The head waters of the Yellowstone, although occasionally visited by small parties of prospectors and mountain men, and within a few days ride of Virginia City, is still to the world of letters a terra incognita. Aside from any regular travelled route, no party of emigrants has ever passed through it on their way to the Pacific slope, and environed by mountain chains that are covered by a dense growth of timber, that make all approach to it seem difficult, no expedition under the patronage of the government has yet attempted to penetrate its fastnesses. The hardy prospector seeking new diggings has hitherto failed to find gold in paying quantities, but has always returned to tell of wonderful waterfalls, one thousand feet in height, of innumerable hot springs, and of vast tracts of country covered with the scoria of volcanoes, some of which were reported to be in active operation. Due to the fact that this class of men had gained a reputation for indulging in flights of fancy when recounting their adventures, these reports were received with incredulity, until it was noticed that however much the accounts of the different parties differed in details there was a marked coincidence in the description of some of the most prominent features of the country. In 1867 an exploring expedition from Virginia City was talked of. For some unknown reason (probably the lack of a sufficient number to engage) it came to naught. The next year another was planned, which ended like the first in talk.

Early in the summer of 1868 the newspapers throughout the territory announced that a party of citizens from Helena, Virginia City, and Bozeman accompanied by some of the officers stationed at old
Fort Ellis with an escort of soldiers would leave Bozeman on or about the 5th of September for the Yellowstone with the intentions of making a thorough examination of all the wonders with which the region was said to abound. Judging from what he could learn by conversing with some that expressed their attentions of going, the writer of this article came to the conclusion that the party was to be limited in number and very select, composed of some of the most prominent men in the territory, and being a "youth to fame and fortune unknown," he felt extremely flattered when his earnest request to have his name added to the list was granted. He joined with two personal friends in getting an outfit and then waited with all the patience he could command for the others to perfect their arrangements. About a month before the day fixed for starting, members one by one began to discover that pressing business engagements would prevent their going. Then came news from Fort Ellis that, owing to some change made in the disposition of troops stationed in the territory, the military portion would not be able to join the expedition, which had now dwindled down to ten or twelve. Thinking it would be unsafe for so small a number to venture when there was a strong probability of meeting hostile Indians, all abandoned the undertaking except the three friends before mentioned who were resolved to attempt the journey at all hazards, believing that the dangers to be encountered had been magnified, and trusting by vigilance to escape them.

On the 6th of Sept. we started from Diamond City, a mining town on a small tributary of the Missouri, forty miles east of Helena. From this point I copy from our diary.
Sept. 6th. Time: sunset; place: Crow Creek thirty miles from Diamond City. Scene: haystack in the foreground and five helping themselves to their supper; a campfire in the rear with all the paraphernalia of a camp outfit, and three unpretentious looking individuals scattered around promiscuously. The long talked of expedition was off at last, but shorn of the prestige attached to the names of a score of the brightest luminaries in the social firmament of Montana as it was first announced, it has assumed proportions of utter insignificance, and of no importance to any one in the world except the three actors themselves.

Our leave taking from friends who had assembled to see us off this morning was impressive in the highest degree and rather cheering withal. "Good-by, boys, look for your hair"; "If you get back at all it will be on foot"; "Don't let the Indians snatch you bald headed"; "If you do get into a scrape remember I warned you"; "It is the next thing to suicide", etc., etc., was the parting salutations that greeted our ears as we put spurs to our horses and left home and friends behind.

Sept. 7th. Resumed our journey at 8 o'clock and arrived at the "Three Forks" of the Missouri at 1 P.M. Here in '63, a party of pioneers solicitous for the future welfare of the public in general and with an eye to their own prosperity in particular, located a town site which was to be the metropolis of the embryo state they were hoping to plant on the eastern slope of the Rocky Mountains. It was to be to Montana what Denver is to Colorado. A line of steamboats built expressly for that purpose would ply between this place and the falls of the Missouri where they would connect with the lower river boats.

Corner lots were at a premium and anyone who was fortunate enough to own one had a fortune in prospect.
To-day in lieu of a steamboat, perfect in all its appointments a water logged ferryboat conveyed our effects across the river, for which we were charged the modest sum of two dollars U. S. currency. It required a stretch of the imagination to convert Willson's flourmill into that imposing structure, the capitol, which we had seen on paper years ago. Instead of a commercial mart teeming with life and enterprise, we found two shebangs, which fulfilled all the requirements of the people by dispensing bacon, sugar, and coffee in limited quantities, and forty-rod whiskey in unlimited quantities to the inhabitants of Gallatin City and vicinity. From Gallatin City a ride of nearly three hours brought us near Hamilton where we camped for the night.

