

L E T T E R

FROM

T H E S E C R E T A R Y O F W A R ,

TRANSMITTING

The report of Major J. W. Barlow, who accompanied a surveying party of the Northern Pacific Railroad, in relation to Indian interference with that road.

JANUARY 6, 1873.—Referred to the Committee on the Pacific Railroad and ordered to be printed.

WAR DEPARTMENT, *December 14, 1872.*

The Secretary of War has the honor to submit to the United States Senate the accompanying copy of a report of Major J. W. Barlow, United States Engineers, who accompanied the escort of a surveying party of the Northern Pacific Railroad down the Yellowstone River and back to Fort Ellis, and which report, in the form of a journal, contains much matter that would be of interest to the public generally, and has a direct bearing upon the subject of interference by Indians with the progress of the road.

WM. W. BELKNAP,
Secretary of War.

HEADQUARTERS MILITARY DIVISION OF THE MISSOURI,
OFFICE CHIEF ENGINEER,
Chicago, Illinois, October 16, 1872.

SIR: In compliance with the following order I left Chicago on the 8th of July and proceeded to Fort Ellis, Montana Territory, from which point I accompanied the escort for a surveying party of the Northern Pacific Railroad in its expedition down the Yellowstone and back to Fort Ellis:

[Special Orders No. 60.—Extract.]

HEADQUARTERS MILITARY DIVISION OF THE MISSOURI,
Chicago, Illinois, July 2, 1872.

I. Captain J. W. Barlow, chief engineer of the division, will proceed to Fort Ellis Montana Territory, and accompany the escort to the surveying party of the Northern Pacific Railroad, which is to start from that point on the 20th instant, and proceed down the Yellowstone to Powder River, returning to Ellis via Musselshell River.

By command of Lieutenant-General Sheridan:

JAMES B. FRY,
Assistant Adjutant-General.

Under verbal instructions from the Lieutenant-General, a journal of the route was kept by me, a copy of which is herewith submitted for his information.

Very respectfully, your obedient servant,

J. W. BARLOW,
Major of Engineers.

JOURNAL.

The surveying party was under the direction of Mr. J. A. Haydon, and numbered about twenty men, consisting of Mr. Haydon, chief of party, two principal assistants, in charge of the compass and level, together with rodmen, chainmen, and others. The escort, commanded by Major E. M. Baker, Second Cavalry, consisted of four companies, one hundred and eighty-seven men, of the Second Cavalry, and four companies, one hundred and eighty-nine men, of the Seventh Infantry. The aggregate of troops, surveyors, teamsters, &c., was about four hundred. The engineers' supplies were carried in three four-mule wagons. Sixty-five wagons, ambulances, &c., accompanied the escort. Rations for one hundred and five days for the men, and thirty days' forage for the horses, were taken along.

Preparations for the movement were completed on the 26th of July, 1872, and on the next day the infantry and wagon-train left Fort Ellis, the cavalry overtaking them on the 28th.

The route from Fort Ellis to the Yellowstone was through the "Bozeman Pass," and along the line surveyed last year by the Northern Pacific Railroad engineers. This part of the route is extremely picturesque. After crossing the summit of the "divide," the road follows the valley of Trail Creek, to the Yellowstone Valley, where, from various points, the scenery is grand and beautiful. Toward the east the Yellowstone is seen, as it leaves the mountains and plunges downward into the plain below, while above, and beyond, the vast billows of lofty mountain-peaks, crowned with perpetual snow, stretch far away to the south and east.

To the north of the river, thirty miles distant, and towering amid the clouds, is seen the ragged, precipitous range known as Crazy Mountain, an admirable name for this wonderfully tumbled wilderness of gigantic rocks.

On entering the Yellowstone Valley, which is broad as well as beautiful, we find that the foot-hills rise from the bottom-grounds in successive terraces, forty to fifty feet in height, as regular and well-defined as the surfaces of a fortification, each terrace indicating as clearly as possible the different water-levels in former times.

The river this season was unusually high, its depth being eighteen feet, and its width about one hundred yards, at the Mission ferry.

Crossing, even with a skiff, is attended with great difficulty, owing to the swiftness of the current, which here runs at least eight miles an hour.

The lower terraces in this part of the valley are composed of local drift, though in places very fertile, particularly along the bottoms of tributary streams, as at the Crow Indian agency, where fine crops of vegetables are raised with but moderate labor.

This agency is located upon a bluff south of the Yellowstone, and nearly opposite the mouth of Shields River. It is subject to severe wind-storms, which render the site extremely disagreeable.

The Crow Indians were encamped near the agency, and an invitation was given by Colonel Baker for some of their young men to accompany the expedition in the capacity of scouts. None, however, accepted. They stated that they would like to go and fight the Sioux, but not to travel peacefully through their country, and also intimated that we would find bad friends down there.

Mich Bowyer, a half-breed Sioux, (though living among the Crows at their agency,) was engaged as guide to the expedition. On the 30th of July we went into camp on Shields River, about one mile from its mouth, and thirty-three miles from Fort Ellis. The valley of this river is fertile and well adapted to farming purposes. Irrigation from the river is, no doubt, practicable for many miles. The uplands through this entire region are perhaps, more fertile than the river-bottoms, for the soil has a less proportion of gravel, and if irrigation can be successfully applied to them they will eventually be considered the most valuable lands in the Yellowstone Valley.

To avoid the precipitous bluffs at whose base the Yellowstone flows just below the mouth of Shields River, the heavy train was compelled to make a detour.

On the 31st we encamped on a warm creek, about two miles from the Yellowstone, after a fatiguing march among the foot-hills of Sheep-Head Mountain. The latter is a spur of Crazy Mountain, and its face to the south is a nearly vertical wall of basalt, extending for miles along the direction of the Yellowstone River, the intermediate country having seemingly subsided from a much greater altitude, and been subsequently washed into gullies with intervening ridges.

A great variety in the rock formation was observed in this region. Gray sandstone of a fine variety is abundant, also beds of limestone with traces of lignite and gypsum.

The next day, August 1, the command continued over a region similar, though less rugged than that traversed the previous day, and encamped in the Yellowstone Valley, one mile from the river, on a cool mountain stream known as Cottonwood Creek.

The "Crazy Mountains" are still in plain view, and seem to be a continuation of the snow-range south of the Yellowstone, the similarity in general appearance being very striking. The character of the soil in this portion of the valley is extremely rich, and a fine crop of bunch-grass covers the entire region, though there is a marked scarcity of timber.

A growth of stunted pines is seen in the ravines of the distant uplands, and a fringe of cotton-wood is usually found along the borders of the streams.

