

XXVII.—REPORT OF OPERATIONS AT THE UNITED STATES  
TROUT PONDS, McCLOUD RIVER, CALIFORNIA, DURING THE  
SEASON OF 1879.

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BY LIVINGSTON STONE.

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Hon. SPENCER F. BAIRD:

SIR: In pursuance of your instructions to establish a station for taking and distributing the eggs of the California brook trout (*Salmo iridea*), I examined all the streams emptying into the McCloud River for a distance of twelve or fifteen miles above the salmon-breeding station, and, on the 25th of July, selected a location for the purpose mentioned at the mouth of a stream on the east side of the McCloud, four miles above the salmon fishery. The location is eminently favorable for the work, and possesses the two essentials for a trout-breeding station, viz, great abundance of clear, cold water, and excellent facilities for capturing wild trout for breeders. It is also only four miles from the fishery reservation, which will undoubtedly prove to be a great convenience in the carrying on of the two places.

The name of the stream which was selected for the trout-breeding station is the George Crook's Creek, a creek deriving its name from that of a white settler who was murdered there by the McCloud Indians in 1873.

We found everything there, of course, in its primeval condition, and had to do a great deal of hard work to grade the place properly, and to bring a sufficient supply of water to the requisite elevation. This work, and the catching of breeding-trout, occupied most of the time till about the 1st of September, when we began to put up the hatching-house and dwelling-house.

The greatest drawback to the place is that it is approached only by an Indian trail from the fishery reservation, and all supplies of every description have to be packed upon the backs of men or horses. It would not be very difficult, however, to build a wagon-road there, and some day this will, perhaps, be done. When this road is built I think it will be the most favorable location for trout-breeding that can be found in California.

The establishment of a trout-breeding station in an uninhabited region like the cañon of the McCloud furnishes so many peculiar features that you will perhaps excuse considerable detail in describing how it was accomplished.

The first thing was to find a suitable location. With this object in

view a party of three, consisting of Mr. Greene, Mr. Redcliff, and myself, started one July morning on horseback for an expedition up the river, bringing a fourth horse along with us to carry our blankets and provisions. Taking the narrow Indian trail on the west side of the river—for there are no roads on either bank—we followed it for eight miles to Mr. Campbell's ranch, where we forded our horses and took the trail on the east bank of the river. There are no white settlers above this point, and our ride from here was through a country wild and picturesque in the extreme. The trail, probably the same that the Indians have traveled for centuries, wound over the cliffs and around the hills of the cañon, among some of the most magnificent landscapes in the world. We were soon inclosed in a circle of almost inaccessible mountains, where high, precipitous cliffs extended down sometimes to the water's edge, and through which the McCloud somehow wound its tortuous way, not so much a river here as a succession of foaming cascades. The Yosemite Valley is sublime and stupendous in its grandeur, but there is a brilliancy and enchantment about the beauty of the Upper McCloud that I have never seen in the Yosemite or anywhere else. Our path, as may be supposed, was far from being smooth or safe. Being very little traveled, as there are but few Indians so far up in the mountains as this, the trail was sometimes so rough and narrow that it seemed as if horses could not possibly keep their footing; and, rough and narrow as it was, the trail sometimes led along the very edge of rocky, precipitous bluffs, where a misstep of two or three inches from the path would throw horse and rider down hundreds of feet into the cañon below. Our horses, however, were sure-footed, and about nightfall we safely reached the mouth of Nosonnie Creek, where I had been informed there was a good site for trout ponds. As we approached the creek, we saw, across an intervening gulch or two, a waving field of wild oats, yellow and bright as gold, where we decided at once to camp for the night, the long, clean oat straw furnishing a luxurious bed for the campers as well as abundant food for the horses. The night, passed under the open California sky on our deep beds of straw, was delightful, and we awoke the next morning rested and refreshed, having been disturbed but once in the night, owing to the approach of a bear or panther which partially stampeded the horses.