Sept. 8th. From Hamilton to Bozeman, a distance of 18 miles our road passed numerous ranches whose plethoric stacks of grain or wide fields thickly studded with golden shocks gave ample evidence of the propriety of calling this valley the Genessee of Montana. Twenty-five bushels of spring wheat to the acre is a low estimate for the average yield, while as high as sixty or seventy bushels have been harvested. The present crop is unusually fine, and there is probably wheat enough in Gallatin valley alone to supply the territory with bread stuff for one year.

If fine crops, large herds of cattle, and broad acres enclosed with substantial fences are any criterion of prosperity and industry, surely some of the farmers of the Gallatin valley have no cause for complaint. I say some of the farmers, for in contrast with well kept ranches, neat houses, and spacious corrals for the accommodation of cattle, we occasionally saw a ranch where the fences were either down, or on their last legs, where a few scrawny cows ruminated before the door of a rough log cabin, and where the meager stacks of grain and a pack of half starved dogs be-
tokened the abode of that lazy, shiftless specimen of humanity
cycled "The Piker", a class of men to whom Theodore Winthrop in
John Brent paid so just a tribute.

Bozeman a thriving pioneer town is beautifully located in
the eastern part of the valley. We found it had been recently
been visited by a party in the interest of the N. P. R. R. for
the purpose of making a preliminary survey of the Bozeman pass,
the lowest pass in the divide between the waters of the Yellow-
stone and the Missouri, and who having decided upon the feasibil-
ity of the route had made everyone jubilant over the belief that
the road would be built at no distant day, and that a brilliant f
future awaited all those who owned town lots in that burg.

Sept. 9th. This being the last place where supplies can
be obtained, we spent the forenoon in making such additions to
our cuisine as we deemed necessary for a six-weeks trip, and our
outfit when completed consisted of 175 lbs. of flour, 25 lbs. of
bacon, 1 ham, 30 lbs. of sugar, 15 lbs. of ground coffee, 10 lbs.
of salt, 10 lbs. of dried fruit, 1 doz. boxes of yeast powders,
50 lbs. of potatoes, 1 small camp kettle, 1 coffee pot, 2 frying
pans, 3 tin cups, 4 tin plates, 3 knives and forks and spoons, 5
pairs of blankets, 2 buffalo robes, a pick, pan, shovel, and axe,
ammunition and fishing tackle; when first collected together look-
ed like a formidable load for two pack horses, but Billy who had
served an apprenticeship in a pack train in the Webfoot country,
and was expert in all the mysteries of the art, took charge and
soon arranged them in convenient packages of smaller compass
than I could have believed possible. We have a double barrell-
ed shot gun for killing small game which will be carried in one
of the packs in such a way that it can be drawn out in a moment
without loosening the lash rope. Each of us carry a repeating rifle, a Colt's six shooter, army size, and a sheath knife. We can shoot fifty rounds without reloading, and believe in a fair field we are more than a match for any band of hostile Indians there is any likelihood of meeting.

C who has been duly elected captain to serve during good behavior, carries a field glass as a badge of his office. B having in former days been a sailor, is supercargo and general factotum, and carries twine and cord for measuring and sounding. D who had carried a surveyor's chain for two days, and is supposed to have a practical knowledge of topography is to take charge of that department, and carry a small pocket compass and thermometer.

Having completed all our arrangements we made a final adieu to civilization, and believing it necessary that we should adopt some system in traveling, it was decided that C should lead the van, and B and I should act as rear guards, and were strictly enjoined by our doughty captain, to use every precaution to guard against surprise from that quarter. We are to observe this order throughout the journey or until we think proper to change it.

Two and one-half miles from Bozeman we passed Fort Ellis and we think whoever located this post displayed strategic talent of a high order, as they can be protected by the settlements, besides it is very convenient for the soldier to exchange his greenbacks for whiskey and all the other little luxuries so necessary to their happiness. We camped only four miles from the Fort at the foot of the range. Predatory parties of hostile Indians are frequently seen in this vicinity and we consider we are in more danger here than we shall be when we get farther away from the settlements. We selected our camp on a piece of high ground, away from underbrush to avoid surprise. Will let the horses feed until
dark, then picket them close to our beds, put out the fire and turn in. The dog will give the alarm if anything approaches. We have no tent as we do not consider it safe to use one in an Indian country.