The camping-ground on Cottonwood Creek combined every advantage, being level and having wood, water, and grass in abundance.

The weather was warm, the thermometer standing at 88° in the shade, and in the evening the mosquitoes were somewhat troublesome.

August 2.—The command moved along the nearly-level bottom of the Yellowstone for about seven miles, and camped on a considerable creek bordered with a heavy growth of cottonwood, nearly all of which, however, is now dead, and affords excellent fuel. A good deal of delay was caused in crossing a sharp ravine, picks and shovels being required to improve the roadway. The temperature increased the thermometer, reaching 90° in the shade. At this point the Yellowstone has an exceedingly rapid current, falling at the rate of eleven feet to the mile. It admits of being conducted in canals to some of the higher terraces, and will thus serve to irrigate extensive areas on either side of the

stream. The water in the creek on which we encamped was strongly alkaline, and increases, rather than quenches, thirst.

August 3.—In moving forward to-day it became necessary to cross a broken space about two miles in extent, intersected by ravines and water-courses, and then the level Yellowstone Valley was entered. Good progress was made for five miles, when the command encamped a half mile beyond the Big Timber on the immediate bank of the Yellowstone. All the streams in this section, including the Yellowstone, are alive with trout, yielding a supply for the entire command. The soil remains fertile, the grass-crop being sufficiently abundant to be mowed for nightly feeding.

August 4.—The river at this point is 300 feet in width, some 12 or 15 feet deep, and booms along in great waves at the rate of seven or eight miles an hour. It would be impracticable to cross this stream with the facilities at our command, and we are therefore compelled to work back among the hills to avoid the high bluffs just below and near the mouth of the Sweet Grass.

For several miles before reaching these hills the road was very little obstructed, but upon entering the rough country masses of sand-rock were found cropping out from the ridges, whose sides are covered with stunted pine trees. Cactus is found in great abundance, and also a miniature growth of sunflower some two feet in height. After a march of nine miles we camped near the Sweet Grass, several miles from its mouth, in a pleasant valley with grass, wood, and water in sufficient quantity. This stream derives its name from an aromatic grass which grows along its banks and which has an exceedingly agreeable and lasting perfume.

August 5.—The Sweet Grass was crossed this morning soon after leaving camp. Considerable delay occurred on account of the steepness of its banks, which had to be cut down. The stream is shallow, and forty yards across. The descent to the stream was so steep that the troops had to let the wagons down gradually by means of ropes. The men were likewise employed in hauling them out on the opposite side.

Winding northwesterly about two miles, we crossed a sluggish stream flowing over a muddy bottom. This is a small tributary of the Sweet Grass, along whose valley our course lay nearly eastward for several days. The grazing in this valley was exceedingly fine, being a rich growth of buffalo-grass. The hill-sides, steep and rocky, are usually covered with stunted spruce pines.

During the two following days, viz, the 6th and 7th, we continued up the valley, crossing and recrossing the small stream at frequent intervals, and gradually ascending to a much greater altitude. This part of the march was thoroughly agreeable; good water, wood and grass were in abundance. Along the streams cottonwood is found, and also wild currants in great profusion.

On the 7th we left the valley of the Sweet Grass, having ascended to the plains near the summit of the divide between the Yellowstone and Muscleshell River.

Our progress thus far had averaged about eight miles per day. After crossing the divide the character of the country materially changes, in appearance at least, the sharp, wooded hills, giving place to an open, rolling country, almost destitute of vegetation, excepting buffalo-grass and wild sunflowers.

The views were extensive and magnificent, though somewhat cheerless and monotonous from lack of vegetable and animal life.

Camp was made on the 7th, near a small stream running south-easterly, a tributary of the Yellowstone. A few cottonwood trees were here found, which served for fuel. The guide informed us that a supply would have to be carried forward from this point, as no more fuel would be found for two or more marches.

The same geological formation still exists that has been noticed along our route for several days, viz, fine gray sandstone, in strata, underlying the entire country, and broken up by volcanic agencies; the strata assuming all possible inclinations, being often nearly vertical. Toward evening a severe and cold rain-storm came on accompanied by thunder and lightning, and continued with more or less violence throughout the night.

On the 8th, after a cold and dreary march of four miles, through the rain and over a rolling country, our progress being necessarily slow on account of the wet, heavy roads, we encamped on the brow of a bold bluff overlooking a vast plain to the eastward. Water and a small quantity of wood were found in a deep ravine near camp. Fuel was absolutely necessary in this camp, both for heating and cooking purposes, and was obtained with some labor from the bottom of the ravine.

August 9.—The scenery along the route to-day was enhanced by the brilliant appearance of Crazy and Yellowstone Mountains, now sparkling in the sunlight with a dazzling coating of snow, received while we were shivering from the cold rain of yesterday. Game is becoming more abundant; herds of antelope are often seen, and the hunters now secure plenty of venison for the command. An occasional buffalo is observed, but no herds as yet. We descended from the elevated tableland and entered upon an extensive prairie country, bounded on the south by a low ridge which separates us from the valley of the Yellowstone, and on the north by the face of a precipitous bluff, the side of an extensive plateau reaching off toward the Muscleshell River. Between our line of march and this high bluff is a succession of small lakes, plainly visible from different points in our route. These lakes are composed of surface-water, and are said by the guide to be strongly alkaline; the few small streams crossed on this prairie probably become entirely dry later in the season.

A march of eighteen miles was made and camp located on a small stream, which flows but a short distance and then disappears. A few cottonwood trees were found in its valley, and lignite in small quantities was discovered in a lateral ravine. Rain came on again during the night, with violent gusts of wind, which threatened to tear the tents from their fastenings.

August 10.—The route continued eastward over a rolling country, through numerous prairie-dog towns. Many rattlesnakes were seen, and game is becoming still more abundant; wood and water are scarce, and the grass is getting shorter, hardly sufficient for the stock. Prickly pear is plentiful, and sage-brush is beginning to appear. After a march of only six miles, camp was made on the brink of a sharp, rocky ravine, at the bottom of which was found a fair supply of rain-water, in pools, and a rank growth of willows. The water is probably permanent. This is an important water-course at certain seasons, it being the outlet of an immense territory. It breaks through the ridge southward, forming a wild cañon some hundreds of feet in depth, and several miles in length. On the 11th we set out in the hope of making our next camp on the Yellowstone; the country passed over was open, and for several miles there appeared no great obstacles to the progress of our train, the country being a continuation of the plain of the previous day. At a distance

of about seven miles from camp we came upon the brow of a high bluff overlooking a broad terrace beyond. Down this bluff it became necessary to find a practical road for the wagons, and after considerable search a winding route was decided upon, which led down a rough and forbidding-looking spur, which eventually required the lively use of pick and shovel to become passable. Part way down the descent I noticed a quantity of pure mica, in bright sparkling scales. The soil now became exceedingly poor, without water, though badly cut into sharp, rugged ravines. A few herds of buffalo and numerous bulls, roaming apart from each other, were observed near our route. Antelope were abundant. Owing to the broken condition of the country it was considered impracticable to reach the river before camping, and a suitable locality for this purpose, in this desolate region, became a matter of importance.

