Rossland Weekly Miner.

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JOHN B. KERR .....Managing Editor

LONDON OFFICE.

C. J WALKER, 24 Coleman Street London.

TORONTO OFFICE:

CENTRAL PRESS AGENCY, LD., 83 Yonge St.

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SMELTING VS. MILLING.

That wet crushing and dry crushing mills and cyaniding plants will, in many instances, give way to smelters is obvious to those who have a knowledge of the recent improvements that have been made in the reduction of ores by the fire process. Under favorable conditions, where the ore carries no base metals to interfere with the saving of the gold, the stamp mill is the best and cheapest method. When, however, the ore carries considerable base and requires roasting in order to get rid of the iron, antimony, arsenic, lead, copper or other rebellious metals, and where, even then all of these cannot be eliminated by the action of fire before going into the pans or over the plates, smelting is the more economical process of the two. When ore is rebellious and to a certain extent resists the action of cyanide and the loss is from 10 to 25 per cent., and where the cost of cayniding is high, smelting should be resorted to.

As a matter of fact there is but little really free milling ore in British Columbia and in a number of instances the ores which are at present treated by the free milling process, could, if the conditions as to transportation are favorable, be handled in smelters to better advantage.

We have an example of the superiority of the smelter over the free milling process here in the Rossland camp. The owners of the I. X. L. have an option on the O. K. mine and ten-stamp mill, and are operating both properties. There is more or less base metal in the ore of both the I. X. L. and the O. K. and as a consequence there is a considerable loss on the assay value when it is worked in a stamp mill. For this reason the ore is transported to Northport and treated in the smelter there and the cost of the freight and treatment is only $4.50 per ton. The loss in the mill would be at least between 10 and 15 per cent. and to this would be added the cost of milling, therefore it is palpable that the I. X. L. management makes a greater profit by sending the ore to the smelter for treatment than if it was reduced within 1,000 feet of where it is extracted in the stamp mill.

Several of the mines of Republic are sending their ore to the smelter at Grand Forks for treatment. This ore, while not amenable to treatment in wet crushing stamp mills, can be reduced in cyaniding plants. There are three cyaniding plants at Republic, and yet some of the mine owners there haul the ore in wagons over a long distance and at considerable cost and have it treated in Grand Forks for the reason that they get better results than if the ore is reduced in the home plants. If Republic were connected by rail with Grand Forks the major portion of the ore output would be sent to Grand Forks for treatment for this very reason.

In the early history of mining on this continent the plan at first adopted was to build reduction works at the mines in order to reduce the ore, but laterly this mode of procedure has been altered and big corporations have erected at central points smelting plants of large capacity at which not only base but free milling ores are treated at the minimum of cost; in fact, at a much cheaper rate than the ordinary mining company could perform a like service for itself. Of course, where mines have enough ore to keep a smelting plant in continuous operation and where a location can be found with the proper and favorable conditions to erect and maintain its own smelter or mill, mines should own their own plants. On the other hand, mines with medium sized veins of high or low grade ore, find it advantageous to let some other corporation reduce their ore for them.

The smelting facilities in this province are constantly improving and the tendency of prices for reducing ore at the several establishments in existence is downwards. The art of smelting is being closely studied by the most competent of metallurgists and improvements in methods are constantly being made. As we have shown it is cheaper to smelt certain classes of so-called free milling ores than to run them through stamp mills or cyaniding plants.

Mining companies in this province, which are contemplating putting in stamp or cyaniding plants should, therefore, look very carefully into the question of the expediency of so doing before they embark in such ventures. Many hundreds of thousands of dollars have been wasted by erecting plants which, after they were put in operation, were found to be totally unsuited for the purpose for which they were intended. Conservatism in this respect is wisdom.

DOLLARS VS. CENTS.

The British Columbia Mining Review in an article on Canadian mining shares says: "We have always taken a firm stand against any attempts made by Canadian promoters of mining companies to sell shares to the investing public in this country, by offering them at a considerable reduction below their actual value." The Review in this regard but echoes a sentiment in Great Britain which is generally opposed to the system which has been in vogue here of incorporating companies on the $1 basis and selling the shares for a few cents.