Sept. 10th. We were aroused at daybreak by a moose which was probably on his way to the creek for his morning drink. He was standing three or four hundred yards away expressing his astonishment at our appearance by making a noise that sounded like a cross between the squeal of a pig and the bark of a wolf.

Perhaps it is needless to say that the surprise was not all on his side. The dog gave an answering bay and made an unsuccessful attempt to cultivate a closer acquaintance with his lordship, but his awkward shambling trot soon carried him out of sight.

We got an early start and followed up the creek which is a tributary of the East Gallatin and in a short time found ourselves traversing a deep ravine; on the left a perpendicular wall of limestone arose a thousand feet or more, while on the right the mountain rose in steps or terraces irregular in height and distances apart with the intervening spaces covered with the dense growth of spruce. In some places the mass of dark green foliage was unbroken from base to summit. At others it was relieved by butting cliffs of fantastic shape so characteristic of the limestone formation. On one of the highest points stands a huge rock that bears a strong resemblance to an old castle; rampart and bulwark are slowly yielding to the ravages of time, but the stout old tower stands out in bold relief against the sky with every emasure as perfect in outline as though but yesterday it had been laid up by the hand of man. We could almost imagine it was the stronghold of some baron of feudal times and we were his retainers returning laden with the spoils of a successful foray.
As we approach the summit the timber appears only in patches and the hills on either side are less abrupt and covered with a luxuriant growth of bunch grass, which affords fine pasturage for the numerous herds of antelope we saw. Immediately after crossing the divide we struck the head of Trail Creek, and followed it down six or seven miles in an easterly direction to where it debouched from the foothills into the valley of the Yellowstone. Here we turned in a southerly direction over a low rolling plateau covered with prickly pear through which our horses gingerly picked their way, and arrived at the river about sunset. This valley is about twenty-five miles long and from one to five miles wide. At the foot of it the mountains close in on both sides forming a canyon below which is the Yellowstone proper. In 1864 Bridger piloted a party of emigrants to a small stream which rises in the mountains on the east side and empties into the river opposite the camp.

This has since been known as Emigrant Gulch. It "prospects" well but it is deep and the bed-rock has never been reached in a practical manner, and more than one "poor "pilgrims" vision of a fortune has vanished in thin air before the stern realities of its boulders and quicksands. A small party is still delving away and proving its faith by its works; they are running a drain ditch and are now down between 60 and 70 feet with no signs of bed-rock.

The mountains on that side are very precipitous and "Old Emigrant", a sugar loafed peak, is the highest in the range.

The distance traveled to-day was thirty-five miles.

Sept. 11th. We started late this morning with the intention of crossing the river and taking a look at the mines, but missed the trail that led to the ford, and after traveling about five miles came to a ranch to enquire the way but found no one at home. A casual survey of the premises convinced us that whoever
had taken up his abode here, belonged to a class frequently found upon the frontiers, that take life easy. A cabin without any chinking between the logs, with a roof through which every passing shower would filter for hours after it had ceased raining, satisfied his wants for a domicile. A small stack of wheat to which a dozen head of cattle had free access, had recently been harvested from an unfenced field of about forty acres. This will supply him with the staff of life provided it is not all destroyed before he gets time to thresh it. A pile of antelope and elk skins proved that he depended upon the rifle for meat.

After a short consultation we concluded to remain on the west side of the river, and as it was threatening to rain, we started for a timbered creek three miles above, which we reached at 2 P.M., but not until the storm commenced and we were thoroughly wet. Having no tent we improvised one by stretching a rope between two trees, over which we threw a blanket pinning the corners to the ground.

Under this we stored all our effects, and ourselves along with them, and tried to make each other believe that we were comfortable but if blue noses and chattering teeth are any proof to the contrary, we were not so very comfortable after all. Towards evening it stopped raining and before the genial glow of a rousing fire we soon dried our clothes and forgot how unpleasant is the cold drizzle of an autumn storm.

Among other things the Yellowstone is famed for its trout, and towards evening I started out to try my hand at fishing, and in a few moments succeeded in landing four splendid fellows whose aggregate could not have been less than ten pounds. Before they were fairly done flopping we had two of them in the frying pan cooking for supper.
Sept. 12th. We had frequent showers during the night but it cleared up a little after sunrise, and by eight o'clock we were in the saddle. The valley gradually narrowed in as we advanced and became a canon twelve miles above our last camp. At the upper end of the valley the river receives a small tributary from the west, and upon arriving there we discovered three ponies grazing on the creek bottom and a smoke rising from the willows that skirt its banks. Here we found two old squaws who were engaged in gathering and drying choke-cherries. They were seated on the ground with a smooth flat stone between them upon which one would place the cherries, while the other would crush them with a round boulder. They had several bushels drying in the sun, spread out on old rags and bits of hide. Everything around them indicated the most abject poverty. Their wickipup was formed of a few poles placed in a circle not more than ten feet in diameter with the tops interlaced in the usual manner. These were thatched with grass two or three feet from the ground, but were open at the top. They had no bedding except the rags upon which the cherries were spread. Not a single utensil for cooking was anywhere to be seen and so far as we could learn the cherries were their only means of subsistence.

