

MINING NOTES

BRITISH COLUMBIA.

Fifty thousand shares of Camp McKinney Mines company have been sold by J. Graham Ure to Chas. Needham of Vancouver.

At the annual general meeting of the B. C. Mining and Prospector's Exchange, Ltd., Vancouver, held on May 4, the following gentlemen were elected for the ensuing year: President, Mr. E. Skillman; vice president, Mr. C. Cattell; directors, Messrs. Atkinson, Bouchier, Hariman, Horton, Kitchen, Roblison and Wye.

The annual report of the British Columbia minister of mines is in circulation and in view of the very large development in that industry is a most interesting volume. The report gives a most complete resume of the mining progress of that province up to December last.

The ore shipments from the Rossland camp for the week ending May 6, and for the year to-day, are as follows: Le Roi, 1,795 tons for the week; 25,530 for the year; War Eagle, 1,697 tons for the week; 10,437 tons for the year; Iron Mask, 18 tons for the week; 760 tons for the year; Evening Star, 36 tons for the year; Deer Park, 18 tons for the year; total tons, 3,510 tons for the week, 36,781 tons for the year. The ore shipments are still below the average.

MINING IN CANADA.

Ottawa, April 27.—The annual report of the geological survey department for 1899 has just been issued. The aggregate value of the production of minerals in Canada during the year 1897 is \$28,661,430, being an increase of about 27 per cent over that of the previous year. This was largely accounted for by the great development of gold mining, particularly in the Yukon district, the value of the gold produced being more than double that for 1896. Several other mineral products, however, likewise show a very significant growth. The returns for 1899 are at this time not complete, but they are sufficiently known to indicate that the further increase of twenty-five to thirty per cent in value will appear in this as compared with 1897.

But there are other new gold fields in Canada, outside the Yukon, which promise satisfactory results in the near future. On the North Saskatchewan river alone over a quarter of a million dollars has been taken out by dredging. In 1893 about \$9,000 was got out from the bed of the river, and last year there was about \$75,000 returns, the exact business for 1897 being \$50,000. The dredging business for gold is in its infancy yet, but two or three large English companies have been organized to prosecute the work, and during the coming season, the output is expected to be considerable.

Gold in fine scales and particles, says Dr. Dawson, the director of the geological survey, generally so minute as to require the employment of mercury in collecting it, is now known to occur on almost all the rivers running eastward, from the Rocky mountains to the north of the international boundary, wherever these have been

prospected. To the south of the Peace river, this gold, in any workable quantity, seems invariably to characterize a portion of the length of each of the rivers, giving out to the westward before the base of the Rocky mountains is reached, and to the eastward along a less well defined line, but one probably due, in this case, to the local substitution of sand and clay banks and bed for the gravel bars of the upper and more rapid parts of the streams. The Peace river and the Laird, rising to the west of the Rocky mountains proper, among rocks known to be auriferous, contain more or less gold, throughout their lengths or to points in their lower course where the changed conditions of flow render the collection of any minutely divided gold which they may still carry practically impossible. In other words, in these two rivers, and possibly also in some still further to the north, a considerable part at least, of the contained gold comes directly from their upper tributaries; while in the case of the Athabasca, the North Saskatchewan, and other rivers further to the south, the evidence at first sight appears to be entirely against the possible derivation of gold from the mountains to the westward.

THE DERIVATION.

The result of recent observations appears, therefore, to indicate that the gold found in the Saskatchewan and other rivers of the Northwest, has come in part from several sources, but has been derived chiefly from the crystalline rocks of the Laurentian axis or plateau to the eastward or northeastward, from which it has been transported with the fragments of these rocks that now form so conspicuous a part of the "drift" of the Great Plains. The recognition, in late years, of the Huronian as a distinctly gold bearing formation, in itself, goes far to establish the correctness of the hypothesis originally advanced on this subject, as rocks of this formation occupy considerable areas of the Laurentian plateau.

The gold, in workable quantities, characterizes parts of the rivers crossing a belt of country that extends from the vicinity of the base of the mountains, for a variable distance eastward. This distribution has led to a popular belief that some ancient system of streams has carried the gold from northwest to southeast, or in the opposite direction, parallel to the base of the mountains, forming a wide belt of auriferous alluvium in the direction of its flow. The existence of such a belt is, in all probability, due to other circumstances, and that the gradual cessation of payable bars along the rivers to the westward, results chiefly from the diminished slope of the country and the consequently reduced erosive and sorting power of the existing rivers.

THE NORTH SASKATCHEWAN

has hitherto been by far the most important stream upon which gold mining operations have been carried on and is the only one which has offered a continuous and somewhat considerable output of gold. The length of the river upon which work has been found to pay, under favorable conditions, is about 120 miles. Edmonton, being situated almost in the centre of this length of the river. Up to the present time gold washing has been prosecuted almost entirely by hand, or with the aid of very rude mechanical appliances for lifting small quantities of gravel from the submerged bars and bed of the river. The prosecution

of this work has been desultory, being practically limited to the low-water stages of the river, and even then conducted by a number of men, who generally wish to devote only a part of their time to such work, influenced largely by the inducements offered by employment in other directions. It must be added, however, that experience here, as elsewhere, in regard to river-bar mining, shows that the best returns are obtained from the first working of such bars.

In New Zealand spoon dredges were first used, and sand pumps or suction pumps were then tried, but as in the western part of the United States, proved to be unsatisfactory. Steam bucket dredges were then introduced, and successfully worked. These soon superseded all others, and the tendency now is to build them of increasing size and capacity. Electric motors have also been employed with advantage. A great improvement was effected by the introduction of what is known as a tailing-elevator, which prevents the tailings from finding their way back into the excavation made by the buckets, and enables them to be stacked from the stern of the dredge where desired; in the case of the larger dredges to a height of forty feet above the water-level. By means of this arrangement the dredges can work the low river flats cutting channels for themselves, and can even attack gravel banks twenty-five feet in height.

In saving the gold, various ingenious devices are employed. The greatest advance recorded is that of the introduction of revolving screens with water jets. By perfected appliances extremely finely divided gold may be saved. Actual experiments having shown that particles as minute as one thousandth of a grain in weight are successfully collected. An instance is quoted, showing profitable work in ground yielding only 1.35 to 1.41 grains (5 1/2 to 5 3/4 cents) per cubic yard and in Montana, the running of working gravels with steam power has been reduced to nine cents per cubic yard, or with electric power, as low as four and a half cents.

There appears to be no reason to doubt he adds, that satisfactory results, comparable with those achieved in a number of cases in New Zealand may be obtained on several rivers in the Northwest, and more particularly on the North Saskatchewan. Properly constructed dredges of adequate size and capacity will permit work to be carried on continuously during about half the year. It is to be remembered that such dredges enable the working not only of bars and beds of the river but also of the adjacent river flats, where these do not possess a greater and more permanent value for agricultural occupation. Many of these flats are known to be underlain by auriferous gravel which have never yet been touched.

The impression here is growing, says a Toronto report, that prices for canned salmon will be advanced in the near future. It is reported that the entire pack of Warren's "A1" brand of Columbia River salmon, amounting to 60,000 cases, has already been sold. Of steel head, practically the whole catch goes to Europe frozen, and a large part of the chinooks have also been shipped east frozen. Hence the expectations of an early advance in the canned stock.