While the position of the Review may be correct from its view of the matter from a British standpoint, it is certain that the practice of putting the par value of shares at $1 and selling them for considerably less has been beneficial in this section, as it has led to the development of most of the paying mines.

Had the pioneers of the Rossland camp waited until they could get British investors to pay par for the shares of the companies which they first floated, how many mines would now be opened here? We believe that they would be waiting yet for development funds.

What did they do? They organized mining companies, usually with a capital of $1,000,000 divided into $1 shares. They sold the shares for what they could get, and sometimes this was only a small portion of par. With this money they opened the properties and in some instances made dividend payers of them both here and in other portions of the Kootenays. For instance, take the Le Roi, and had not it adopted this plan and had the promoters of the company waited for the British investor to come along and pay them par value for the shares before they bgan operations what would be the present situation? It is certain that they would now have an undeveloped property on their hands. Instead of doing this they organized on the dollar basis and sold for whatever they could get. At first it was a few cents per share and with the proceeds so obtained the Le Roi property was developed. The stock rose steadily with the development and in time the company commenced to pay dividends, and when the British investor realized the value of the Le Roi he paid from six to seven times the par value of the shares in order to acquire them.

The War Eagle was made a productive mine on the same plan and when it went into the hands of an Eastern Canadian syndicate it brought nearly par and at times since its shares have been worth more than par. The Iron Mask was developed to its present healthy condition by means of stock sold for less than par when the company was first organized. The company that first controlled the Columbia and Kootenay developed it to a stage to show that it was a valuable property by means of dollar shares sold for whatever could be got. In a large number of other instances the same thing has been done, and the mining industry of Kootenay and Yale is under many obligations to the shares sold under par, notwithstanding the fact that the plan does not meet with the approval of our British cousins.

While it is admitted that there have been a number of failures of companies organized on this plan still under the existing condition of affairs and in order if possible to obtain results what better one could have been adopted? We will say, for instance, that a prospector had in the early days of the camp a prospect which had a good showing of ore, but no money with which to operate it. The property was given to a broker and he formed a company for the purpose of developing it. The shares were sold for a few cents each, but this was often enough to demonstrate the merits of the prospect.

Out west a venture in a stock of this kind is not regarded as an investment, but rather one which partakes of the nature of a gamble. If those who put their money into this sort of a venture make a success once in five or six times they make a profit. In some cases the property may not be developed sufficiently to be placed on a paying basis, still it has been put in such a condition as to demonstrate that with more capital it can be made to pay. Then, mayhaps, it is sold to a stronger company which is able to make it profitable by reason of the fact that it has the capital to properly bring out its possibilities and in this way a number of mines have been brought up to the productive stage, by a process of evolution, so to speak.

There is one mine in particular in this camp, owned by a company which has spent all of its treasury, and can go no further with the development work. The property is known to be a very valuable one because the work which has proven that it has extensive bodies of pay ore. A considerable sum is needed, however, to place it on a paying basis. A property in this condition will not lie idle long, as a number of syndicates are usually after mines in this condition.

While it is palpable that there are objectionable features to the method which has been employed of incorporating mining companies on the dollar share plan and selling for considerably less, still it is the manner in which the funds for pioneer mining work in new mining camps in the west has largely been obtained; it is the method upon which the value of numerous properties has been demonstrated. When this has been done then comes in the British investor and he purchases the assets of the company, and reorganizes it on the plan which best suits the investors in Great Britain. We have no quarrel with him for this and are not greatly disgruntled because, as a rule, he refuses to buy our $1 shares for a few cents. The British investor has certain fixed ideas in regard to this matter which he is wedded to and it is to be feared that he cannot be divorced from them. Yet, notwithstanding this, we are firmly of the opinion that the shares sold for a few cents have been an important factor in the development of the mining industry here and were it not for them the city of Rossland would probably not be in existence today.

When we get older, richer, and therefore more respectable, perhaps we, too, will follow the plans of our much beloved cousins in the mother land, but we are still young and, perhaps, regarded as frivolous by the British investor. In a new country like this, we have to grapple with conditions, and meet them as best we can.