The next morning we made a thorough examination of the creek and found it wholly unsuitable for a trout-breeding station. The gulch through which it flows is narrow and almost a solid mass of bowlders. The water was warm, which implies droughts in the summer and floods in the winter, and what was alone sufficient to settle the matter, the approach to the creek was altogether too difficult to make a location there at all desirable unless the place furnished great counterbalancing advantages. This not being the case, and as any more distant point would be out of the question, we took up our line of march down the river again, keeping on the east side trail all the way. We crossed sev-

eral streams on our way down, but found none that were suitable till we reached the George Crook's Creek, four miles from home. Here, to our great delight, we found almost everything favorable. The stream ran clear and cold, and though not so large as Nosonnie Creek, it was large enough. There was a long reach of comparatively still water in the McCloud at this point, where set-lines for catching parent trout could be advantageously set. There were sugar pines near for cutting out shakes and lumber, and oaks for fire-wood. There was a flat piece of ground just where we wanted it for the buildings and ponds, and although it was evidently going to be no small undertaking to get the water from the brook to the station, it was nothing compared with the immense labor it would have taken at Nosonnie. I was not long deciding to locate here, and on the next Monday morning at sunrise had taken possession of the land and had posted a notice on one of the trees that I had taken up the claim.

We immediately went to work to build a rude brush camp and a temporary house, and to repair the trail from the creek to the salmon fishery, so that I could send up pack-horses with the tools, provisions, cooking utensils, and other things needed at the camp. This preparatory work was a labor of some days, the nights of which we diligently improved by catching parent trout for the ponds, the month of July being the best month of the whole year for catching trout in the McCloud River. As soon as possible I sent up a boat and a stove, six Indians taking them up through the rapids by great exertions in a single day.

As rapidly as we could we got to work on the buildings and ponds, and especially on the ditch which was to take the water supply from the creek. This last was a toilsome work of weeks, as we had to dig through an elevation which, though not large, was almost filled with immense bowlders. Another laborious task was getting the lumber for the buildings to the camp. To carry a single board over these mountain trails in a burning sun is no slight task, and to carry all that were needed for dwelling-house and hatching-house, besides the provisions, tools, and furniture, was a great labor. The work progressed, however, until now we have a thoroughly appointed trout fishery with a commodious and comfortable dwelling-house, and probably the finest collection of trout ever brought together in one place.

I cannot forbear mentioning here one or two little incidents which, though not of much importance in themselves, serve to illustrate some of the peculiar features of working in this uninhabited country.

Six years ago, when we first located the salmon fishery on the river bank, there was but one white settler on the McCloud. His name was George Crooks. In the fall of the same year he was murdered on his own ranch by the McCloud Indians, because they said the land belonged to them. It is at this place that we have established the trout-breeding station, and it must be remembered that the minds of the Indians have

not been changed in the least since they killed George Crooks and threw his body into the river.

A few days after we had built our camp and begun work there, last July, it happened one Sunday that one of the men was left alone in charge of the camp. As the day wore on he thought he heard a slight noise near him, and on looking up he saw to his great surprise three Indians standing over him, each with a drawn knife in one hand and a rifle in the other, and here, on the very spot where the last settler was murdered, they told him the same story that they had told the murdered man, viz, that this was their land, that the white men had no business there, and that they did not want white men on the McCloud River at all. The young man had no weapons about him, and was wholly at their mercy. They would undoubtedly have killed him, as they would certainly have been glad to do, if they could have summoned up the courage to face the consequences. But though they staid with him three hours, their valor did not reach this point, and they finally left him as they found him, in possession of the place.

Some time after, in November, the same young man, whose name is Loren Green, in climbing a bluff to recover what he supposed was our stolen dog, found the dog to be a panther, which prepared to attack him so suddenly that he barely escaped with his life, by jumping into his boat and pushing out into the river. I think I may say to my fellow trout-breeders in the settled States of the Atlantic coast, that building trout-ponds here is not like building trout-ponds at home.

