of the Upper Geyser Basin, which is ten miles farther up the Fire Hole River.

The ride between the two basins is full of interest. The Upper Basin is the location of all the great geysers of the park yet discovered. No one has ever remained long enough in it to be able to detail with accuracy the number and size of all these wonderful water-spouts.

There are at least two thousand hot springs, large and small, in this basin, and of this number probably two hundred are geysers. The whole basin is enveloped in steam, and, seen at a distance, is like the approach to a cluster of manufactories. The geysers project water with terrific force, and in fabulous quantities, and in every conceivable form, to heights varying from 20 to 250 feet. These, seen in the rays of a mid-day sun, or in the beams of a full moon, are inexpressibly grand. Unlike any other scenery in the world, they amaze the beholder by their magnitude and novelty.

It is fifteen miles from this basin to Yellowstone Lake, over a path running through a pine forest, greatly obstructed the entire distance by fallen timber. Several beautiful cascades in the Fire Hole River may be visited on this part of the route. The lake is nearly 8,000 feet

above the ocean. It is twenty-five miles in length, embosomed amid mountains, gemmed with green islands, unique in form, and surrounded on all sides by hot springs of great variety, number, and beauty. Jets of steam may be seen issuing from the hot springs, from the islands, even from the bosom of the lake itself. Some of the loftiest and most inaccessible mountain-ridges on the continent lift their snow-clad summits in the immediate vicinity. The scenery is colossal and full of savage grandeur.

Following the river from the foot of the lake for the distance of nine miles, the visitor reaches the locality of Sulphur Mountain, the Mud Geyser, the Mud Volcano, and the Blowing Cavern, all objects of separate interest, and presenting novelties of rare and curious character.

Ten miles farther down the river are the two great cataracts, and the Grand Cañon, of the Yellowstone, perhaps the most stupendous elements of scenery in the park. The upper fall is 115 feet in height; the lower, which plunges directly into the cañon, is 350 feet, and the cañon itself, varying from one to three thousand feet in depth, is forty miles in length, and for the whole distance presents to the eye the most wonderful chasm in the world. Jets of hot vapor issue from its sides, and color them with the most brilliant colors of nature. From its profound depths stars are visible in the day-time. Lieutenant Doane, who, in 1870, succeeded in reaching the bottom of the cañon, at a point where the walls are nearly 3,000 feet in height, in his official report (Senate Executive Document, No. 51, Forty-first Congress, third session) says: "It was about 3 o'clock p.m., and stars could be distinctly seen, so much of the sun-light was cut off from entering the chasm."

About eighteen miles farther, and at a point of one mile divergence from the cañon, the beautiful fall of Tower Creek, with its grotesque surroundings, meets the eye; and, twenty-five miles below this point, the most wonderful hot springs of Gardiner's River, with all their variety of beauty and novelty, assert their claims to be considered the most remarkable of the curiosities of the park.

Thus, in a circuit of perhaps ninety miles, the greatest attractions of the park may be seen, and, at the close of the tour, the visitor is within seventy-five miles, over a good road, of Fort Ellis, and the beautiful town of Bozeman, in Montana Territory.

It is impossible, in this report, to convey the faintest idea of the grandeur of the mountain and river scenery everywhere present on this ride. We venture to say that there is not in the world, within the same limit, so many wonderful freaks of physical geography, so much to amaze and delight the beholder.

The trip thus finished through the park, the traveler, at any time before the middle of August, may fitly complete it by proceeding from Bozeman to Helena, through the beautiful valleys of the Gallatin and the Upper Missouri, thence by coach through a highly picturesque country one hundred and forty miles to Fort Benton, where, in a fine river-steamer, he may complete the trip by a sail of six or seven days, of two thousand miles down the Missouri, to Omaha, or to the junction of the Northern Pacific Railroad, whence he may reach the sea-board by rail.

I regard the explorations of this region as but just commenced. New wonders are continually presenting themselves. Jets of steam as yet unvisited are seen in all directions while passing through the park, many of which indicate the location of very extensive groups of hot springs. Columbus of vapor, apparently 500 feet in height, seen by Lieutenant Doane and myself on my first visit in 1870, while on one of our mountain expeditions, have not as yet been visited. Mr. Stevenson

during the past year discovered, near the head of Snake River, a basin which he believed, from casual observation, to contain nearly as many springs and geysers as the Lower Geyser Basin on the Fire Hole.