COST OF SMELTING.

The British Columbia Inland Board of Trade recently addressed an inquiry to The Miner as to the minimum cost of smelting. It had been stated that the cost of mining, transportation and smelting had been accomplished as low as $5 per ton. Under exceptionally favorable circumstances it is possible that $5 per ton would cover the cost of these several operations. We believe that there is no ore in British Columbia handled cheaper than that extracted from the Knob Hill and the Old Ironsides. The ore is taken from near the surface from exceptionally wide veins. It is claimed that the cost of mining under such conditions is but $2 per ton. The ore is transported from Phoenix to the Granby smelter for 60 cents per ton. The ore is of such a character that it does not have to be roasted. It does not require fluxes, as it is self-fluxing. It is put through the smelter at a cost of $1.90 per ton. The process of smelting at the Granby plant is not costly because the ore does not have to be roasted, no fluxes are used, cheap water power is used instead of steam and the ore is handled automatically by devices which do away with considerable manual labor. Add 50 cents for incidentals and this gives $5 as the cost of mining and smelting. Mr. S. H. C. Miner, the president of the Granby Smelting company and the chief spirit of the Knob Hill and Old Ironsides, stated in August, 1899, at a dinner given to him in Grand Forks by the citizens of that city, that he thought he would be able to mine, transport and smelt ore that went over $5 to the ton at a profit, and it seems that he is carrying out his promise.

The reports of the management of the Le Roi to the officers of the company in London have shown that the cost of mining, smelting and transportation of the ore of that mine has been $8 per ton. This includes all the incidental expenses, such as advance work, clerical work, superintendence. With the new plant, which is being put into use, it is claimed that a cut of at least 25 cents per ton can be made and the cost of mining, transportation and smelting in the future will be as follows: Mining, $3.25 per ton; transportation, 50 cents per ton; smelting, $4 per ton. This makes a total of $7.75.

What makes the smelting cost more at the Northport smelter than it does at the Granby plant: (First), the ore from the Le Roi has to be roasted; (second), the plant is operated by steam instead of by water power, which is the case at the Granby smelter, and, (third), fluxes are required at the Northport smelter, which are not used with the ore of the Knob Hill and Old Ironsides ore reduced in the Granby plant.

In these instances the mines operated have very large and wide ore shoots. There is one in the Le Roi that is in places 117 feet in width, and in the Knob Hill and Old Ironsides the ledges are from 150 to 350 feet wide. The Le Roi and the other two companies have plenty of funds with which to purchase and install machinery and to carry on mining operations on a large and therefore comprehensive scale. It is palpable that they are mining and smelting ore at as low a cost as is possible under existing conditions.

It is obvious that smaller companies, with less resources, which are unable to secure the high priced talent in the way of managers, superintendents, engineers, etc., that the larger corporations can, cannot mine and smelt for the same price. In both instances practically the same people who control the mines operate the smelters. The cost of mining, therefore, on the part of smaller companies operating on a restricted scale would naturally bring about a different result. A few cents here and there would be added to the cost and when it came to smelting it would probably cost them more than if they owned their own reduction plants like Le Roi and the Miner-Graves syndicate do.

All these conditions would result in adding considerably to the cost of mining and reduction, for the smaller companies and the outcome would be that gold-copper ore would not pay to mine where it is under $10 to the ton, as it would not leave a margin of profit to the miner, although it might yield enough to pay expenses. Ore that went from $10 to $15, however, even though the veins are comparatively small, will yield good profits.

From the foregoing it will be seen that gold-copper ore that runs from $7 to $9 to the ton must be treated on a large and economical scale in order to yield profit, and even then there must be large bodies in order to accomplish this result.

Of course, from time to time, there will be improvements made in the treatment of ore and the day is probably not far distant when the cost of smelting will be, perhaps, a little lower than it is at present, but we do not believe there will be much of a decrease in the $1.90 per ton which the operation costs at the Granby plant.

PROFIT IN LOW GRADE ORE.

