

already decided on. This branch will shortly be surveyed, and it will only take a few months to build."

"The pier at Louisburg," said he, "will be even of greater dimensions than the one in Sydney harbor. From this port will not only coal be sent to the New England market, but also to South America and elsewhere. Although our company expects to supply large quantities to the United States, yet we do not count only on that market. Louisburg is a natural port for southern shipments, and we look forward to sending much coal to places south. The pier to be constructed in that place will guarantee the handling of 10,000 tons daily."

**CHEZZETCOOK**—John Anderson has been doing some work at Lake Catcha, and has cut a gold-bearing lead.

Manager Reid of the Oxford is meeting with fair success.

The Canada Coal Company, whose mines are in Cumberland, N. S., have in view the construction of a large number of neat cottages for their miners. The intention is to offer inducements to employees with families to become owners of their own houses. This is a sensible idea.

**THE MINING SOCIETY OF NOVA SCOTIA.**—The annual general meeting of the above Society will be held at the rooms of the Society, 129 Hollis Street, on Wednesday, 29th March, for the election of officers, the discussion of papers, and routine business. The annual dinner will be held in the evening at the Halifax Hotel. The following papers, which have been mailed to the members in advance, so that they may come to the meeting prepared to discuss them intelligently, will be read by title. B. C. Wilson, "Notes on some special features in Lode Formation and deposition of gold," as presented in the Waverley Gold District, Halifax, N. S.; Alfred Woodhouse, F. G. S., paper on "The Occurrence and Reduction of Gold;" George MacDuff, paper on "Crawford Mill and Mechanical Gold Extractor;" W. G. Matheson, paper on "Fuel Economy." The Association is in a flourishing condition, and is doing good work for the mining cause. A wise move was made in mailing copies of the papers to be read in advance to the members, as the discussions that will follow will be thorough and interesting.

#### NEW GOLD EXTRACTING PROCESS AT MOUNT MORGAN.

The cheap extraction of gold from the Mount Morgan ore has been an absorbing problem with all those engaged in that branch of science. The old battery system (writes the *Rockhampton Bulletin*) failed to get 30 or 40 per cent of the gold. The chlorination process overcame this difficulty, but at great cost; and the aim has been to secure the same results at a much lower charge. The attempts made have been very numerous, the directors affording full opportunities of trial to all who had a feasible system to offer. The latest has been the Bohm patent, which is the property of the Refractory Ores Reduction Company, Limited, London.

The plant shows first an iron cylinder lined to suit chemical solutions which it is intended to pass through it. In some cases, especially where the ore to be treated is very difficult of filtration, a filter of peculiar construction is arranged at either end. The dimensions of the cylinder between filters are—diameter 5 feet, length 12 feet. The cylinder is supported on standards, so that it can be turned on trunnions attached to its centre by means of a worm wheel and gear. Covers attached to either ends by means of bolts contain the closely grooved, perforated filter board, over which a fine woven cloth is stretched and secured to its outer edge. To introduce the powdered ore the topmost cover is raised by a running screw gear, and run on one side. The ore is then allowed to drop out, and at the same time the solvent solution is forced upwards by means of a small pump. By the time that the vessel is fully charged with ore the solution will be almost on a level with the top. The cover is then bolted down, and a continuous flow of the solution maintained by the pump (the overflowing solution being taken up by the suction and returned to the vessel) until all the gold and silver are in solution. Should the top filter tend to clog during the operation by the accretion of fine slimes washed out of the ore, an ingenious device of a hollow trunnion, and simply but cunningly contrived pipes permits of the reversing of the vessel, without stopping the flow of solution, so that the upper filter becomes the lowermost, and is perfectly cleansed by the flow of solution in the opposite direction. In order to concentrate the volume of solution to be dealt with subsequently, provision is made for driving the rich solution out of the vat to the precipitators by means of air pressure, and the necessary additional wash water is passed through by similar means. The moment the ore is clean, which is discovered by means of a simple test, the top cover is raised, and a half turn given to the vat, when out tumbles the 10 or 15 tons it contained like a shot out of a shovel, and the vessel is righted to receive its next load.