The guide reported that water of an inferior quality could be found a few miles farther on, and somewhat to the north of our course. Accordingly the proper direction was taken, and at the point indicated a deep gully was found containing a small stream of alkaline water, fed by a few springs. The springs bubbled up through the rock, and were cold and clear, though of an unpleasant taste. The grass at this point had been nearly consumed by the buffalo, and except for the rank growth of prickly-pear the ground would have been nearly destitute of vegetation. Distance traveled eighteen miles.

August 12.—A slight rain fell last night; camp was broken with the determination of reaching the river to-day. The course taken was about southeast, along the right bank of the ravine on which we had just encamped. Numerous smaller ravines intersect this one, cutting up the country so badly that it was feared our trains could not reach the river in one more march.

The knowledge and skill of our guide were equal to the emergency, and he succeeded in finding a route by which the column avoided the gullies almost entirely. The same sandstone formation still continued. The ravines cut through the strata and thoroughly expose them to view, so that their thickness can be readily measured. In many cases cones and spires of beautiful proportions have been left standing, giving the appearance at a distance of Indian encampments, or the ruins of ancient fortifications.

Numerous buffalo were seen along the line of our march, and a large herd was driven through the column, and a general attack made on them by the officers and soldiers.

On reaching the valley of the Yellowstone, some ten miles from camp, a glorious scene was presented. The bluffs on either side of the river are from sixty to a hundred feet in height, and the stream flows from side to side of the valley, leaving flat bottom-lands within its curves of varied extent. Where we struck the river one of these rich meadows was found, containing some two hundred acres, skirted on the opposite side by the river, fringed with cottonwood trees, whose rich green color was a gratifying contrast to the brown and withered vegetation of the region we had just left. Encircling this flat on the side next to the bluff was a growth of timber bordering a slough, across which we had to construct a roadway, with considerable labor, for the teams.

August 13.—No march was made to-day. The surveying party descended the river seven miles, to a point where the survey of last year terminated. Having found the last stake, the engineers commenced work, and carried their line upon the broad terrace next above the river-bottom, and continued it to a point nearly opposite this camp.

Our camp is exceedingly pleasant and quite picturesque. It is en-

tirely surrounded by trees, among which is a rank growth of willow and rose-bushes. The blossoms of the latter have fallen some time since, leaving almost as beautiful a display of bright red berries in their stead.

Close to camp rushes the river in a perfect torrent, washing away the soft alluvial bottom with great rapidity, while evidence of its former power is seen in the huge trees that lie stranded on the small islands in its midst. The stream is here about two hundred yards wide. The opposite shore is a bold, rocky bluff, perhaps eighty feet in height, worn by the elements into various shapes, here and there resembling battlements of castles of the feudal ages.

August 14.—This morning about 3 o'clock the command was startled by the report of several rifle-shots, and in a few moments a lively firing was opened by our sentinels along the line facing the slough. It was soon evident that the Indians were making a night attack. The guard at once turned out and commenced driving in the mules that were out "on herd." The principal attack seemed to come from the right, where Captain Bacon's battalion of infantry soon deployed and poured several volleys into the thicket, in which the Indians were massed in considerable force. These Indians were at length driven from their cover, and were seen scampering across the open field and getting beyond the range of our guns as rapidly as possible. In the mean time the mules were driven in by the guard and safely corraled within the inclosure formed by the wagons.

On the left a small squad of citizens, who had been traveling under our protection, were in camp. The Indians fell upon them early in the fight, and succeeded in capturing a fine rifle and some ammunition from one of the tents. Near this point an Indian was shot by one of the citizens, and afterwards killed by a soldier of Captain Thompson's company. This Indian's body was dragged within our line. A number of Indian horses were killed during the fight; and it is quite probable that several Indians shared the same fate, as their bodies were seen being carried off from the field.

The bluffs above were lined with savages, who, together with those nearer at hand, kept up a continual firing upon our camp. Bullets penetrated our tents, struck three or four men, killed two horses on the picket-line, and wounded several mules. During all this time it was too dark to estimate the force of the Indians, or even conjecture what their plans might be. As soon as it became sufficiently light to render distant objects visible, the plain to our right, beyond the swamp, was seen swarming with red-skins charging in circles, and keeping up such a yelling as only they are capable of.

Every available point upon the bluffs in our front for a mile in extent was occupied by them, while from the various ravines and other places of ambush came rifle-balls often sent with most unpleasant precision. The whole force was variously estimated at from five hundred to one thousand.

Captain Ball, of the Second Cavalry, with his company dismounted, went out on the left, and drove the enemy from the bluffs in that direction.

Lieutenant Gragan, Second Cavalry, with fifteen men of his company, mounted, went part way up the bluff, directly in front. These two forces, not acting in concert, returned after accomplishing their immediate object.

The Indians' headquarters seemed to have been established upon a prominent bluff on the left of their line, from whence couriers were fre-

quently dispatched. This point and other bluffs in its vicinity were densely crowded with Indians during the fight, and remained in their possession for several hours after daylight. The firing ceased about 7 o'clock, and, though the fight was over, apprehension was felt that a force of the enemy might cross the river, and, from the brush on the opposite shore and intervening islands, seriously annoy us, and force us either to abandon our position upon the river-bank or sacrifice a number of animals. But they had not the sagacity to attempt this, and were undoubtedly satisfied to get off without further loss to their own party. They left two dead bodies, and ten or twelve dead ponies. Our casualties were as follows: One sergeant of the Seventh Infantry, killed, shot through the head; one private, same regiment, wounded in leg; Private Ward, Second Cavalry, supposed mortally wounded, shot through eye and head; Private Cox, same regiment, driver of headquarters wagon, also thought to be mortally wounded, shot through the bowels; one of the citizens mortally wounded, shot through upper part of body and spine. Eight animals were stolen, two horses killed, and all the beef-cattle, about fifteen in number, driven off. Toward noon a reconnaissance was made by Captain Ball, with his company mounted, and this revealed the fact that the Indians had all left our immediate vicinity. About 2 p. m. we broke camp, the engineers resumed their survey for three miles, and the command moved down the river and encamped on its bank, four miles below the fighting-ground, in a large grove of cottonwood trees. Considerable apprehension was felt of another attack, as this position was favorable. The river, however, afforded some protection, but to prevent surprise the cavalry companies moved out beyond the brush, where they passed the night. The following morning's observation of the ground discovered the fact that the Indians had reconnoitered our position in large force, the soil being much trampled by ponies. But our precautions had doubtless intimidated the savages, and the command enjoyed the undisturbed rest which they so much needed.