The report of the Alaska Treadwell mine for November, 1900, is a revelation to even many practical mining men. It states that during that month the company milled 60,032 tons with its 542 stamps. The returns in bullion and concentrates amounted to $97,033. The total expenses of mining and milling were $34,000, leaving a net profit of $63,033. The average value of the ore was $1.61 to the ton, and the cost of mining and milling was therefore only a fraction over 56 cents to the ton. This is a remarkable showing, and conditions must be favorable to secure such results. The vein is practically a quarry, being about 300 feet in width, and the cost of mining under such circumstances is reduced to the minimum. The stamp mill, having 542 stamps, makes it one of the largest, if not the largest, reduction plant of its kind in the world. The mine and the mill are provided with a number of labor saving devices, as it is only by the exercise of the closest economy in both extraction and reduction that such low grade ore can be made to yield a profit. The plants for both mining and milling have to be large so that the output per day, as in the case of the Alaska-Treadwell, where 2,000 tons of ore per day is taken from the mine and treated in the mill, should be considerable. Of course the cost of equipping a mine of the type of the Alaska-Treadwell is very great, but the experience gained in the case of this venture, and in that of the Homestake in South Dakota, where the ore is of a similar character to that of the Alasak-Treadwell, shows that large bodies of low grade free-milling ore yield good profits and companies operating them pay dividends over periods covering a number of years. In the section of the west of the Boundary country there is a free-milling country of considerable size, and the veins there are large and sometimes of a comparatively low grade. When this section is furnished transportation facilities so that mining machinery and mining supplies can be transported thither at a reasonable cost, these free-milling propositions will be exploited and, in time, results like those accomplished in the Alaska-Treadwell and the Homestake may be looked for. Capitalists who invest in mines are looking for large bodies of comparatively low grade ore, and seem to prefer them to small ledges where the ore is of a higher grade. Experience has taught them that the big bodies of comparatively low grade ore pay dividends for years, and, in many cases, are the more profitable.

WINTER CARNIVAL.

The fourth annual Rossland Winter Carnival commences today and there is much sport in store for visitors and townspeople. The arrangements for the sports has been in the hands of first-class committees, which have been energetically working for several weeks and the Carnival should be the most successful yet held. A most varied and interesting programme of sports has been prepared consisting of curling, hockey, ski running and jumping, etc., which should be of sufficient merit to please the most exacting lover of internal sports.

The effect of these annual meetings is showing itself strongly on the residents of this city. Take the use of Norwegian skis, for instance. Four years ago there were not over half a dozen experts on skis here, and now the younger generation uses them for playthings and some of the lads are as expert with them as they are with marbles and tops. Besides, there as a number of men and women who have mastered the art of walking and running on this kind of snowshoes. It is said to be a genuine pleasure to go down a steep slope with almost the speed of an arrow on skis. We are fast developing a number of good hockey players. The boys, and a few of the girls, are becoming adepts at this exciting and fascinating game and from among the former will be drafted the good players for the better class of senior teams of the future. In skating, too, many of our people are making rapid progress in the art and this city is becoming noted for its number of fine skaters.

All of the sports of this character are conducive to health and make those who indulge in them better physically and mentally, as a sound mind is usually to be found with a sound body. A traveler who recently visited Norway, speaks enthusiastically of the effects of outdoor sports on the people, and especially on the women. He speaks of a wonderful race of athletic girls to be found there and says the most remarkable being in the Old World is undoubtedly the Norwegian woman. The upper class woman, taking her cue from the peasant and middle classes, has developed her muscular powers to the finest degree possible. The persistent outdoor exercise has developed healthy complexion and brilliant eyes in the younger generation of women, who are little giantesses campared with the girls of other countries. They share the winter sports of their brothers and thus gain strength, while preserving and increasing their girlish beauty of form, and in their faces display the adorning beauty of perfect health.