A party of tourists from Bozeman also discovered a similar basin between the Mammoth Springs at Gardiner's River and the Fire Hole Basin. The whole country is full of interest, and presents to tourists a rare opportunity for exploration, and to scientific men a wonderful field of investigation.

The destructive and reproductive agencies at work in all this region are not the least marvelous of its phenomena. The two years which have elapsed since the first discoveries in this region have wrought marked changes. In that period old geysers have ceased to act, and new ones have been produced; small geysers have increased in size, while large ones have decreased in volume. The same may be said of the springs. Many that were clear two years ago are now muddy caldrons, their contents boiled down to thick paste. The mud volcano, which on my first visit was in active operation, had entirely disappeared, and when Professor Hayden visited the spot the following year, its only remains were hillocks of mud and a shapeless hole thrice the former size of the crater. Large pine trees, 125 feet high, which grew near the edge of the crater in 1870, had been completely engulfed by it at the time of its destruction, before the summer of 1871.

The reproductive power of the waters of the Mammoth Springs at Gardiner's River is very wonderful. This is the only group of calcareous springs yet discovered in the park. All the others are siliceous. The different pools formed by water of these springs in its descent of the mountain, the frozen cascades, the corrugated borders, all most exquisitely and delicately formed of lime deposit, may, if broken up for specimens, or worn out by age, or abandoned by the falling water, all be speedily restored to their beauty by exposing for a few days the injured parts to the action of the waters.

The whole hill-side may by this process be improved and made to assume any form, at the pleasure of the most fantastic fancy. During the past summer little ornaments of wire, baskets, and other objects, wound with cloth, have by suspension in these springs, for a period of eight or ten days, been taken therefrom most beautifully incrustated with a coating of crystallized lime, pure as alabaster, of half an inch in thickness. At any point, by penetrating the crusted surface made by the flowing of these springs, a vapor bath is easily obtained.

I cannot close this report without returning my thanks to Colonel Baker, commandant at Fort Ellis, and to Captain Putnam, commandant at Fort Hall, for their kindness in furnishing camp equipage and guns for myself and my assistant, and for many other attentions; to Professor Hayden, for transportation and for unnumbered personal kindnesses; and to Captain Stevenson and the members of the United States geological survey, for the assistance rendered by them upon all occasions, and to the Union Pacific and Central Pacific Railroad Companies for the courtesy of free passes for myself and assistant. Their liberality will not soon be forgotten. My assistant, Mr. Charles L. Spencer, will also accept this public tender of my thanks for the able services he rendered on a trip which was both protracted and toilsome, and afforded him no other recompense for his assistance than an opportunity to see the wonders of the park.

I desire, also, to add my testimony to that of Dr. Hayden, in praise of the accuracy and artistic skill with which that accomplished artist, Thomas Moran, has depicted the grandeur, both in general appearance

and coloring, of the Grand Cañon of the Yellowstone. By some who have seen this picture its coloring has been criticised, because they could not realize that such a remarkable natural combination of colors was possible. But in this respect the painter's tints cannot equal the original. Mr. Mōran has but approached it, simply for the reason that the coloring of nature is more brilliant than painting can be. The picture is in no degree exaggerated. It is the work of a very accomplished artist, and reflects the highest credit upon his skill and accuracy. All who have seen both the cañon and the painting will readily agree that in grandeur, in coloring, in the number of its steam-jets, and in its general effect, it is not overdrawn. But this is only one of the wonders of that great region of marvels. Could all be portrayed with the same faithfulness, and made to adorn the walls of our Capitol, how greatly would they exceed in grandeur and vastness our ordinary art decorations.

Nothing has been, nothing can be said, to magnify the wonders of this national pleasuring-ground. It is all and more than all that it has been represented. In the catalogue of earthly wonders it is the greatest, and must ever remain so. It confers a distinctive character upon our country, greater than that of Niagara, Yosemite, or Mammoth Cave, though each of these is, in itself, without parallel. But here, the grandest, most wonderful, and most unique elements of nature are combined, seemingly to produce upon the most stupendous scale an exhibition unlike any other upon the globe. It should be sustained. Our Government, having adopted it, should foster it and render it accessible to the people of all lands, who in future time will come in crowds to visit it.

Very respectfully, your obedient servant,

N. P. LANGFORD,

Superintendent Yellowstone National Park.

Hon. C. DELANO,

Secretary of the Interior, Washington, D. C.

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