August 15.—The surveyors went out under the escort of one company of cavalry, and the main column moved up the hill upon the level bench some ninety feet above the river bottom. This is a broad, level expanse, nearly barren, being stony, and yielding little vegetation except sage and prickly-pear. The surveyors make good progress, being only detained by small, sharp ravines which extend down from the mountains to the river. Over five miles of survey were made to-day. We encamped on the point of a bluff, between two ravines, and have an excellent defensible position. Just below us the river makes a broad bend, inclosing a considerable flat of bottom-land on this side, covered with good grass, and containing a grove of cottonwood trees. The animals are grazing in the bottom, and water is brought up to camp from the river. Across the stream a vast and nearly level meadow extends away several miles in breadth, gently ascending toward a low ridge in the distance. There is nothing particularly inviting in these landscapes except their extent, and even this feature becomes monotonous.

One or two Indian ponies were found on the trail of the Indians. This trail indicates that a greater part of the band which attacked us have crossed the river and gone southward.

August 16.—The camp was not moved to-day, the engineers wishing to take time to survey across the deep ravine just beyond our situation, and obtain some triangulations for topography. The hill on which we are camped is covered with pebbles of various kinds of mineral, onyx, chalcedony, marble, granite, &c.

August 17.—The command moved across the creek just below camp

this morning. The table-land here opens out a mile in breadth, but is very barren, being alkali soil, and yielding almost nothing except an occasional sage-plant and a few bunches of cactus. Skirting the western and northern limit is a steep bluff of rock fringed with stunted pines. These bluffs extend toward the river, and a few miles farther on completely bar our progress, along the bench near the stream. It will be necessary to break through and ascend these bluffs and continue our journey along their heights for a number of miles. Water and grass will probably be scarce through the entire region. As the movement could not be commenced to-day, camp was made on the edge of the bench overlooking the river and the vast bottom-lands upon the opposite side. It seems unfortunate that we cannot cross and continue our route on that side, as we could thus save much both in distance and time. From this camp "Pompey's Pillar," about fifteen miles distant, is visible.

Four large trails have been discovered crossing the river near this point, and remains of rude rafts have been seen upon which dead and wounded Indians were probably crossed over. Bloody clothes and other indications show that the savages received some injuries from our heavy firing. The remains of nearly all the beef-cattle have been found. The Indians appear to have had a very large force in this vicinity. Several large camping-places have been discovered, and the estimate of the number of Indians at the time of the fight was, perhaps, too small.

August 18.—We were startled last night by two false alarms, each of which brought the whole force out. The first alarm occurred at 10 p. m. and was occasioned by a shot from one of our sentinels, discharged at a floating log in the river, which he had mistaken for an Indian. About 3 a. m. another alarm arose from the fact that a sentinel went out of camp, and being seen beyond the line, was fired at by another of the guard. Nothing serious happened. No movement has been made to-day. The question has arisen regarding the propriety of our farther advance, in view of possible Indian hostilities. Colonel Haydon, in charge of the survey, presented to Colonel Baker a series of questions as to his opinion and that of other officers of the command, concerning the adequate strength of the escort, and its ability to protect the engineers when separated from the main column, and concerning the facilities for taking care of a large additional number of wounded in the event of another engagement. Colonel Baker replied that it is the unanimous opinion of himself and his officers that the escort can conduct the survey to Powder River and back in safety, and protect the engineers in their duty, and that there is ample provision for any wounded we are likely to have.

August 19.—Camp was not moved to-day, but the survey was extended. The day has been intensely hot, with a fierce wind blowing during the afternoon, which made camp-life exceedingly uncomfortable. Specimens of petrified fish were found in the black-clay rock, so abundant in the cliffs along the stream. This cliff is one hundred and twenty feet in height, and made up of clay, sand, and black rock. Colonel Haydon, in charge of survey, came in about 6 o'clock. He was able to make but two and a half miles of survey on the line, owing to the roughness of the country, and the distance of the work from camp, his party being compelled to walk six miles before beginning their labors, and to return the same distance after finishing for the day.

August 20.—The difficulties under which Colonel Haydon labors, the impossibility of continuing work without dividing the force, determined him last night to notify Colonel Baker that he would not operate

any farther on the present line, but that he desires to go across to the Muscleshell, and survey back to Fort Ellis by that line. This is probably a just and wise determination, in consideration of all the circumstances of the case.

In accordance with Colonel Haydon's wishes, camp was moved this morning at 7 o'clock, and the column started for the Muscleshell River.

Our course as advised by Mich, the guide, has been in a northwest direction, over a dry, alkali country, nearly barren from lack of moisture. Much difficulty was encountered in crossing the numerous sharp gullies and ridges, but the teams were fresh, and, with the occasional help of shovels and picks, got along very well, making about eight miles. We camped on a small ravine containing muddy water in pools, probably rain-water, and very strongly impregnated with alkali. This spot is not agreeable, as the grass is very scarce, the principal productions being prickly-pear and sage-brush, with some greasewood for variety.

Soon after pitching the tents a terrible gale arose and filled the air with such a storm of dust that there was no relief either within or without the tents, and besides nearly every tent in camp was quickly blown down. All attempts at cooking, reading, or sleeping were of necessity abandoned.

August 21.—The gale was less severe during the past night. The morning was cool, and a good day's march was made towards the divide separating the Yellowstone from the Muscleshell. Our course was about north 80° west. This direction was taken in order to reach a low point in the range, where the guide said we would find small springs of water. The character of the country is the same as that passed over yesterday, being a dreary barren, and alkali waste, broken up into deep and tortuous ravines in which occasional pools of warm alkali water are found.

About twelve miles from last night's camp we reached the hills forming the divide. These hills are sand-rock, with pine trees of a scrubby sort, growing upon their upper slopes. The only water that we could find was in a few pools, where buffalo had wallowed, and it was warm, muddy, and extremely distasteful. Enough of this water was obtained for the men and a small part of the animals, but most of the latter were obliged to do without.

