

twenty-four monkeys," said he, "employed about my mines. They do the work of seven able-bodied men, and it is no reflection upon the human laborers to say that they do a class of work that a man cannot do as well as they. In many instances they lend valuable aid where a man is useless. They gather up the small pieces of quartz that would be passed unnoticed by the workingmen, and pile them up in little heaps that can easily be gathered up in a shovel and thrown in the mill. They are exceedingly adept at catching the little particles, and their sharp eyes never escape the very things that the human eye would pass over. When I went digging gold I had two monkeys that were exceedingly interesting pets. They were constantly following me about the mines, and one day I noticed that they were busily engaged in gathering up little bits of quartz and putting them in piles. They seemed to enjoy the labor very much, and would go to the mines every morning and work there during the day. It did not take me long to learn their value as laborers, and I decided to procure more. So I immediately procured a number, and now have two dozen working in and about the mines. It is exceedingly interesting to watch my two pet monkeys teach the new ones how to work, and, still stranger, to see how the newcomers take to it. They work just as they please, sometimes going down into the mines when they have cleared up all the debris on the outside. They live and work together without quarrelling any more than men do. They are quite methodical in their habits, and go to work and finish up in the same manner as human beings would do under similar circumstances."

A recent patent for hydraulic mining machinery specifies a combination of a lower sluice-box provided with riffles and having its exit end tapered or converging, the upper conductor having the "flaring" mouth-piece fitting in the converging end of the lower sluice-box, the upper sluice-box having the enlarged mouth portion and the reduced terminating portion, the upper walls formed with the transverse separating blocks, and the lower walls of the upper sluice-box being provided with riffles and the forcing nozzle above and below the lower sluice, whereby the forcing nozzles serve to force or drive the material toward the converging end of the sluice-box through the conductor to the enlarged mouth of the upper sluice, the separating blocks separating the gravel and lower riffles of the upper sluice receiving the ore and preventing it from being carried away and preventing jamming in the sluice.

In some blasting operations for removing submarine rocks lately carried out at Emmerich, on the Rhine, black powder was employed in water-tight cases, fired by safety fuse. The great difficulty occurred in tamping the shots under water; but this was at length successfully accomplished by running into the hole over the charge, by means of a funnel, quick-setting cement in a liquid state. The tamping, from 1½ to 2 metres long, was effected by means of tubular drifts, like gas pipes, toothed on their lower edge.

"Hope springs eternal in the human breast," especially in the mind of the mining manager. Read the reports: "Country remains hard and tight, requiring much shooting, but"—hope springs eternal—"we hope to strike something payable shortly." Another: "The reef has pinched right out. We believe that we are driving in the right direction, and have no doubt we shall strike it again." Once more: "All the workings are full of water, but I have no reason to doubt that the representations made by the previous proprietary will prove well-founded." If anyone has the patience to peruse the column of mining reports, he can put in the remainder of his spare time estimating how much "hope" will pan out to the ton if properly crushed and reduced. Well, it is hope that keeps mining operations going, and very often, we are glad to say, pluck and perseverance are richly rewarded.

## CORRESPONDENCE.

### Notes on a Visit to Cripple Creek.

SIR:—

It is generally thought that as regards mining the best things are put in the worst places, according to nature's law, "nothing without labor." In visiting a mine, one expects to go to the rudest and wildest region, and to climb up endless trails and go to almost inaccessible heights before one reaches the favored spot, where an excess of wealth has been concentrated in the rocks. A remarkable exception to this rule is Cripple Creek in Colorado, where the railroad carries you through the rocky passes and brings you up to a plateau, 10,000 feet or more above the sea, diversified by moderately high hills, where there is very little timber, and one can drive in a buggy to the pit mouth of near a hundred mines.

The Cripple Creek region is under the shadow of the famous Pike's Peak, the great landmark towards which the overland pioneer wended his way with wagon labelled "Pike's Peak or bust." Though tramped over for many years, no one imagined its dull looking grey rocks to be valuable, but about four years ago assays proved the worth of the ores, and exploration showed that a large region contained deposits of mineralized rock that ran high in gold, some kinds known as silverite and telluride going up into the thousands of dollars to the ton, and large masses of rock yielding an average of \$40 or \$50 to the ton, the cost of treatment and mining and transport being \$15 to \$20.

Although elevated 7,000 to 10,000 feet, there is but little snow, waggons are on wheels all the year; railroads run to the pits and Cripple Creek is the ideal mining camp of the world.