A plant erected some time since by the Great Sheba Gold Mining Company in Africa, is dealing with very refractory ore at the rate of three charges per vat per day, giving a gross output for each vessel of 45 tons in the 24 hours of an ore which could not be treated by the old percolation process under seven days, and even then 10 per cent loss of bullion was extracted. From this fact alone it is claimed the advantage of the invention may be gauged. Imagine, says Mr. Bohm, the hundreds of square feet of tank space required to accommodate 315 tons of ore, and compare it with the 20 square feet necessary for a rapid plant. The saving in buildings alone would constitute an enormous item, in fact their cost would be almost prohibitive for treatment on a large scale by the percolation process. Modified forms of this filter vessel, worked on the same principle of hydraulic leaching, are in operation, and are made to suit the mines and localities for which they are intended. Amongst others are a stationary vat,

from which the tailings are washed by means of a high pressure water connection and another having a hinged drop-down bottom, also with the object of rapidly disposing of the refuse matter. These vessels are being employed for the rapid treatment of ores by means of cyanide of potassium at Sheba, and Wahi in New Zealand. It may here be mentioned as a significant fact that the returns from this mine prior to the introduction of the plant, were only a little over £2,000 a month. On its erection they went up to £5,000, and have been fairly steady at that since. The principle is, however, adapted to any leaching process, and has been applied to an improved method of chlorination adopted by Mr. Bohm two or three years ago, with extraordinary results. He tells us that samples of the Mount Morgan ore, supplied to his testing works in London, were chlorinated and turned out in the short space of five hours, at a cost of only 3s. 9d. per ton of ore with an extraction of 98 per cent of gold.

The secret of the cheapness of the process lies in the fact that only sufficient chlorine to do the work is employed, and all the waste attached to the use of a barrel process and its nauseating smells is avoided. While conducting operations in the well-known Hungarian Government Works at Fernezeley, near Nagybanya, Mr. Bohm found that a solution of chlorine in water acted more rapidly and economically upon gold than the gas did, and after studying the various leaching processes at Capnikbanya and Chemnitz, he went over to London, and perfected and patented his process all over the world. It is his opinion, an opinion shared in by many scientific men in England, that the pressure necessarily generated in rapid leaching causes the solutions, chlorine or other, to act more readily on the ore, by keeping the surface of the metal free from saturated solution, and causing the solution to insinuate itself into any interstices that may exist in auriferous particles which may have been insufficiently fractured in crushing. Of course the gravitation of the ore acting against the upward flow of the solution causes a perfect separation of the mass, so that the best possible conditions for rapid work prevail. Included in the chlorination patent is a new precipitant for recovering gold from chlorine liquor (now being tested on the Mount Morgan solution) in a metallic state, which is working very successfully with a rapid chlorination plant in the east of Europe. This invention enables the gold to be taken from the precipitator in the form of a cement, the medium employed being attacked and dissolved by the solution as it rapidly passes through, to be recovered for re-use at a later stage. The saving of fuel, of loss by handling, and the immense gain by its cleanliness and efficiency for small bulk, should recommend this precipitant to all users of chlorination processes.

On the Mount Morgan directors visiting the mine the other day, the new filter (12 in. square, and containing only 5 in. of precipitant) was passing as much solution as six large charcoal filters. Mr. Bohm, who returns shortly to New Zealand, where he is forming a company to take up some rich refractory mines for his process, has been at Mount Morgan for some time, arranging for the disposal of his plant, lately purchased by the Mount Morgan Company, which as stated has entered into an arrangement for the use of the process.

Mr. Bohm has recently purchased for his company the rights to a patented invention of the chemist to the Russian Government, which enables chlorine to be produced from a salt solution direct at one-fourth of the cost of any known method. The company have just received by cable an offer of £100,000 for the use of their process in one district of South Africa, which they have accepted under certain conditions.—*Australian Mining Standard*.

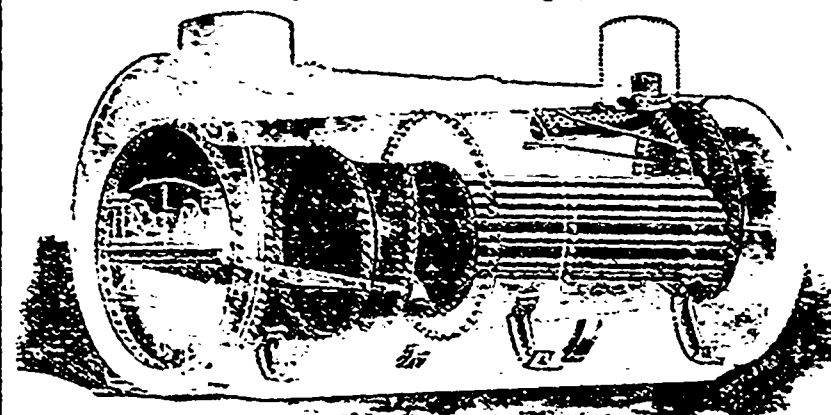
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