August 22.—An early start was made (5.30 o'clock) in order to ascend, during the cool part of the day, the steep hills leading to the plateau some three miles above. The road selected, winding up the spur on which we had encamped, required a good deal of labor, with picks and shovels, before it was passable, and nearly four hours were consumed in getting the train up. These hills are composed of disintegrating sand-rock, much worn by the elements and standing in many detached cliffs of varied forms of beauty. On reaching the summit, a broad plateau extends off northward for several miles. Here, at my suggestion, Colonel Haydon established a base-line, and from either end triangulated to various prominent landmarks, some of which had been located from his line of survey.

From this base the Yellowstone Range, Pryor's Mountain, Bull Mountain, Judith, and Crazy Mountains are visible. Thus we have located these ranges with considerable accuracy. The hills we ascended this morning do not form a ridge, but are simply the slope of a vast plateau, about ten miles in width, lying between the two rivers, and elevated several hundred feet above the valleys. The surface of this plateau is an undulating prairie, destitute of trees of every description, and nearly so of water. By bearing away nearly due west about seven miles the guide led us to a peculiar sink-hole lined with clay, and containing

sweet though muddy water in abundance. The guide says this water remains permanently, even if all the springs in this region dry up. It is simply a pond, or rather a ditch, seventy-five yards in length, with a hard clay bottom, and although our animals must have drunk three thousand gallons from it the depth of the water was not perceptibly affected. There was no wood here, and before going into camp it was desirable to reach the northern edge of the plateau, where both wood and water would be found. The whole plateau had just been alive with buffalo, and fresh meat will now be plentiful. The weather, however, has been too hot to admit of hunting the buffalo with anything like comfort. About six miles from our last watering-place we came to the edge of the plateau leading down into the Muscleshell Valley. These hills are very picturesque, and the view as we reached the edge was splendid. To the north lies the Judith Range, dark in color, except where slightly spotted with snow; nearly west is seen the Crazy Mountain, still more snow-covered, while between is the diversified Muscleshell Valley, with woody ravines and grassy slopes, on which thousands of buffaloes were quietly grazing. This valley is much more inviting in appearance than the Yellowstone.

The heavy train moved slowly to-day on account of the scarcity of feed for the animals, during the past two days, and it was dark before the rear came up. We camped among the foot-hills of the northern slope of the great middle plateau, and found water tolerably abundant, in springs, some of which were very fine and cold.

August 23.—A late start was made this morning in order to allow the nearly-famished animals to get the benefit of the good grazing at this camp. The route continued down the northern slope of the divide, on which we had encamped last night, and proved very winding, this region being badly cut by ravines. We found quantities of game, including buffalo, antelope, and sage-chickens.

The nature of the soil changes as we approach the valley of the Muscleshell, and becomes more barren though less hilly. The grass has been completely eaten off, nothing being left but the universal prickly-pear to relieve the desolate condition of the ground. Very little water was discovered, and that little proved to be very poor. After traveling ten miles we reached the river, which at this point is clear and sweet with considerable current. It is about twelve to sixteen inches in depth, and forty feet in width, which seem very insignificant when the immense area tributary to the stream is considered. It is extremely crooked, with steep bluffs jutting from the adjacent highlands on either side, with inclosed bottom-lands of considerable extent lying between.

These bottoms are well wooded with cottonwood and willows.

The grass is not abundant, though much more so than upon the hills above. The weather has been extremely warm for several days, probably upward of one hundred degrees, causing great suffering, both among the men and animals. The main column did not reach camp until sunset, though the distance traveled measured only ten miles. When we reached this camp buffalo were observed in vast herds in all directions, but the injudicious hunting, by several members of the command, soon drove them far away, and for some days they will probably be extremely scarce.

August 24.—It was decided to remain here, perhaps days, to allow the engineers to examine the country several miles below. The animals need rest and a chance to graze and recuperate after the fatiguing marches of the past several days.

August 25.—We spend to-day also at this camp. No duty is required

except the necessary guard. We enjoyed a slight rain-fall last evening, which has cooled and refreshed the atmosphere wonderfully. Preparations are being made to escort the surveying party down the river about twenty miles, whence they propose to commence their survey up the valley of the Muscleshell to the Missouri Forks. The escort for this purpose will be the whole cavalry force, with three days' rations and a blanket for each man. The infantry will be left here with the entire wagon-train parked for defense. The cavalry and surveying party will be out two nights.

August 26.—The object of the expedition down the Muscleshell River is to ascertain the location of the "big bend," as it is called, or the point where the stream turns from its eastward to its northward course. A sharp elbow is formed there, and its position, as represented by the guide, materially differs from that laid down on the maps. This bend will serve as a starting-point for the survey of the railroad line along the Muscleshell back toward the Gallatin Valley. The party, with its packs, started at half-past seven o'clock, and, taking a course nearly due east, passed through the underbrush and trees on the bottom-lands and ascended the ridge beyond. This course deviated considerably from the river, as the latter bears off to the southward. The country is open, being a high, rolling prairie, intersected by ravines, so common in this region, and destitute of nearly all vegetation except the prickly-pear. The valley of the Muscleshell in this section seems wholly worthless, except, perhaps, for grazing. Continuing onward the elevation became greater, and also our distance from the river, whose valley was soon obscured by intervening heights. After about four miles we reached the highest ridge, which must be seven hundred feet above the bottom-lands of the river. The guide told us that we would now descend into the valley of the river again, and that we would find ourselves in the Muscleshell beyond the "big bend," and that its waters would be found running north from there onward to the Missouri. The guide's information seemed correct, for, about three miles farther on, we saw that the course of the stream had decidedly changed to the northward. A great error is apparently discovered to exist in the maps of this region. Toward the east and northeast a high, rugged, and unbroken range of hills extends far off to the northward, effectually barring the progress of the river eastward, while along the foot-hills of its western slope the valley of the Muscleshell River could be distinctly traced for several miles. Careful triangulations and other investigations were made by the surveying party to verify this conclusion, and it was then determined to pursue the search no farther, but to take this spot as their initial point for the survey of the Muscleshell westward to the mountains. A survey of the country eastward will be attended with great difficulty. The barren, dry ridges present a most forbidding aspect, being the commencement of the "bad lands," which extend from this point to the Missouri and Yellowstone Rivers. All the information that can be obtained goes to prove that, on account of the rugged nature of the country, and the almost entire absence of water, it would be next to impossible to force a passage through with a heavy wagon-train.

