THE MINES OF CASTLE.

The first discovery of mines in Castle mountains, Montana, was made in 1885. They at once attracted the attention of the mining world and have ever since held a prominent position in public estimation. A great many discoveries have been made and an unusual amount of energy has been displayed in developing quite a number of these prospects into mines. This was to be expected where rich ores in such abundance moved the muscles wielding the pick and the shovel.

Castle is a mining camp built in a beautiful sheltered valley at the southern base of Castle mountain. This mountain received its name from the castellated rocks which form the very attractive feature of its crest and peaks. The principal mines are on a series of rounded mountain spurs from one to six miles from the town. The mountains are limestone porphyries, granites and various eruptive rocks. The ores occur in contact veins, crevice veins, blanket veins and veins of segregation. Many of the best mines are opened along the line of contact between the limestone and porphyry. The ores are oxides and sulphurets of iron, carrying gold, silver and lead, carbonate and sulphuret of lead, rich in silver, carbonates and oxides and sulphurets of copper, containing gold and silver, oxide of manganese, containing gold and silver and sulphuret and other ores of silver. These ores vary in richness all the way from one or two dollars up to ten or twelve thousand dollars per ton. A very large number of the mines of Castle have a cap of iron ores, known to old English miners as gossan, and though these caps are not rich in gold and silver and copper, they have been in all ages and in all great mining countries, esteemed a good indication of rich mines. This opinion was so strong and prevalent among the miners of Europe at a very early day in the history of mining, that it found expression in several languages, as shown by the "gossan hood" of Cornwall, "chapeau de fer" of France, and the "eiserne hut" of Germany. It even became a proverb in the early ages of mining, as is shown by the following, well known to German miners:

"Es ist nie nicht gang so gut
Der tragt nicht einen eiserne hut."
No mine is deemed so good
As one that has an iron hood.

Though the iron and manganese ores which form these caps are not, as a rule, very rich in the precious metals, they carry enough to make them very valuable fluxes to use with more refractory and richer ores. There is a furnace at Castle, which has smelted the ores from several of the Castle mines with what would seem to be good results. During the last fall it run 2,000 tons from the Cumberland, which yielded bullion worth some $90,000, and only a profit of $27 per ton on the ore delivered at the furnance. The Connellsville coke used cost $25 per ton, and the charcoal 15 cents per bushel. The bullion contains so large a per cent of lead that the freight and refining make a large reduction on what would otherwise be net profits. The refining cost $16 per ton, and the freight to Aurora, Illinois, cost $22 per ton; and the freight on coke by rail to Livingston and by wagon to Castle costs about the same.

Thus the freight bills alone exhaust the value of good ores. Hence none but the richest ores can now be worked at Castle. These figures show that a railroad to Castle would save in working the ores of that district $15 per ton. This $15 per ton would enable the miners to take out ores at a fair profit, which yield no profit under the present charges for freight on ores, fuel and bullion.

Hence a railroad to Castle would give a commercial value to ores which now have no sale, and would largely increase the value of the better ores. In fact a railroad to Castle would increase the value of all the ores in that district about $15 per ton, and this on a million tons would put $15,000,000 in the pockets of the Castle miners. And besides, the railroad would so reduce the cost of mining that the expense of taking out the ores would be much reduced. The whole region is well timbered with fir and pine, suitable for all mining and domestic uses; there is an ample supply of good water for all the wants of a large mining population; and Castle mountains are surrounded by a rich agricultural region ample to meet all the demands of any possible mining population.—*E. C. Swallow, in Montana Mining Review.*

ALASKA MINING NEWS.

The past season has witnessed in Alaska mining affairs a number of important strikes, the successful operation of a number of companies, and one or two failures. The season's operation of the Gold Mountain Mining Co. in Silver Bow basin, has been pushed to a successful termination; their ten stamp mill and tramway are erected, and the result of the trial run of the mill proved entirely satisfactory to the company.

The rapid progress in the operations of the Silver Bow Basin Mining Co. accomplishing a vast amount of work in a few short months, and the rapid manner in which the great tunnel is now being driven to completion, speaks of an early success to this company. We believe there is not a mining company now operating in Alaska that has a better or surer prospect ahead. The gravel is rich and of sufficient depth and body to last for a number of years, and the working of it although laid out on a grand scale, and involving the expenditure of much capital, is very systematically planned, and when once in operation, an enormous amount of gravel can be handled daily and at such small expense per cubic yard that it will be reduced almost to a minimum.

Development work on the Sheep creek silver belt has shown up a new departure in Alaska mines, and also has shown up two or three fine properties, mines that next season will be placed on a paying basis.

The great Treadwell mill continues to run steadily, and, we hear it reported, far more successfully under the new management than under the old. The company are now increasing the capacity of the chlorination works, to take care of the vast pile of accumulating sulphurets. The mill turns out its regular monthly shipments in gold bricks, which is a sufficient guarantee that the mine is still yielding its dividend.

We may confidently look forward to the erection of a large stamp mill on the Mexican property, on Douglas island, during the year 1890. This is a property that will not end in a failure for lack of ore, as there is now nearly as large a body in sight on it as on the Paris lode.

The output from Silver Bow basin placers has been good, with every probability that the yield will be much greater next year, pending the starting up of the Nowell placer mines.

For the small amount of development work, the Salmon and Lemon creek properties made a good showing, and next season we may expect to see considerable work going on there.

The Berner's bay district, although one of the most promising in Alaska, did not receive the attention the past season that was expected. Although two or three companies were active there during the summer, and expended several thousand dollars, many of the most promising claims were allowed to go with but merely the annual assessment work. But we learn that during the winter in all probability several important deals will be made on properties there, in which event considerable work will be done there next summer.

The Bear's Nest, which now savors so strongly of an utter failure, has been a severe blow to Alaskan mining interests.