We rode up and saluted them with the customary "How" to which they returned no answer, and manifested no surprise at our presence but after a long stare resumed their occupation. As we turned to leave the oldest came out and commenced talking in a gibberish that was unintelligible to us. She seemed desirous of communicating some intelligence for she repeated the same words several times, pointing up the river, and counted thirty by opening and closing both hands three times. The only word we could understand was "tonkey", which in the Bannock language means mountain sheep, and is
the name of a band of that tribe, called by the whites "sheepeaters!"

Anything in human shape more squalid than this child of nature, it would be impossible to conceive. Her grey hair hung from her low narrow forehead in elf locks over her bleared eyes, the rhume from their cavernous depths and the drule from her toothless gums ran down the gullies of her withered cheeks and fallen jaws; her skinny arms were begrimed with dirt; her claw-shaped hands were stained with the juice of cherries; and the rags reeking with filth which served her for clothing revealed rather than concealed the hideousness of her form. We turned away with loathing and disgust, and not wishing to stop anywhere in their vicinity passed up through the canon. Here we found some very rough travelling and while clambering over the rocks started a band of antelope. Finding themselves hemmed in between us and the mountains, they attempted to escape by dashing past us. B and I fired two shots each from our rifles without effect, but they ran so close to the captain that he knocked one with the shot gun loaded with fine shot. We camped close to the river on a narrow bottom, and fared sumptuously on antelope steak and trout fresh from the water.

Sept. 13. Traveled 20 miles to-day, and in following the general course of the river for the first 14 miles we bore S.25 E., thence due East two miles, and crossed a stream of considerable size coming from the South. A mile further on we came to a canon where the mountains rose so precipitously, that we were obliged to leave the river bank. After an hours hard climbing we reached the summit of a high plateau, and soon afterwards camped on a small stream with wood convenient and fine grass in abundance. During the early part of the day we were frequently obliged to make a short detour through
the foothills to avoid deep ravines or places where the hills terminated abruptly at the water's edge. The river has no valley here it hugs the base of the mountains on the east side, leaving low hills or a narrow bench between it and the foot of the range on the west. Our road to-day has been a rough one and we are beginning to experience a little of the romance of travelling over an unfrequented country where the ever changing panorama of mountain scenery is different from anything we have ever seen before. The general features of the country presents many points of interest to the geologist. In one place we noticed a slate formation having a vertical dip, in which the strata varied in hardness. It passed through a hill which was wearing away, and had left two smooth unbroken walls 20 feet thick and from 20 to 80 feet in height. They were about 60 feet apart and ran parallel to each other as straight as a line from the bottom to the top of the hill. The space between them presents the appearance of a well traveled road. This is a hunters paradise. We saw tracks of elk, deer, and sheep in great abundance and for several miles were scarcely out of sight of antelope, but as we have fresh meat enough to supply our present needs we did not attempt to shoot any.

Sept. 14. Soon after starting this morning we crossed a low ridge, and as we were descending it, discovered an Indian two miles away driving a band of twenty or twenty-five head of horses towards a clump of willows, from which smoke was rising. It was evident that he had seen us and was hurrying to camp to give notice of our approach. We halted on the spot and called a council of war, for we
were not expecting to meet any Indians here, and thought it might possibly be a war party. Knowing that it would be impossible to avoid them, we decided to make preparations to give them a warm reception in case they made any hostile demonstrations, so we overhauled our packs, tightened the cinches of our saddles, recapped our revolvers, filled our belts with cartridges for our rifles, and putting on a bold front, started forward, changing our course slightly to the left to shun them if possible. In a few moments two of them came dashing over the prairie, and on coming up proved to be Tonkeys or Sheepeaters and consequently friendly. We exchanged the compliments of the season, and made such inquiries as their limited stock of English and our knowledge of pantomime would permit. It was curious to notice how quickly each of our party betrayed his ruling passion. The captain, who has the reputation among his friends of being a ladies man, enquired if they had any squaws at their wickiup; B, who is of a speculative turn of mind, wanted to swap something; and the topographical engineer, who prides himself on being a sportsman, wanted to know of them if there was much game in the vicinity, and what luck they had hunting.