The Muscleshell diminishes in volume as it proceeds onward, its waters being gradually absorbed into the gravel and sand formation. Water falling upon or flowing through this soil is apt to disappear, and springs are exceedingly scarce. The bluffs in this vicinity are often bald and rocky, the rock being the usual sandstone of inferior quality, sometimes resting upon beds of clay, and supporting sand, clay, or gravel. Sev-

eral quite extensive strata of lignite were observed. After completing their work of triangulation, the engineers assumed a "bench-mark" near the river, and began running their line westward along the valley of the stream. As our distance from camp was not great, it was decided to return for the night, rather than keep the command separated, and accordingly at 6 o'clock work was discontinued, and the force started for camp. About two miles of survey had been accomplished. Darkness came on before we reached our destination, and the ride seemed long, gloomy, and fatiguing. Our camp is located upon a high knoll on the north bank of the river, the surrounding country being a flat on which there is sufficient grazing for the animals for the present.

August 27.—We still remain in this our first camp on the Muscleshell. The engineers were out surveying from the point where they left off yesterday, and made about four miles additional. Their line was selected along the river, following its various curves, and remains on the north bank of the stream.

August 28.—The weather is beautiful, though very warm in the middle of the day. The engineers made good progress, and continued their survey to within a mile of camp.

August 29.—Camp was moved to-day five miles up the stream, and established just below a high, rocky point, said to be the beginning of a considerable cañon. The route was through the river-bottom, the wagons finding no obstructions of any importance. The general features of the country remain the same as around our previous camp, viz: rolling hills and valleys stretching away to the north and south of the river, commonly destitute of vegetation, while the narrow river-bottom presents a green and attractive appearance on account of the luxuriant willow and cottonwood trees growing near the water. We found the stream much swifter and cooler than at the previous camp. The engineers brought their survey up to our present camp, the distance being seven miles.

August 30.—We remained in this camp to-day, the engineers continuing the survey some five miles further up the river. The day has been most oppressively warm and dry.

August 31.—Camp was moved to-day, and a march made by the train of about ten miles. The stream was crossed four times to avoid high bluffs. By this course a pretty good road was selected. The surveyors continued their line on the northern bank of the river over very rough and broken country, encountering bold, rocky cliffs, and sharp, deep ravines. Much skill is evinced by Colonel Haydon in the selection of his line. Some three miles above the point where he left off surveying yesterday he reached the valley of a considerable stream coming in from the north, heading in Judith Mountain, and called by the guide "Crow Wing Creek." This stream, together with the rugged country along the north bank of the river, determined Colonel Haydon to cross to the other side. Just above this point the river passes through a picturesque cañon, with perpendicular sides of sand-stone rock cut into headlands of various shapes by lateral ravines. The train now passing along I joined it. The train soon led down one of the ravines just mentioned and entered the cañon, which soon grows wider, spreading out into a broad, grassy meadow. We now halted and made camp in the high grass near a large grove. The weather has turned much cooler to-day, rendering the march less oppressive than was anticipated.

September 1.—A rainy day in camp. No movement and no survey.

September 2.—The rain fell last night in torrents continually, and the night was inky dark. About 3 o'clock a. m. the report of a rifle was

heard, which startled the whole camp. The feeling of being roused in a pouring rain to repel an Indian attack was not agreeable. I remained in bed waiting for another shot. None came however. The sentinel who fired stated that he saw and fired at a moving object, which he thought might be an Indian on horseback. It was possibly a wolf. The day has been cloudy and damp, though little rain has fallen since morning. The surveyors spend the day in camp rather than risk a wetting by going out on the line.

September 3.—It was raining again last night. As no progress was made on the survey yesterday the camp was not moved to-day. The surveyors went back on the line, making about three and a half miles. The first half of the day was cloudy. At noon the weather changed, and the sun came out bright; there is no breeze, and the air is very sultry.

September 4.—A march of about six miles was made to-day up the valley of the Muscleshell. Soon after leaving camp the high bluffs inclosing the valley became less bold and precipitous, and at the same time gradually closed in on either side, rendering it necessary for the wagons to leave the bottom-lands and ascend the terrace immediately above. The river has about the same width and depth as when we first met it, and winds in a tortuous channel from side to side of the valley, here and there running at right angles against vertical precipices of sandstone rock fifty to seventy feet in height. Cottonwood trees, dense thickets of willows, currant and rose bushes border its banks.

The grass in the bottom is green, and in pleasant contrast with the short and withered buffalo-grass on the hill-sides. I noticed a fine variety of sandstone this morning, which will perhaps be valuable for building purposes at some future time. Along this stream, imbedded in strata of argillaceous rock, are found numerous specimens of fossils. It is from these shells that the river derives its name. From a high butte, near our route, I obtained an extensive view of the country adjoining the valley. The center of the Judith Mountain is nearly north of this point; the Crazy Mountains a little south of west. The intermediate country is much broken, and made up of barren hills of local drift, and some "bad lands," cut by deep and sharp ravines. Very little vegetation is perceptible at this season. The surveyors are examining a line along the edge of the bluffs on the north side of the river, with a view of rising from the river-valley to the table-land above, in order to avoid the frequent crossing and recrossing of the stream, which, on account of the numerous bends, would otherwise be necessary. We camped upon the bluff on smooth ground, but with the prickly-pear in most unpleasant abundance. The river-bottom affords grazing for the animals, and wood is plentiful.

September 5.—A violent rain-storm began in the middle of last night and has continued all day, keeping the surveying party close in their tents, and making it necessary for us to remain here at least another day. This season seems to be unusually rainy. Our tent-stoves are exceedingly comfortable these cold, wet days, and save us from suffering. Great excitement was caused to-day by the appearance of a citizen from Bozeman, who had been sent out with the mail for this expedition. He recounted a terrible experience. Leaving Bozeman on the 24th with a large mail-bag and several days' supplies and an extra horse, he struck down the river, expecting to find us near the Big Horn. When about opposite that point he was attacked by a small party of Indians as he was about camping, toward the morning of the 29th. The Indians came upon him so suddenly that he had hardly

time to escape with his horses, leaving all his supplies, including his provisions and the mail. The Indians followed, but having two horses he was enabled, by changing from one to the other, as each became tired, to outrun them, and finally made his escape across the divide to our trail on the Muscleshell. He reports that he observed from a high ridge that the country across the Yellowstone was literally covered with Indians. He followed our trail without food for four days. At last he found a few crackers at one of our abandoned camps, and they revived his nearly exhausted strength. He reached our present camp at three o'clock scarcely alive. Among the few letters which he happened to have in his pocket was a request from the civil authorities for the arrest of some horse-thieves, who were supposed to be among the citizens accompanying our party. Two of the persons named were known to be present, and were at once arrested. The night set in dark and rainy, and at about half-past 8, Gorman, one of the prisoners referred to, slipped away from the guard and disappeared in the darkness. Three shots from the sentinels created the impression in camp that the Indians were attempting an attack; and until the cause of the firing was ascertained the camp was thoroughly aroused. The clouds broke away in the night, and clear weather for the morning was anticipated.