This is an example for our people to follow and they are doing it to a large extent, but not as fully as they should. By means of the Winter Carnival, however, there is a growing desire to become proficient in some of the many lines of hibernal exercise and this will grow and increase till our people will compare favorably in hardiness, in health, in grace, and skill with those of the older countries, where many years of practice produces some remarkable results, such as the wonderfully long ski jumps made in Norway where a jump of 120 feet is the record and those of 70 to 80 feet are common.

In order that our Carnivals may be popular the stay of visitors should be made as pleasant as possible. With this end in view every citizen who has the best interest of the city and the occasion at heart should show every courtesy to visitors who come to witness the games and pastimes. If they enjoy themselves while here they will come again and again and the Carnival will grow to be the great event of the year in this part of the country and in time will be patronized by thousands instead of hundreds.

ARE TURNING TO MINING.

In the manufacturing industries the formation of immense trusts has had the effect of crowding out the smaller factories and individual makers of various articles. They find it impossible to stand up, in most instances, against the combines with many millions at their command. In the mercantile business in the larger cities the department store, with its immense stocks of varied goods and its large sales and moderate profits is crowding out of existenice the small dealer. He may keep goods in his particular line that are even better than those of his larger rivals, but as the bigger establishments sell such a variety of goods at a reasonable profit, in the long run it gives them the lion's share of the trade. The tendency in the larger centres of population is toward concentration, and there is not the opportunity that there was twenty or thirty years ago for a manufacturer or merchant to begin in a small way and after a certain time to build up a large business, as in order to compete with those already in the business an individual would have to be provded with vast resources. This fact has come to be recognized, and in the populous centres those with capital are seeking investments in enterprises where they will not be crowded out of business and perhaps financially ruined by trusts an doepartment stores. Many of them are turning to mining and find in this industry exactly what they want. It is the one business in which competition does not figure. Too much of the precious metals cannot be produced, and each mine is totally independent of the other so far as any rivalry except that which is friendly is concerned. This, in a measure, acounts for the wonderful activity which is now apparent in the mining industry, and is one of the most potent reasons for its popularity. This desire to invest in mining will increase as the concentraton of wealth in the form of trusts augments and the chances become less and less in manufacturing industries and mercantile ventures for individual effort.

In order that we may fully understand the magnitude of the trusts, look at the leviathan of them all, which is now undergoing the formative process under the skilled hands of Mr. J. Pierpont Morgan, the trust builder, since Mr. Andrew Carnegie agreed to dispose of his immense steel interests. It means that the steel and iron industries of the United States will be formed into one gigantic trust. According to the Associated Press the new combine will have a capital of $1,034,012,100, which makes it probably the greatest trust on the globe. Is it no wonder, when such great aggregations of capital are formed, mainly for the purpose of crowding out competition, that men are turning their attention to mining, and that there is certain to ensue the greatest mining revival that has ever been witnessed in the memory of man. This is the logical outcome of the manufacturing and mercantile situation.

RESURVEY OF BOUNDARY LINE.

The governments of Canada and the United States have agreed on a new delimitation of the international boundary line between British Columbia and the state of Washington. A commission will be appointed for the purpose of fixing the boundary line where it should be. Pending this, however, two members of the geological survey and of the geodetic survey of the United States and Canada respectively will at once commence the work of locating the lines of the old survey, made in the early sixties. The dispute has arisen over the boundary line in the vicnity of Mount Baker, near the coast, where there are some valuable mineral lodes. It is claimed that the old survey was very carelessly made, and that in places it is from three to seven miles out of the way. It would be pleasant, for instance, to find that Northport was located on Canadian soil, instead fo in American territory. Blaine, another American town, is close to the border line, and may be in British Columbia instead of Washington. Suppose, however, the line is too far south, and that Grand Forks and Rossland should be found to be in the United States? Then we would indeed be in a pickle.

THE LARGEST STEAMERS IN THE WORLD.