They informed us that there was a party of thirty lodges of Sheepeaters eight days ahead, so that was the piece of intelligence the old squaw tried to convey to us day before yesterday. We did not visit their camp and one of them accompanied us four or five miles, begging for ammunition and matches. For several miles we traveled on a high rolling table land diversified by smiling lakes, picturesque rocks, and beautiful groves of timber. Two or three
miles to our left we could see the deep gorge through the mountains which the river had cut in flowing westward. As we descended from the plateau, we struck a trail, which had recently been traveled by a large party of Indians, and we followed it until it led us to the river at the head of a cañon. Here we camped for the night.

The river has resumed its northern course again, and from the hills to-day we could trace the deep channel through it flows for many miles from the south, between two parallel ranges of mountains that seem to be covered with dense timber. From the best information we have been able to get, we believe it is one continuous cañon from here to the falls, a distance of 25 or 30 miles, through which no one has ever been able to pass. We shall cross here and follow up the east branch a days travel, then turn in a S.W. course and try to strike the river again near the falls.

Sept. 15. Just below our present camp is a cañon three miles long, and while passing around it yesterday we caught glimpses of scenery surpassing in grandeur we have seen before, so we concluded to lay over one day and give it a more thorough examination than our limited time last evening would permit. We had breakfast by day-light and thinking it would be unsafe to leave our horses unguarded, it fell to my lot to remain in camp with the understanding that C. and E. should return early, and give me an opportunity to visit the cañon in the afternoon. For a while I busied myself by collecting firewood, attending to the horses, and writing up notes. Then I thought I would drop a line to the denizens of a deep pool near by, and truly my lines (a big trout took the first one) fell in pleasant places.
In ten minutes I had more trout floundering about on the bank than I knew what to do with. With two of the largest, some potatoes and bacon, I essayed a chowder, with such success, that after we had completed our dinner, our camp kettle reminded us of an effusion of that eminent poetess, so dear to all juvenile hearts, "Jack Sprat could eat no fat; His wife could eat no lean; So between them both they cleaned the plate, and licked the platter clean."

In the afternoon B stayed in camp, and the captain piloted me to the cañon. We climbed the bluff, keeping away from the edge of the precipice, until we had travelled about half the distance between the head and foot of the gorge. C led the way out to the edge of a timbered point, and in a moment I was standing by his side upon the verge of an overhanging cliff at least 700 feet in height. Language is inadequate to picture the scene that burst upon my sight.

The opposite bluff was about on a level with the place where we were standing, and maintained this height for a mile up the river, but gradually sloped away towards the foot of the cañon. The upper part presented an unbroken face with here and there a reentrant angle, but everywhere it maintained its perpendicularity; the lower part was composed of the debris which had fallen from the wall, and formed a rubble against the encroachments of the river; but the most singular feature was the formation of the wall. At the top was a stratum of brown basalt from 30 to 40 feet thick, standing in hexagonal columns; beneath this a bed of conglomerate 80 feet thick, composed of washed gravel and boulders; then another stratum of columnar basalt of about half the thickness of the first
... and lastly what appeared to be a bed of coarse sandstone. A short distance above us rising from the bed of the river stood a monument or pyramid of conglomerate, circular in form, which we estimated to be 40 feet in diameter at the base, and 300 feet in height, diminishing in size in an even taper to the top, which was not more than 3 feet across. It was so slender it seemed as though one man could topple it over. How it was formed, I leave others to conjecture.