September 6.—The morning was clear, and with a strong northwest wind blowing. The surveyors were out in good season, but severe showers soon came up and compelled them to return to camp before much had been accomplished. The ground is so saturated with the rain that it may be impossible to move the train for a day or two. The sharp barking of the coyotes, mingled with the deeper howl of the gray wolves, is nightly heard about our camp, more particularly when we have remained for a few days in the same place.

September 7.—The surveyors made four and a half miles to-day, but as the low ground has become simply impassable for the heavy train we are still compelled to remain at this camp. In the afternoon the sun came out very warm, and the rain seems over for the present. In view of the scarcity of grass here it has been determined to move to-morrow if possible.

September 8.—A cold, clear night, with some wind, has dried up the mud, and an early start was made. We crossed the river opposite camp with the train, and ascended the rolling hills on the other side. Getting up these hills, and crossing an ugly ravine, caused considerable delay. After passing these difficulties the road proved good, and about four miles from camp the train recrossed the river, and continued along the northern bank. Here the valley widens out quite extensively, while the bluffs are much more gentle and softer in their outlines than in that part of the valley through which we have just passed. There is little fertility in the soil, except in the low ground, the upper benches being usually composed of broken rock and gravel. The country appeared very beautiful along our route to-day, reaching back from the river in both directions, and diversified with winding ravines, in which are usually found a stunted growth of pines, and, in some instances, cherry and rose bushes. The former horizontal strata of sandstone are here frequently found thrust up at various inclinations; often vertical. The long ridge of the Judith Mountains seems to lie parallel with our route, directly north of us, while the broken and snow-clad peaks of Crazy Mountain bear a little south of west. The wagons made about ten miles, and went into camp in a fine meadow near the river, in the vicinity of a spring of water almost icy cold. Just before reaching camp a thunder-storm came up, and has continued during the remainder

of the day, though accompanied with but a slight fall of rain. The surveyors continued their line some five miles, nearly reaching our present camp.

September 9.—After a terrible rain-storm, lasting nearly all night, the morning broke clear and cold. As the surveyors had nearly reached camp the previous day, it was decided to move camp a few miles farther on. The valley grows wider, with sloping hills of gravel, which gradually rise to a broad level plateau, whence rise ridges stretching off toward the Judith on the north, and toward the divide between the Yellowstone and Muscleshell on the south. A few miles from camp this morning the clouds in the west became black, and very soon the rain again fell in torrents, drenching everybody. The train moved on, cutting deeply into the moistened earth; and it was with great difficulty that the wagons were dragged through the low places. The river seems to increase in depth and rapidity of current, though its width remains about the same. After a march of six miles it was decided to encamp in the river-bottom, in a sage-brush flat. The rain now ceased and sun came out, gilding the heights of Crazy Mountain and the Belt Range, now quite plainly visible to the north.

September 10.—Camp was not moved to-day. We are nearly surrounded with bluffs, which here are gently rounded and smoothed off in soft-curved surfaces, connecting the upper and lower terraces. These slopes are destitute of tree and bush, but yield a scanty growth of buffalo-grass, while the upper terraces are usually covered with prickly-pear. The weather has been cold, fires being necessary all day for comfort.

September 11.—The train made a march of twelve miles to-day, moving across the north side of the river and continuing nearly all the way over a perfectly level road. I rode up to the crest of the ridge near Judith Mountain and found a broad table-land stretching off to the base of the mountain. From this plain I could see the tops of some of the Yellowstone peaks, while the Crazy, the Judith, and the Belt ranges were all in full relief. We traveled to-day directly between the Judith and Crazy Mountains, and passed a large stream heading in the latter range. One or two small creeks were crossed, heading in the ridge toward Judith, but none worthy of being named. Camp was made on the first terrace, some thirty feet above the river-bottom, with little fuel, however, within reach, as the trees along the river are becoming scarce.

September 12.—We remained at this camp to-day; the country improves in beauty and fertility as we proceed up the river. From our camp Judith Gap is visible to the north of us, and the Judith and Crazy Mountains are on a line with our present position. The soil here seems very fertile, yielding an excellent and abundant growth of bunch-grass; there is much gravel, and irrigation would probably be necessary to insure successful crops.

September 13.—The journey up the Muscleshell Valley was resumed to-day; the road was excellent, mostly on the first terrace, above the river-bottom, where the soil is dry and hard, and the country passed over to-day very little cut by ravines. Some seven miles from camp we crossed a broad meadow, through which winds from side to side a small thread-like stream, whose banks are destitute of trees of any kind. This stream is called Haymakers' Creek. From this valley the road led up a steep bluff, and continued for a short distance upon the bench above and then descended to the river-bottom. Another stretch of level road was followed by an ascent to the bluffs again. A few miles further on a second small stream was encountered, where the train returned to the river-bottom. A camping-ground was selected about two miles from

the forks of the Muscleshell, after a march of fourteen miles. Two small streams, named, respectively, Little and Big Elk, were noticed on the south side of the river, coming in from the base of Crazy Mountains. We are now nearly surrounded by hills and mountains, and our survey up the Muscleshell is almost completed.

September 14.—We remained at this camp to-day. The surveyors went back some miles to relocate their line by crossing the river to the south side.

September 15.—Camp was moved up the south fork of the Muscleshell, three miles above the junction of the two forks. The surveyors continued their work, and brought their line up to within a mile of the new camp. From one of the high outlying peaks of the Crazy Mountain I obtained a fine view of the surrounding country, and afterward ascended the stream as far as the mouth of a considerable tributary joining it from Crazy Mountain. This stream is nearly as large as the main fork above the junction, and both are now simply mountain brooks, clear and cool, and of rapid current; the descent being about fifty feet to the mile. A mail-carrier came in from Camp Baker, bearing dispatches for the commanding officer and bringing some newspapers.

September 16.—Camp was not moved to-day.

September 17.—The engineers are still surveying below camp, and we remain here until to-morrow. I rode out along the valley of the North Fork toward the mountains, to the vicinity of Fort Howe, now abandoned. By this valley wagons are often taken from the valley of the Muscleshell to Camp Baker, some forty-seven miles distant from the forks.

