DREDGE MINING IN BRITISH COLUMBIA.

(By Wm. M, Brewer, A.M.A.I.M.E., Etc.)

L EASES for dredge mining on the Fraser, North Thompson and several of the creeks in British Columbia have been a popular acquisition by many syndicates and individuals during recent

wars. Prospecting work has determined that, especially in the Fraser and North Thompson Rivers, the bedrock carries pay in placer gold in variable quantities. Besides the bedrock, there are also a number of bars on both rivers which cannot be reached by a placer miner, and consequently in order to win the gold which these bars contain dredge mining must be resorted to.

At first it was thought that this method of mining would be a very popular one in the province, because it appeared as though there would be practically no difficulties to contend with, except, the rapid current. But practical experience has demonstrated that in dredge mining as well as every other character of mining, it is not all "beer and skittles." In the first place the operators found that a type of dredge machinery such as a suction dredge was useless for the work, because although it could be operated on the sand bars, yet whenever the bedrock was attacked the results obtained were entirely unsatisfactory. The next character of machinery used was the single dipper as built by the Beattie Dredge Company, of Ontario. One of these was built and operated at Boston Bar about three miles from North Bend on the Fraser River. During 1898 and a portion of '99 this dredge was worked successfully though since that time it has been laid up, but for what reason has never been made public. During the time this dredge was operated, it is reported that the clean-ups were very satisfactory.

The next season's attempt at dredge mining was on the Fraser River near Lytton, where an English company, installed a bucket dredge designed after the same pattern as is used in New Zealand with about 30 buckets working on an endless chain. All the machinery for this plant was brought from England and when set up ready for operating is said to have reached a cost of nearly \$100,000.00. Operations have been carried on with it at intervals since its installation in 1900, until last autumn, but during the past winter a s.rious accident happened, the entire plant sinking to the bottom of the river. During the operations various reports were circulated as to the results obtained and various reasons given why the plant was not kept in continuous operation.

The latest attempt at dredge mining was on the North Thompson River some distance from the town of Komloops. The results from these operations have never been made public so far as I know.

In addition to the operations already referred to, there have been two or three attempts made to dredge the Fraser River in the vicinity of Lillooet, but up to the present time these have resulted in failure, owing chiefly either to the type of machinery installed or such accidents as losing the plant in consequence of its breaking away from its moorings and being carried down the stream by the strong current. During the present season, another attempt is to be made in the same locality and Mr. Robert Hamilton, of the Hamilton Manufacturing Company, is now on the ground constructing the plant and installing the machinery.

When the product of placer gold yielded by the Fraser River in days gone by is taken into consideration, together with the further fact that prospecting has demonstrated that the bedrock of the river carries values in paying quantities, it would seem as though operations by dredging should certainly result satisfactorily, and that a considerable quantity of placer gold ought to be won every year by this method of mining, but up to the present time the records show more loss than profit.

At frequent intervals one hears of new men coming in who represent themselves as being thoroughly experienced dredge miners, a majority of whom claim to have gained that experience in New Zealand, and several of these were employed in operating the dredge near Lytton. Although the results of these operations were not satisfactory, yet when we take the extracts from the report made by the directors of the company at the meeting held in London in December, 1002, which was reproduced in the recently published Minister of Mines' Report for that year we find much food for thought and reasons for the conclusion that either the machinery or the operators of this dredge were at fault for the poor recovery of gold, which practical tests showed was hoisted from the river and dumped into the revolving screen arranged for the purpose, which in its turn discharged the material on to the tables arranged for saving the precious metal.

The following paragraphs are taken from the report of the directors: "We have an average of the tests from September 29th to the first week in December. The average comes out at 49.50 grains per cubic yard (a grain of gold is worth about 5 cents.) Of course these tests vary very greatly; I find on this sheet that one comes out 21.3, the next 12.63 and another 8.91, but we never had one barren test." "This gives an idea as to the value of the ground being dredged, and there is no reason for thinking that this is an unusually rich bar or portion of the river. Mr. Turner dug a hole in the bar with the dredge and found below nine feet of water that the first two feet below gave 23.62 grains (of gold) per yard; the next two feet, 10.12 grains; and the next six feet is hardly worth working." As to working costs, the chairman said: "At present everything over an average of 20 ounces of gold per week is profit. The gold recovered amounted to £939 (\$4.695). We know positively, instead of that representing all the gold we should have recovered, "we have 'chucked' 99 per cent. of the gold we had on board overboard."

After looking over the field for dredge mining and taking into consideration the fact that the problem of hoisting the material from the river beds has been solved because both the single dipper dredge installed near North Bend and the buckets on an endless chain which was the type installed near Lytton have both been thoroughly proven in that respect, one is forced to look further for the cause of the unsatisfactory