

# THE B. C. MINING EXCHANGE

## And Investors' Guide.

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### BRITISH COLUMBIA IN LONDON.

The principal financial paper of the World's Metropolitan, The Financial News, published, on June the 5th, a general supplement illustrative of British Columbia and the Klondike. The matter, illustrations and general information are excellent. A map of the Klondike Goldfields is also shown, which is compiled from the official surveys of Commissioner Ogilvie and others.

Altogether the production is extremely interesting and will be of immense value to British Columbia, both as a means of attracting attention to her vast mineral wealth and in enlisting capital for her development. The resources of British Columbia had lain in embryo so long, that Major Halder may be excused for remarking that "Canada was asleep" to the fact of her mineral resources.

We remember, some twelve months since, a series of articles appearing in all the principal illustrated papers, of world-wide circulation and reputation, dealing with British Columbia. These articles were illustrated and written, if we remember rightly, by a gentleman of considerable knowledge and literary ability, who took us through the mining camps of the Kootenay, showing us what development had been done and the vast bodies of ore which had been and were being taken out, and pointing out what a profitable field for capital, rightly directed. The Coast, and in fact, every mining camp in British Columbia, were referred to showing their possibilities and advantages. Yet, the writer of these articles was subject to the coarsest abuse from the British Columbia side, from a most virulent pen, of which scurrility was the point.

### THE MODERN METALLURGY OF COPPER.

The metallurgy of copper has in the past few years been greatly advanced and simplified. The most important and far-reaching modifications have been in the extraordinary extension of the Bessemer principle in copper reduction, and the electrolytic process in copper refining. By the Bessemer process the impure copper or matte produced by a single smelting is run in the liquid state into a Bessemer converter, air is forced through the liquid, the impurities oxidized and removed, and bar or pig copper obtained by a single operation. At least one roasting and one smelting, and often more, are thus saved, together with all the fuel and labor involved in these processes. The Bessemer method is now extensively followed at the great mines of Montana and Arizona, also in Colorado. It is safe to say that the electrolytic process of refining copper is now applied to between one-half and one-third of all the copper produced in the United States. The electrolytic process separates gold and silver that may be present in the copper and deposits the copper in a state of great purity. To accomplish this the unrefined copper from the smelter or Bessemer con-

verter is cast into great plates or anodes, weighing 300 lbs. or more; these anodes are suspended in tanks containing a solution of copper sulphate, opposite to cathodes, which are also copper plates, but very thin and consisting of pure metal. The passage of the electric current in the proper direction gradually transfers the copper from the anode plate to the cathode plate, while all the impurities are left behind. The gold and silver which are present in the unrefined copper fall, during the process, to the bottom of the tanks, and are afterwards collected and separated from each other. Some idea of the importance of this method of copper refining is given by the following facts relating to the Anaconda Copper Mining Company's Montana refinery:—

This refinery, which is one of many in this country, contains 1,200 electrolytic tanks, each tank requiring about four tons of copper as a charge. The electric energy employed in the deposition is the equivalent of 2,300 horse power. This single plant has turned out over 100 tons of refined copper daily during the past few years. There is separated from this daily output of copper about 700 lbs. of silver and 50 oz. of gold. This refinery treats only about one-half of the company's crude copper, the remainder being treated at Eastern works.—Ex.

### OPENING A MINE.

When a shaft of a mine is sunk on the vein or deposit in the early stages of the development, the error is of too common occurrence to find that the ore on the sides of the shaft has been stoped out, because it was easy of access and conveniently mined at small cost. This is generally the prospector's first error, as the desire for the ore is in excess of the means at hand of acquiring it at greater depth, and on that account prospect shafts are seldom suitable for the main working shaft of the mine. When a shaft cuts or passes through an ore chute on the vein when the mine has passed the prospect stage, the temptation is presented to extract the rich ore on the sides of the shaft. If there are no mining regulations in the district, or no mine inspector to enforce them, or to prohibit such manner of working, these errors are sure to happen. The shaft of the mine, whether on or off the vein, is the entrance to the workings, and should be used for that purpose alone and not for the object of stoping ore from its sides, which operation renders it unsafe and more liable to falls of roof or wall rock, which are liable at any time to block the entrance. If it is sunk on the vein, a suitable amount of ore, say ten to twenty feet, depending on the strength of the ground, should be left on each side of the shaft before any stoping of ore is permitted. It is also a wise provision to leave the first 50 or more feet in depth from the surface which forms the back of the vein as a support to the loose surface wall rocks, and that constitutes