September 18.—The camp was moved about five miles up the valley of the South Fork, the railroad survey continuing along a perfectly practicable line. Four miles above camp, or seven miles from the forks, the survey crosses the tributary, coming in from Crazy Mountain, and occupies the high, rolling plateau beyond. Copper abounds in the rock in this vicinity, and fine granite protrudes through the sandstone formation, the strata of the latter being tilted up in a nearly vertical position. Several lines of stone mounds, supposed to mark an old Indian trail, were found to-day in the valley, extending over the hills and across the ravines with great accuracy.

September 19.—The train moved up the South Fork. After following the open valley for about five miles the road enters the mountains; the stream becomes narrow and rapid, with numerous beaver-ponds and dams. Timber almost entirely disappears along the valley, but the hills have a fair quantity of pine. The road proved rocky after entering the mountains, large broken fragments of granite being strewn along the way in great profusion. Camp was located four miles from the entrance to the mountains, after a march of nine miles in a small level valley completely surrounded by high hills and mountain-peaks. A superb dinner of black-tail deer, &c., amply repaid us for our day's fatigue.

September 20.—A cold rain came on last night, followed by a slight snow-storm, which gave a white covering to the ground before morning. This soon disappeared, and the day has been quite comfortable. The stream gets much smaller, and divides into a number of little creeks of cold water just above the camp. The country here is very wild and broken, though the engineers are sanguine of finding a practicable passage for their line.

September 21.—The country on all sides presents a beautiful variety of mountain scenery, though but scantily timbered. Pure, cold streams wind through the various ravines, fringed with clusters of willows. Cot-

tonwood has disappeared. Pine, to some extent, is found on the upper hill-sides. The sandstone rocks of the lower valley are tilted up nearly vertical, while the mountains are formed of solid granite well exposed.

September 22.—A drizzling, cold rain set in to-day, which, toward night, changed into a heavy snow-storm.

September 23.—Deep snow lay on the ground this morning, which prevented the contemplated change of camp. The weather is bitter cold. The engineers, as well as nearly every one else, have kept closely in camp.

September 24.—More snow fell last night, and freezing weather continues. Camp was moved farther west into the mountains, about six miles. Crossing the divide we descended a range of steep hills, and camped in the snow upon a broad valley having a small stream, which, after many windings, finds its way into a branch of Deep Creek or Smith's River. The Fort Ellis and Camp Baker road runs through this valley, and we will take up our march on it in a day or two; the cavalry for Fort Ellis, and the infantry for Fort Shaw.

September 25.—*Camp Separation.*—The infantry battalion left us to-day, taking the road to Fort Shaw via Camp Baker. The little stream on which we are camped is the most southern tributary of Smith's River. Two or three miles south runs a stream, heading in Crazy Mountains, which is the main tributary of Sixteen-Mile Creek, or Little Green River. Just across the ridge to the southeast is a branch of Shields River.

September 26.—An early start was made this morning, and three companies of cavalry, which I accompanied, moved along the Fort Ellis road, leaving the other company with Colonel Haydon as escort for the surveying party. Our route lay along a nearly level valley, bounded on both sides by high hills, which gradually rise into mountain ranges. The road is nearly due south, and excellent, except where crossed by small rills, at which places there was some difficulty in proceeding on account of the mud. We crossed the small stream on which we were camped, (viz, the south branch of Smith's River,) and about four miles farther on crossed the principal tributary of Sixteen-Mile Creek; several smaller streams were also crossed, when after passing over a ridge the beautiful valley of Cottonwood Creek, a tributary of Shields River, was presented to view. This valley is extremely fine, lying entirely surrounded except toward the outlet of the stream toward the southeast by high snow-covered ranges of mountains; Bridger range to the west, Yellowstone Mountains to the south, and Crazy Mountain to the east. We encamped on Cottonwood Creek, eighteen miles from last camp.

September 29.—Camp was broken about 6 o'clock this morning. Fort Ellis is forty miles distant. I had intended crossing the range through Flathead Pass, but the threatening weather prevented and I accompanied Colonel Baker through the Bridger Pass to the post. This pass runs nearly north and south, and is about twenty miles in length. In this pass are the sources of several of the tributaries of Shields River, which flows out at the north, also of Bracket's Creek, which breaks through to the east, about midway between the two ends of the pass.

On the 30th of September I rode over to the encampment of a detachment of the Seventh Infantry, twenty-five miles distant from Fort Ellis, stationed upon Dry Creek, about six miles from the entrance to Flathead Pass. This detachment was placed here to guard the Gallatin Valley from incursions by Indians by way of the Flathead Pass, on the Blackburn, a few miles farther north. The country along the valley of Dry Creek has numerous farms already under cultivation, while along all the water-

courses coming in from the mountains ranches are springing up in great numbers.

On the 1st I went up through the pass in company with Lieutenant Sanburn, who, with his detachment, was on that day relieved from that station by Company A of the Seventh Infantry. Six miles from camp we entered the pass. It has been extensively praised for the beauty of its scenery, and has also been mentioned as a practical route through the Bridger range for the Northern Pacific Railroad. We continued the ascent of the pass on horseback. The scenery along the trail to the summit, about three miles, is far more beautiful than anything I had observed during the entire summer, and reminded me of the gorges of the Upper Yellowstone country. The pass is narrow and heavily wooded with a luxuriant growth of mountain pine, affording a most refreshing shade, while Pass Creek, a cold, sparkling stream, added music to the otherwise perfect stillness of the gorge. Leaping and dancing from rock to rock the waters of this creek presented an ever-varying picture of extreme beauty. The ascent is, however, much too steep for a practicable railroad route; being probably three hundred feet to the mile. An old Indian trail leads to the summit, from which grand and extensive views were obtained to the east and west.

It is to be hoped that this germ of mountain scenery may be preserved as a pleasure-ground in its present natural beauty, it being so accessible to the inhabitants of the valley below.

NOTE.—Accompanying this memoir is a sketch of the route traveled by the expedition, and a tracing of the camp on the Yellowstone which was attacked by the Indians.

[First indorsement.]

HEADQUARTERS MILITARY DIVISION OF THE MISSOURI,
Chicago, November 22, 1872.

Respectfully forwarded to the Adjutant-General of the Army for the information of the General-in-Chief.

P. H. SHERIDAN,
Lieutenant-General Commanding.

[Second indorsement.]

HEADQUARTERS OF THE ARMY,
Washington, November 26, 1872.

Respectfully submitted to the Secretary of War. It is a most interesting and valuable report, and demonstrates that in the progress of building the Northern Pacific Railroad west of the Missouri River, the Indians will oppose every foot of the progress, and if the exploration, survey and construction of the road are to be pushed with the same energy as during this year, we will need at least two full regiments of cavalry, and as much infantry, to guard and protect the necessary working-parties.

W. T. SHERMAN,
General.