We could see the river for nearly the whole distance through the ca
canon, now dashing over some minature cataract, now fretting against hugh boulders that seemed to have been hurled by some giant hand to stay its progress; and now circling in quiet eddies beneath the dark shaddows of some projecting rock. The water is so trans parent we could see bottom from where we were standing even when it was sev eral feet in depth, and it has that peculiar liquid emerald tinge so characteristic of our mountain streams. On the left bank the wall is broken down in many places, and cut by transverse ravines, running back into the hills; the bluffs on this side are covered by a heavy growth of timber, which extends down to the slope of the river, where ever there is soil enough for a tree to take root. A half mile down the river, and near the foot of the bluff, was a chalky looking bank, from which steam and smoke were rising, and on going to the spot, we found a vast number of hot sulphur springs, none of them very large, however. Steam was issuing from every crevice and hole in the rock and being highly impregnated with sulphur, it through off sulphuret ed hydrogen, making a stench that was very unpleasant. All these
crevices were lined with beautiful crystals of sulphur as delicate as frost work. At some former period, not far distant, there has been a volcanic eruption here; much of the scoria and ashes which have been thrown out, have been carried off by the river, but enough still remains to form a bar 75 to 100 feet in depth. Smoke is still issuing from the rocks in one place, from which a considerable amount of lava has been discharged within a few days or weeks at farthest. While we were standing by, several gallons of black looking liquid ran down and hardened upon the rocks. We broke some of this off, and brought it away, and it proved to be sulphur, pure enough to burn readily, when ignited. In passing over this place, I carefully picked my way, fearing lest the ground should give way beneath my feet, and let me through; but the captain, with the most reckless abandon, had to snuff the vapors from every crevice, and test the temperature of every spring. He barely missed paying for his rashness, for while descending a steep embankment, from which the steam was rising, in a hundred jets, one foot broke through the crust formed by the crystallization of sulphur across the top of a crevice 15 inches wide and several feet in depth. A headlong stumble, which ended in a roll into a bed of ashes saved him, for on lowering the thermometer into the hole by a string, the mercury instantly rose to 194 and he concluded that a fall into that hole would have "cooked his goose". He took it very coolly, considering the temperature, and went on collecting specimens for his cabinet, as though nothing had happened, and soon had enough to load a mule, consisting of sulphur, carbonate of lime, pumice stone, basalt and cinders. These he very considerately consigned to my keeping, and as I have always had a considerate
able aversion to carrying more than I can lift, the most of them are lying there yet. The deepening shadows admonished us that the afternoon was waning, and as we had another place of interest to visit we reluctantly left the springs, climbed the steep bluff again, and returned to the head of the canon. Here a stream of considerable size, that arises in the mountains away to the west goes dashing along the bed of a deep ravine, over a successions of cascades, which increase in size and beauty, and culminate in a fall of 138 feet. Thence flowing between vertical walls, which taper off towards the river it finally steals out in a gently flowing current and quietly unites its waters with the Yellowstone. From this point we followed up the ravine to the foot of the falls. Here we found an amphitheater oblong in shape, some 329 feet in length by 200 feet in width, nearly enclosed by a perpendicular granite wall between 200 and 300 feet high. The rock has a coarse rotten texture and the work of disintegration is rapidly going on; consequently there are no sharp angles or deep fissures. The sides around the fall were covered with lichens, which being constantly wet with spray, gave the wall the appearance of being painted green of the deepest hue. About half way up the stream seemed to burst out of the side of the wall, and fell in a body of spray into a deep pool. Night was approaching, so we retraced our steps down the ravine and back to camp where we arrived a little after dark, hungry and tired.

Sept. 16. We broke camp at seven o'clock, forded the river and climbed the opposite bluff, still following the Indian trail. Our course was easterly around the base of the mountains, until we came
to the east fork, nine miles above its junction with the main branch. Here the mountains recede, leaving a beautiful valley, 7 miles long from north to south. We traversed its entire length, seeking in vain for water and a camping place, and at the upper end entered a forest of heavy timber expecting to make a 'dry' camp. After penetrating four miles into the timber, we found an open glade, where coarse grass grew in a dried marsh. By digging down two feet we got water for our horses, and to make tea for ourselves, and made camp. Here for the first time since starting we experienced a feeling of loneliness. Our field of vision is circumscribed to the narrow limits of a few acres, bounded by a dense forest of spruce and pine, from the somber depths of which no sound arises, save the mournful sighing of the wind through the branches. As darkness approaches, the voices of the night break in upon the prevailing stillness; the wolf scents us from afar, and the mournful cadence of his howl adds to our sense of solitude; the scream of the mountain lion awakens the sleeping echoes of the adjacent cliffs, and we hear the elk whistling in every direction; but perhaps these are unusual sounds, and are now raised in protest against the approach of the common enemy. Even the horses seemed filled with a feeling of dread, stop grazing, raise their heads to listen, and then linger around our campfire, as though their safety lay in our companionship. After dark the elk crowded in to the edge of the clearing, until we could see among the trees their eyeballs gleaming with the reflection of the campfire. By firing two shots, we stamped them, but their bugling continued throughout the night from higher on the mountain side, and the wild sounds kept us wakeful.
to the east fork, nine miles above its junction with the main branch. Here the mountains recede leaving a beautiful valley, 7 miles long from north to south. We traversed its entire length, and at the upper end entered a forest of heavy timber, into which we penetrated four miles, and camped in an open glade. Here for the first time since starting we experienced a feeling of loneliness. Our field of vision is circumscribed to the narrow limits of a few acres, bounded by a dense forest of spruce and pine, from the somber depths of which no sound arises, save the monotonous sighing of the wind through its branches. As darkness approaches, the voices of the night break in upon the prevailing stillness; the wolf scents us afar, and the mournful cadence of his howl adds to our sense of solitude; the roar of the mountain lion awakens the sleeping echoes of the adjacent cliffs, and we hear the elk whistling in every direction; but perhaps these are unusual sounds and are now raised in protest against the approach of the common enemy. Even the horses seem filled with a feeling of dread, stop grazing, and raise their heads to listen, and then hover around our campfire, as though their safety lay in our companionship. We pile up the logs, and build a fire that shall last all night, and then seek; "Tired nature's sweet restorer, balmy sleep!"