Mr. James J. Hill, who began life as a farmer's boy near Guelph in Upper Canada has made a record for himself. He was the first to show the railway people that a road could be operated at from 50 to 55 per cent. instead of 75 per cent. of its earnings and now he is going to give steamship owners some lessons in how to economically handle freight and passengers on the ocean. He is building several steamships and the actual work of laying the keels of these mammoth iron vessels has already been commenced at the works of the Eastern Shipbuilding company at Grothan, opposite New London, Conn. The ships will be the largest in the world now building or planned. The new vessels will be of 20,000 tons register and 33,000 tons displacement, or just 10,000 tons more displacement than the new Atlantic greyhound, the Deutschland. It is estimated that these steamships will cost fully 5,000,000. They are intended to run from Seattle and Tacoma to the Orient. When James Hill gets these steamers in operation he will probably show the ocean transportation people a thing or two which will open their eyes. Mr. Hill's record shows what a Canadian farmer's boy can accomplish if he has the proper ability.

EDITORIAL NOTES.

Nearly every Canadian city of any size is to be represented at the Pan-American exposition, and Rossland should not lag behind her contemporaries in this respect. The exposition will furnish a splendid opportunity for advertising the resources of this vicinity, and a comprehensive exhibit of ores should be assembled and forwarded for exhibition. With the exhibit should go a competent commissioner, whose mission it should be to see to the proper placing of the collection of ores and to disseminate information concerning our mines to the visitors

One hundred and sixty miles an hour is the speed aimed at by a new electric railway company in Germany, under the direct patronage of the Emperor. Cars with accommodations for fifty persons each are now being built, and will be tried on a thirty-kilometre track. It is intended to use electricity only for the express passenger service, as for freight and local traffic steam is expected to remain the power for a long time.

BRITISH COLUMBIA IN LONDON.

Words of Praise From Mr. G. S. Waterlow, a Prominent Capitalist.

Mr. G. S. Waterlow, D.L., J.P., an influential capitalist of London, Eng., who recently returned from a trip to Canada during which he visited nearly every part of the Dominion from Quebec to Vancouver, spending a month or six weeks in the mineral district of British Columbia, where he has large interests, stated:

"The progress that has been made in British Columbia since my visit in 1891 is very remarkable. New railways comparing most favorably both from an engineering and scenic point of view with any of the great railways on the continent of North America, have been built opening up mineral districts of great promise and offering fine fields for strenuous, energetic, legitimate enterprise. New towns, built and equipped with telegraphs, telephones, electric lights and electric power, have sprung into vigorous life over the southern region of British Columbia, particularly the Boundary district, and the vastness of the mineral deposits is beyond dispute. It only requires time, capital and patient labor to produce in this part of the country some of the greatest mines in the world. With good roads and unlimited water power the posibilities of them are almost boundless.

Mr. Waterlow, during his trip to British Columbia, visited the Le Roi and other big mines at Rossland, and was astonished to find the marvellous development that had taken place in the Rossland district since his former visit, in 1898. These remarks, coming from a gentleman of Mr. Waterlow's high standing in the city of London carry special weight and are worthy of serious consideration.

Mr. Waterlow is the chairman of the British Columbia (R. & S.) syndicate, limited, of which Mr. A. J. McMillan is the managing director.

FROM THE RECORDS.

Bills of Sale.

Feb. 1. Revenue, 1-4; Old Glory, 1-4; East Revenue, 1-4; Empire, 1-4; Empress, 1-4; S. McKee to J. A. Williamson.

Feb. 1. Revenue, 1-4; Old Glory, 1-4; East Revenue, 1-4; Empire, 1-4; Empress, 1-4; S. McKee to John Anderson.

Feb. 9. Townsite, 1-8; E. B. Bushell to Geo. E. Pfunder.

Feb. 12. Dardanelles, 1-2; Liverpool, 1-3; H. E. McDonald to Robert Fox.

Certificates of Work.

Feb. 4. To K. L. Burnett for Velvet Mines, for work done on the Velvet Fraction No. 1. To apply for five years' assessment.

Certificates of Improvement.

Feb. 6. To the Velvet Mines on the Velvet Fraction No. 1, situated on Sophie mountain.

Hon. C. H. Mackintosh has returned from a visit to Vancouver, whither he went for the purpose of attending the trial of the case of Williams vs. the B. A. C.

Mr. W. J. Morrison, a Grand Forks mining man, registered at the Allan yesterday.