

SUBSCRIBE FOR

..THE..

MINING

REVIEW

TWO DOLLARS A YEAR.

\$1.25 FOR SIX MONTHS.

Testing Ores.

The following are given as effective tests for various ores:

Lead and Silver.—Take a piece of the ore to be examined, powder it and pass it through a fine sieve. Take 25 grains, or thereabouts, of the powdered ore, place it on an iron spoon and roast until no smell of sulphur arises. Place the sample in an evaporating dish and add twice the quantity of nitric acid, diluted with a little water. Heat over a lamp until citrous acid fumes subside, dilute with a little more boiled rain, snow, ice or distilled water, and allow it to settle. If cloudy, the solution must be filtered. If clear, carefully pour off the solution from the sediment into a glass or test tube. Divide it into three portions in three different glasses. Add to one portion a few drops of common salt solution or muriatic acid. This will precipitate lead and silver, if any, as a white chloride, add the salt solution until the precipitation ceases. Pour off the solution and wash the precipitate with boiling water; this will dissolve it, if lead, leaving the silver in the residue, pour off the solution from the precipitate and add ammonia to the precipitate, which will dissolve it, if silver. The chloride of silver, if exposed to the sunlight, turns to a darker shade of color than the chloride of lead, and in that case will not dissolve in ammonia. It should, therefore, be done quickly and under cover.

Gold.—To the original and undissolved ore add (aqua regia) on part nitric to two parts hydrochloric (muriatic) acid, to cover the ore. Digest for half an hour gently over a lamp, add water until cool and place it in a glass or test tube. Now add a few drops of chloride of tin solution; if gold, a purple color will be shown—"The Purple of Cassius." This, on shaking, if too much of the chloride has not been added, will disappear. Add a little sulphate of iron solution, and it will form a brown precipitate, which will not disappear on shaking.

Copper.—Add ammonia to a portion of the first solution, and, if copper is present, it will give a blue color.

Iron.—Add to another portion of the first solution a little of the ferro cyanide of potassium solution (yellow prussiate of potash). If iron is present, a deep blue color will be shown (Prussian blue).

A NOTE ON THE CYANIDE PROCESS.

Mr. William Skey, analyst to the home department of New Zealand, writes to the editor of the Commercial News as follows:

"Kindly publish for me the singular and unexpected fact that aqueous solutions of cyanogen do not exert the least solvent action on gold or silver. Of course, as the gas decomposes there is a slight solvent action, but even this is far too slow and destructive of the gas to make extraction of gold a commercial success. This must prove to be interesting to cyanide men. I found this fact while engaged as an expert in the case of the Government vs. McDolin & Co., and published at here September 17th last in a paper to our Philosophical Society."

THE ALASKA BOUNDARY TREATY.

The exact terms of the Alaska boundary treaty, which was signed on Saturday and has been sent to the senate, says the New York Tribune, are to be regarded with the utmost interest. They are scarcely less important than the arbitration treaty, for they will make it clear whether any mention of the Alaska boundary dispute should or should not be made in the latter instrument. If the boundary treaty provides for the ascertainment and demarcation of the entire line, no such mention need be made, for the arbitration treaty is not to be retroactive and can have no bearing on a matter already otherwise in a way of settlement. But if it provides for only a part of such work, the propriety of remitting the remainder to the action of the arbitration treaty may well be called into question.

That the latter is the case there is some reason to suspect. The statement is made that the treaty signed on Saturday provides merely for the demarcation of the 141st meridian of west longitude, and this, it is added in most maladroit fashion, "it is believed will settle the controversy." Settle nothing! The 141st meridian has no more to do with the Alaska boundary controversy than with the canals of Mars. There has never been the slightest dispute over that meridian, any more than over the equator or the north pole; nor over the fact that it marks the boundary between the two countries from Mount St. Elias to the Arctic ocean. The Alaska boundary controversy relates to the other part of the divisional line, the southeastern half of it, the crooked, winding line that runs from Mount St. Elias down to Dixon entrance, parallel with the coast, and defining the "pan handle" of the territory.

That, and not the 141st meridian, is the disputed boundary. The questions to be solved concerning it are whether Portland canal in the old treaties means Portland canal or Behm canal, and whether the line of coast, to which the boundary line is to be parallel at a distance of so many leagues, is to be reckoned the mainland coast or the outermost margin of the fringe of islands. Upon the answer of these depends the ownership of Juneau City, Revilla Gigedo island, Fort Tongass peninsula and vast tracts of valuable coal and timber lands and coast fisheries. If this treaty provides for a settlement of that dispute, well and good; if not, it is of no importance whatever so far as the boundary controversy is concerned.

CONCENTRATING OUR LOW GRADE ORES.

To treat the low grade ores of Rossland both profitably and economically has been a question which has been discussed by metallurgists and others who are interested in the camp. Several methods of treatment by smelting and matting have been discussed, but up to the present no practical method has been adopted aside from that now in use at Trail and other smelters of the country. A well known metallurgist visited the camp five years ago and his report was substantially as follows:

The ores, as a class, are low grade, and to get the greatest value from the product some means of local treatment must be devised. The camp is a local treatment one.

Manager Rust, of the Tacoma smelter, has experimented more particularly with the ores from the Le Roi, and as a result of the experiments has come to the conclusion that the ore can be concentrated with a margin of profit on every ton of ore. He has suggested to the Le Roi people that two cars of ore be treated by the O. K. mill to determine what percentage of value can be saved. Colonel I. N. Peyton said yesterday:

"The Le Roi people have been in consultation with Mr. Rust, and will make the experiment, provided they can get the use of the O. K. mill for one day."

Mr. Rust says that the experiments conducted by him showed that from 75 to 80 per cent. of the value can be saved, and the ore will net the company \$4 a ton more than the present methods of treatment.

The difficulty seems to be apprehended in getting the use of the mill for the larger experiment, and the result will be watched for with considerable interest by mine owners in the district who have thousands of tons of low grade ore on the dumps of the mines. Much of this ore will not run more than \$6 or \$8 a ton, and if concentration proves a success, the problem of getting the value from the low grade ores will have been solved.

AFTER DR. SELWYN.

Exasperation scarcely expresses the feelings of those who have had to contend with the adversely expressed opinions of Prof. Selwyn respecting our mineral resources.

For years he was head of the Geological Survey Department of the Dominion, and his reports respecting the various districts examined were strongly adverse to the idea that there were any gold deposits in western Ontario which would pay the cost of mining. He was also very pessimistic respecting the British Columbia areas examined under his regime. His incompetence to give a correct opinion having been demonstrated by actual operations, he has not the grace to keep quiet, but apparently in the dotage of an old man, or in an excess of peurility, reiterates his aforesaid opinions at the gathering of mining men in Montreal last week. This has raised a storm of protests from men of actual experience, and men who from a spirit of practical inquiry have made themselves competent to express a correct opinion. Prof. Selwyn condemned the Sultana property before any work was done on it, and a year and a half ago, when passing through Rat Portage, he was informed that the Sultana was paying well. But he would not be convinced. He still persisted that it would not last and that this district had no pay ore. The Sultana, however, our pioneer mine, keeps right on producing. The ore body is getting larger as depth is attained and the ore is also richer. Others are doing the same thing. In fact we have had no failures as yet, but we can name a number of conspicuous successes. Prof. Selwyn should have opened his eyes to facts or have bought a muzzle to hold his tongue. He has retired, apparently, into private life, and should have stayed there.—Rat Portage News.