Sept. 17. It rained a little during the night, and in the morning the sky was overcast, and had every appearance of an approaching storm, but as the grass was very poor, we deemed it necessary to move camp. Six miles hard traveling over steep ridges and intervening ravines brought us near the summit of the divide between
the forks of the river, where we found all the requisites for a camp-
ing place, wood, water, and grass, and as the storm was about to set in
we took shelter beneath some spruce trees, pitched our blanket tent,
and protected it by thick boughs on the windward side. It commenc-
ed snowing about 12 o'clock, but it melted as fast as it fell. The
storm continued during the afternoon, but we were well prepared for
it and got along nicely. The poor horses suffered though, and we
were obliged to picket them to prevent their running away. We saw
a great many deer to-day and judging from their tracks, elk are also
very abundant.

Sept. 19: We have laid in camp all day; the storm still continues,
ice formed a quarter of an inch thick during the night, and there is
six inches of snow on the ground. The situation begins to look dis-
agreeable.

Sept. 20. It was clear and cold this morning, but the sun shone
bright, with promise of warm weather again in a few days. Upon
reaching the summit, we got an extended view of the surrounding
country. To the eastward, at our feet lay the little valley of the
east fork, below the line of snow, and apparently in another climate.
The serrated peaks of the Big Horn range beyond glistened like bur-
nished silver, in the sun-light, and over towering them in the dim
distance, the Wind River mountains seemed to blend with the few
fleecy clouds that skirted their tops. Turning in the opposite
direction, as far as we could see from the N.W. around to the S.E.,
mountain and valley were covered with timber. In contrast with the
barren snow capped peaks behind us, the dark green foliage deepened
in hue as it receded, until it terminated at the horizon in a boundless black forest. In several places, a few miles to the southward, we could see dense clouds of steam, rising above the treetops, indicating the location of tremendous hot springs. We took the bearing of the place where we supposed the falls to be, and shaped our course, so as to visit some of the largest springs, and eagerly started forward, down the western slope, and entered the forest. We soon found travelling very difficult, for in addition to rough ground, we had to pick our way through fallen timber, tangled and interlaced with underbrush, and were sometimes an hour in travelling a mile. It got better towards noon and we made tolerably good progress.

About the middle of the afternoon we came to a small stream of clear water, running in a N.W. direction. Our horses appeared to be thirsty, but we noticed that one taste of the water seemed to satisfy them; the mystery was soon explained, for upon trying it ourselves, we found that it had a stringent, sub-acid taste, like a mixture of alum, vinegar, and water. Two miles further on we found good water and camped. We have had a hard day's travel, and only made eight miles.