The Cripple Creek District contains about a dozen towns within a radius of four or five miles, some of them quite thriving cities. Cripple Creek is the largest town, and the camp contains about 20,000 inhabitants.

Cripple Creek had two disastrous fires at the end of April and the beginning of May this year. The business part of the town was mostly wiped out, but a month later many structures had arisen and good brick buildings were replacing the former tinder-like structures. The scene presented by the streets was unique and indescribable, and the study of faces and costumes was most interesting. Many gleams of humour were manifested by the burned-out business men, who were starting anew in tents or shanties, awaiting the rearing of new edifices. One tent bore the inscription "The Rocky Mountain Liquor House, the same old Sam always at home," another inscription was, "The Roxbury Kye Man is still here," "Nolan's Place" designates a store.

The railroad roams around among the mines and before its terminus is reached nearly all the principal producers of ore have been pointed out by the obliging newspaper man. Here is the Independence mine, the greatest of all, owned entirely by one man, Mr. Stratton, who a few years ago was poor. The mine has fine buildings and machinery, and a shaft 700 feet deep, and is turning out any amount of wealth, and could produce much faster, but the owner "doesn't know what to do with the money." There is the Portland, the next richest mine. Operated first by three poor men, it was bonded for \$200,000 and \$20,000 cash down to the Vanderbilts and others who sank their money and threw up the bond. The owners went on, got pay rock from the grass roots down, packed ore on their backs in the night and were able to pay for defensive litigation, no one knowing where the money came from. Now the mine is paying \$60,000 a month, and the owners are millionaires. "Yet they don't put on no a.s." The Anna Lee is pointed out, that had "a forty foot vein of three ounce ore," but a cave-in that cost life has hindered work.

The Anaconda started in on rich ground of such extent, that at first they simply "shipped the hill." A thriving town of the same name, with electric lights has sprung up as the result of this industry. "The Pharmacist," developed by a former drug clerk, is another of the successful mines. The Elkton, located by a poor prospector, has given him a fortune, and is making money for the company that operates it. The Victor, a million dollar mine, operated by a French syndicate, is pointed out, and the thriving city of Victor adjoins it with many good buildings and electric light. The mines of Raven Hill appear and the story is told of the operations of Baron Reichenow and a great syndicate with the Earl of Essex at its head. The Altman mine is seen surrounded by the town of Altman, the highest mining town in America, 11,000 feet above the sea. The Isabella, the oldest mine in the camp, is remarked upon, and among other noted mines are mentioned the American Eagle, Last Dollar and Vindicator. A mine with a remarkably written name is the X I O U S.

A drive in a light buggy with a lively span of black horses took in all the mines and towns in the course of three hours. Distant ranges of mountains 130 miles away were distinctly visible, and the cool dry rare air was exhilarating though difficult to inhale in long breaths when climbing rising ground. Concentrators and samplers abound, and two railroads take the ores to smelters at Denver and Pueblo. About \$12 to \$20 is believed to cover all costs, and the ore of the best mines is thought to average \$40 to \$50 a ton, with occasional shipments that go from \$100 to \$200. The railroads make money, charging 43 cents per 100 lbs. for a 30 mile haul, and the golden product brings wealth to many industries accessory to mining.

From one point in the drive over 500 prospect holes were counted on the hill-sides, the dumps of most of them probably being monuments of disappointment. Thousands of these signs of exploration were seen.

Many of the mines are worked on leases of a year's duration. The owner receives 15 to 40% of the output and gets his mine developed without any expense. If the mine turns out rich he gets the full benefit on the expiration of the lease. The system is not thought to be generally advantageous to the lessee, as he has to make all the outlay and often puts in extensive machinery and plant, and has only a short term to reap profit. The Maloney lease, however, was said to have given \$100,000 gain in a year.

One man that was visited evidenced the struggle that these men who lease have to maintain. "It costs me about \$1,000 a month," said the man, "and so far our ore only averages \$10 or \$12 a ton, though we get some high assays. But a man who has worked in a mine where they are getting silverite, says they went through just such rock as ours before they struck the rich ore, and I think it may come in with us soon. But I don't know how to pull along. I would give a half interest to anyone that would pay expenses of working." The wife put in a longing wish to get done with it and get back to the home where they had comfort even if not wealth. Many are called to mine but few are chosen to get rich at it. But the few successful ones give the call to the many.

There are about 100 working mines at Cripple Creek and as many as 25 are believed to be making profitable shipments.

An unusually large number of "wildcats" have been floated on the reputation of the paying mines, and investors need to be cautious in placing their money.

ROBERT C. ADAMS.

Montreal, 15th August, 1896.