At first the men all slept, not only under the open sky, but on the ground. After a while, however, they requested me to get them hammocks, because the scorpions and rattlesnakes, of which they had killed a considerable number, were so thick. Of course, I complied with their request, but it did not prevent one of the men from being struck on the leg by a rattlesnake, his heavy boot saving him from receiving a fatal stroke. Nor did it save Mr. Myron Green from a nearly fatal bite from a tarantula. Mr. Green, on retiring to his hammock for the night, threw his clothes upon a rock near by. During the night a tarantula crawled into his clothes, and on Mr. Green's dressing in the morning, he was terribly stung by the venomous creature. Moistened tobacco was immediately put upon the wound, and a tumberful of alcohol administered inwardly, after being somewhat diluted by water. This checked the progress of the poison, and saved Mr. Green from a very serious if not fatal consequences.

I mention these incidents merely to show that with tarantulas, scorpions, rattlesnakes, Indians, panthers, and threats of murder our course here is not wholly over a path of roses.

As the spawning season of the trout at this point does not come on till the beginning of the next year, I can do nothing more in this report than to give a description of the buildings that have been erected and of the work that has been accomplished preparatory to the taking of the

eggs, which I will now endeavor briefly to do, leaving the subject of the natural history of the trout to some future time, after we have had experience in hatching them and extracting their eggs.

A ditch 220 feet long, 5 feet deep, and averaging 3 feet in width, conveys the water from the creek to the trout-ponds. To turn the water of the creek into the ditch, a dam 30 feet long and two feet high, built of solid rock and heavy timbers, has been constructed across the creek for a protection against high water, which, in these mountain torrents, is very formidable. A breakwater of solid rock has been built at the head of the ditch, 55 feet long and 4 feet square. The water for the trout-ponds is taken directly from the creek into the supply ditch by a plank box 12 inches square. The ditch first delivers the water from the creek into a pond 18 feet long, 16 feet wide, and 6 feet deep. From this pond a short ditch takes the water into a second pond 24 feet long, 12 feet wide, and 7 feet deep. Thence the water proceeds partly by a ditch and partly in a natural channel back to a lower point of the creek from which it was taken.

Just below the ponds, and between them and the McCloud River, is the hatching-house, 24 feet long and 18 feet wide, with 8 feet posts. The hatching-house, which is on the same general plan and finished with the same apparatus as the hatching-house at the salmon-breeding station, has a hatching capacity of 6,000,000 trout eggs.

Adjoining the hatching-house on the south is a dwelling-house substantially built, 30 feet long and 18 feet wide, with an addition on the south 18 feet by 12 feet, with a shed roof. There is also a long supplementary ditch, 400 yards in length, carrying 40 inches of water, miner's measure, taken from a point higher up the creek, which, in case of accident to the original supply ditch, would bring water to the ponds till the injuries to the original ditch could be repaired. Another ditch is so constructed that it can irrigate several acres of clear and fertile land, which can then be used for a garden. All these structures are placed above the highest high-water mark of the river, so as to be entirely free from danger when this formidable river is at its highest. This completes the enumeration of the most important structures that have been built at this point; but in neighboring creeks two large fish-traps have been placed to catch the wild trout of the river when they come up to spawn. The traps are 14 feet long, 8 feet wide, and 5 feet deep. They are built of poles, with heavy timbers to hold them in place. A dam and rack are built across the creek, similar to the dam and rack at the salmon station on the McCloud, to force the ascending trout to the trap. The traps are covered at the top, so that when the high water pours entirely over them the trout cannot escape. By the help of these traps a large number of spawning trout are captured, which help very much to increase the yearly harvest of eggs.

In my next report I hope to give a detailed account of the catching of the trout and taking of the eggs, besides some new features in the nat-

ural history of the California trout, which have been obtained at this station.

I will merely add now that, at the present writing, December 5, 1879, we hope to secure during this first season of the United States trout-ponds on the McCloud River upwards of 300,000 eggs.

I will close this report by saying that an application to the President has been made for an extension of the present fishery reservation so as to include the trout-ponds. The application was originally made for a larger tract with especial reference to the Indians, but a modification was afterwards made in the application which restricted the extension to a tract of land reaching only from the mouth of the McCloud to a point eight miles above it. It is to be hoped that this extension to a point eight miles up the river will be made, for while this cannot injure the rights of any one, it will place the operations of the trout-pond station on a much securer basis, and will facilitate the work there in a very great degree.