Sept. 20. An hour after starting we came to a gentle declivity at the head of a shallow ravine, from which the steam rose in a hundred columns, and united in a cloud so dense as to obscure the sun. In some places it spurted from the rocks in jets not larger than a pipe stem, and in others it curled gracefully up from the surface of boiling pools from 5 to 15 feet in diameter. In some springs the water was clear and transparent, others contained so much sulphur that they looked like pots of boiling yellow paint, and one of the largest was as black as ink. Near this was a fissure in the rocks
several rods long, and two feet across in the widest place at the surface, but enlarged as it descended. We could not look down to any great depth, on account of the steam, but the ground echoed beneath our feet with a hollow sound, and we could hear the waters surging below, sending up a dull resonant roar, like the break of the ocean surf into a cave. At these springs but little water was discharged at the surface; it seemed to pass off by some subterranean passage. A half mile down the ravine it broke out again; here the springs were in groups, spreading out over several acres of ground. One of these groups, a collection of mud springs of various colors, situated, one above the other, on the left slope of the ravine, we christened "The chemical works". The mud as it was discharged from the lower side gave each spring the form of a basin 10 by 30 feet in or pool. At the bottom of the slope was a vat, where all the ingredients from the springs were united, and simmered down to a nasty greenish-yellow compound of the consistency of 'hasty pudding'. Three miles further on we found more hot springs, along the sides of a deep ravine, at the bottom of which flowed a creek 20 feet wide. Near the bank of the creek, through an aperture, four inches in diameter, a column of steam rushed with a deafening roar, with such force that it maintained its size for 40 feet in the air, and then spread out, and rolled away in a great cloud toward the heavens. We camped near by, and spent the afternoon in examining the springs and other wonders about the place. We found inexhaustible beds of sulphur and saltpeter. Alum is also abundant; a small pond in the vicinity, some 300 yards long and half as wide contained
as much alum as it could hold in solution. The mud along the shore was white with it, crystallized by evaporation. Our supply of fresh meat was getting low, so towards evening, I went hunting and succeeded in killing a fine elk within a mile of camp.

Sept. 21. A pleasant ride of eighteen miles over an undulating country, covered with a small growth of scattering pine with no underbrush or fallen timber, brought us to the great canon two miles below the falls. We got a distant view of them, but there being no grass convenient we passed on up the river a half mile above the upper falls and camped on a narrow flat close to the river bank.

Sept. 22. We spent a day at the falls; a day that has been a succession of surprises, and we return to camp, realizing as we never have before, how utterly insignificant are man's mightiest efforts when compared with the fullfilment of the omnipotent will. Language is inadequate to convey a just conception of the awful grandeur and sublimity of this masterpiece of nature's handiwork. In my brief description I shall confine myself to bare facts.

(See published account)

Sept. 23. We broke camp at seven o'clock, intending to make a good day's drive, but found so many attractions along the way, that night overtook us only twelve miles from the falls. From this place to a point one mile above the falls the river bears N. 45 W. and from the falls to the forks, a distance of 35 miles its general course is N. 45° E. Unlike the dashing mountain stream we have followed so far, it is here wide and deep, flowing with a gentle current along the foot of low hills, or meandering in graceful curves through grassy meadows. The country is also changed in appearance. Instead
of rugged mountains and deep defiles, we have gently rolling hills shallow and wide water courses. This is the northern slope of a wide plateau between the waters of the Yellowstone and Snake rivers. It is covered with timber except along the margin of some of the streams. We saw myriads of ducks and geese and the captain displayed his skill with his winchester rifle, by taking a long shot at a flock of geese, standing on a sandbar on the opposite side of the river, and knocked over two in quick succession. Six miles from camp we found a ford, and crossed over to the left bank to visit some hot springs in the hills, a mile from the river. These were larger than we have seen before, but were of the same general character. Near our present camp, we came to another collection that deserve more than passing mention.

(See published account.)

Our camp is half a mile away from it, and yet we can distinctly hear every explosion and almost imagine we can feel the ground tremble beneath our feet, as it does at each pulsation in the immediate vicinity. Three hundred yards to the west of the mud cave is another that discharges pure water. The entrance is in the form of a perfect arch, 7 feet in height by 5 feet in width, and maintains this size as far back as we could see; the floor being covered with hot water prevented our exploring it. A short distance below these caves was a shallow pool, 75 feet in diameter, in which clear water on one side and yellow mud on the other, were gently boiling, without mingling.
Sept. 24. Eight miles brought us to the Yellowstone lake. The main body is 10 miles long from East to West, and 16 miles long from North to South, but at the south end it puts out two arms, one to the S.E. and the other to the S.W., making the entire length about 30 miles. Its shores—whether gently sloping mountains, bold promontories, low necks of land, or level prairies are everywhere covered with timber. There are three small islands which are also heavily timbered. The outlet is at the N.W. extremity. We followed along the north shore five miles, and camped on a patch of open prairie at the termination of the north arm. Three miles to the east of us, at the foot of a rocky bluff, we can see steam rising from a great number of hot springs, some of them apparently at the waters edge. The shallow water in some of the coves affords feeding ground for thousands of water fowl, and we can take our choice of ducks, geese, brant, pelican, swan, or trout. Our supply of provisions is getting low, which warns us that we must soon turn our steps towards home, and we have concluded to follow up the west shore to the head of the lake, and then turn to the N.W., cross the range, try to find the Madison, and follow it down to civilization.