results which have so far been obtained from this method of mining in British Columbia.

From the remarks quoted above from the Chairman's report of the English company operating near Lytton, it is quite evident that at least portions of the river beds carry sufficient values to give very satisfactory results provided these values are saved.

Dredging machinery is to be installed in the Atlin District as well as in Lillooet during the present year. The operations will be watched with a good deal of interest, and there is no doubt that if the management have used good judgment in first prospecting the ground as thoroughly as possible before buying the machinery, and next in having purchased that type of machinery which has already proven its ability to raise the material from the river bed, the operations should result satisfactorily, provided the operators do not make the same mistake as was made by those in charge of the Cobbledick dredge when according to the chairman's testimony only about 10 per cent. of the gold taken from the river was saved.

British Columbia ought to afford great opportunities for the dredge miner, because of the number of rivers and the aggregate mileage along those rivers from which placer gold has been taken in the past by mining with the rocker or sluice-box. There are the Similkameen, the Tulameen and Granite Creek in the extreme southern portion of the province; the Fraser, North and South Thompson and tributaries of those rivers; the streams in the Omineca and the Cassiar and Atlin Districts. Reference to a map will show that the belt of country which forms the water-sheds of these various streams extends from the extreme south of the province to the extreme north of it, and covers a width which in places is not less than fifty miles.

Successful operations by even one company operating anywhere through this belt would undoubtedly be followed by the installation of plants in other portions, but when the past record of dredge mining in this province is considered, it is not at all strange that the industry does not assume greater proportions.

## THE IRON ORES OF THE COAST.

I N a recent issue of the MINING RECORD this subject was discussed by Mr. W. M. Brewer. The conclusions he arrived at differed in one or two material respects from those of the officials of the Mines Department, a brief summary of whose report is now given:

The chief importance which attaches to the British Columbia iron deposits is that they are practically the only known occurrences of iron ore in quantity on the northern part, at least, of the Pacific Coast and, consequently, iron manufactured therefrom would have the whole of such territory as a market.

In regard to this it might be appropriate to quote from the Annual Report (1901) of the Geological Survey of the neighbouring State of Wshington (page 256), in which State the general conditions in regard to fuel, fluxes, labour and geographical position are

very similar to those of British Columbia, excepting that the B. C. coal is undoubtedly higher grade and possesses better coking qualities. The report says:-

"Washington has plenty of material suitable for fluxes and no fear be felt in this particular. Labour is perhaps a little higher in Washington than it is in the East, but the difference would have little effect on the price (cost of production) of iron. The whole Pacific Coast would furnish the market, as very little pig iron, if any, is being produced in any of the States west of the Rockies, except Washington, at the present time (March, 1902), and the steel and iron being used on the coast is shipped from the East. The results shown here are rather against the probability of Washington ever becoming a very large producer of pig iron from ores occurring within her own borders, at least unless other deposits than those known at present are found. There is, however, one factor that has not been taken into consideration as yet, and that is the British ore occurring on Texada Island and perhaps some of the other islands of the Straits of Georgia.'

There is, therefore, a large and growing market for the products of the iron ores of the Pacific Coast, a market in which the coast producer would have an advantage over the producer of the East to the extent of the lower rate of freight, which is, however, to a certain extent offset by higher Western labour cost, and the less advantageous smelting mixture of ores at present obtainable. As to the best location for an iron plant to treat these ores, the market of the Pacific Slope is divided into that of the United States and of Canada, the former of which is much the greater, being protected by a tariff of \$4 per ton on pig iron smelted in Canada.

This larger market at present offers an inducement for the establishment of a furnace south of the international boundary line, but it is handicapped by an import duty of 40 cents per ton on all iron ores imported (at least 75 per cent. of the total supply) and an inferior quality of local coke as fuel. On the other hand, if iron works were erected in British Columbia, they would have the advantage of better and cheaper fuel and the product would earn the bounty offered by the Canadian Government.

The only iron smelting as yet attempted on this Coast has been with the use of charcoal as the principal fuel, a little coke from Carbondale having been used, however. On this Coast there are no hardwoods and charcoal has to be made from spruce or fir, producing a fuel which is very much inferior in quality to hardwood charcoal. Under these conditions it is a question whether charcoal iron can be produced here to compete with the Eastern product; certainly the Irondale furnace never paid running expenses, according to the report of the Geological Survey of Washington. Whenever, then, iron ore is smelted in British Columbia on an important scale, it will have to be with coke as a fuel.

The East Coast of Vancouver Island has, at Nanaimo and Comox, a plentiful supply of coal, much of which is suitable for coke-making. The collieries referred to mined during 1902 over 1,247,000 tons of

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