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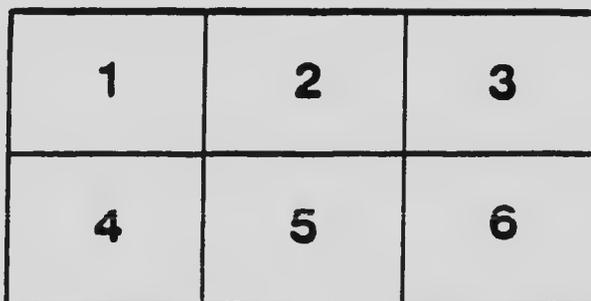
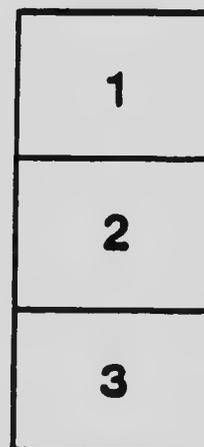
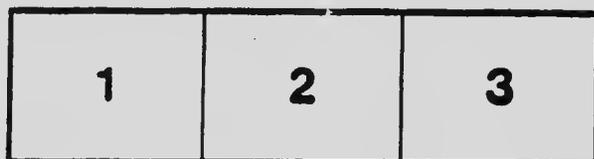
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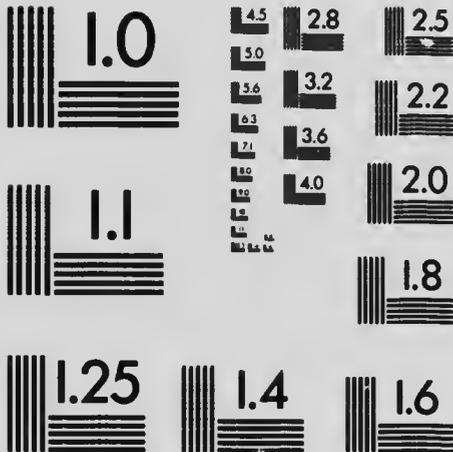
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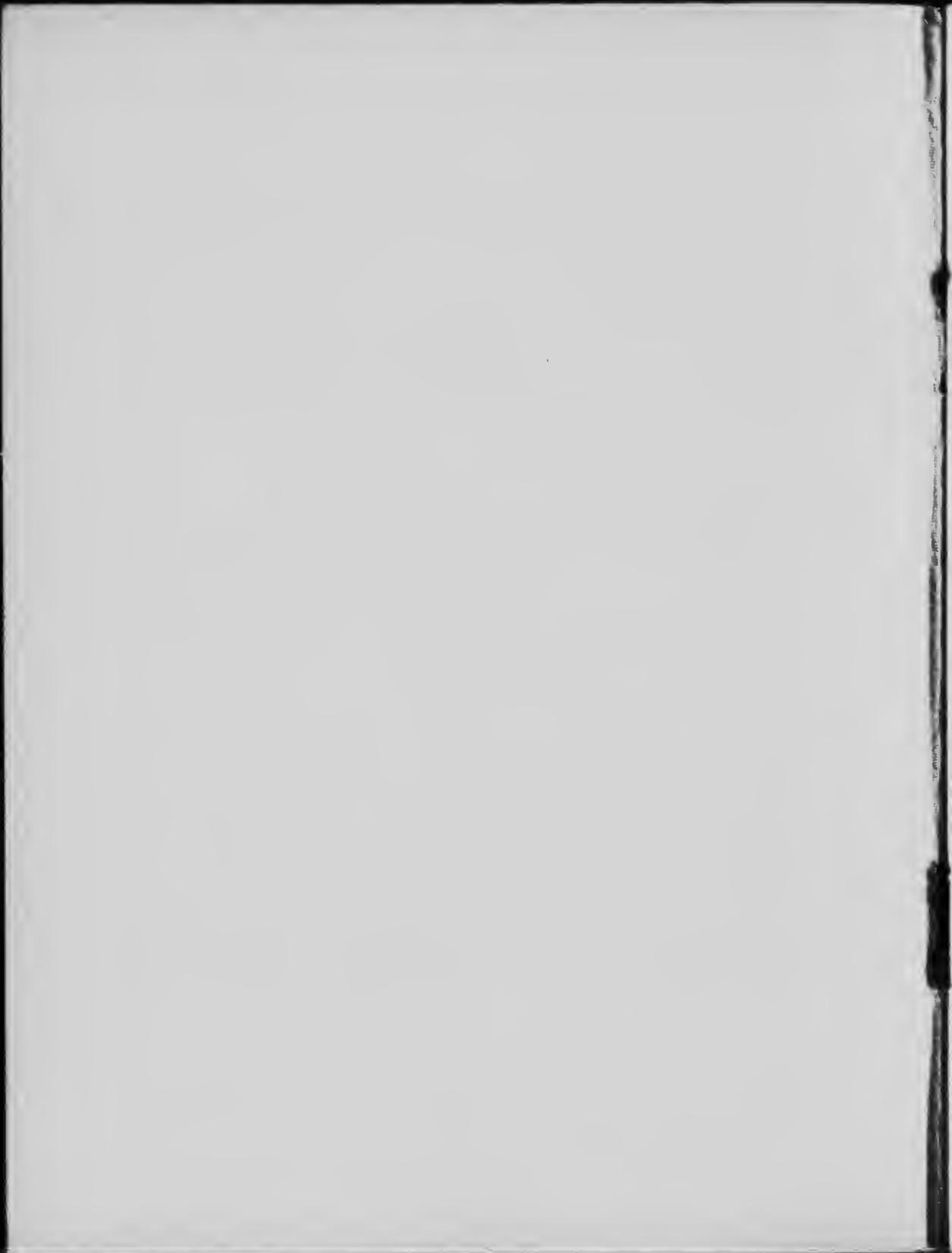
IN

Eastern Ontario 33

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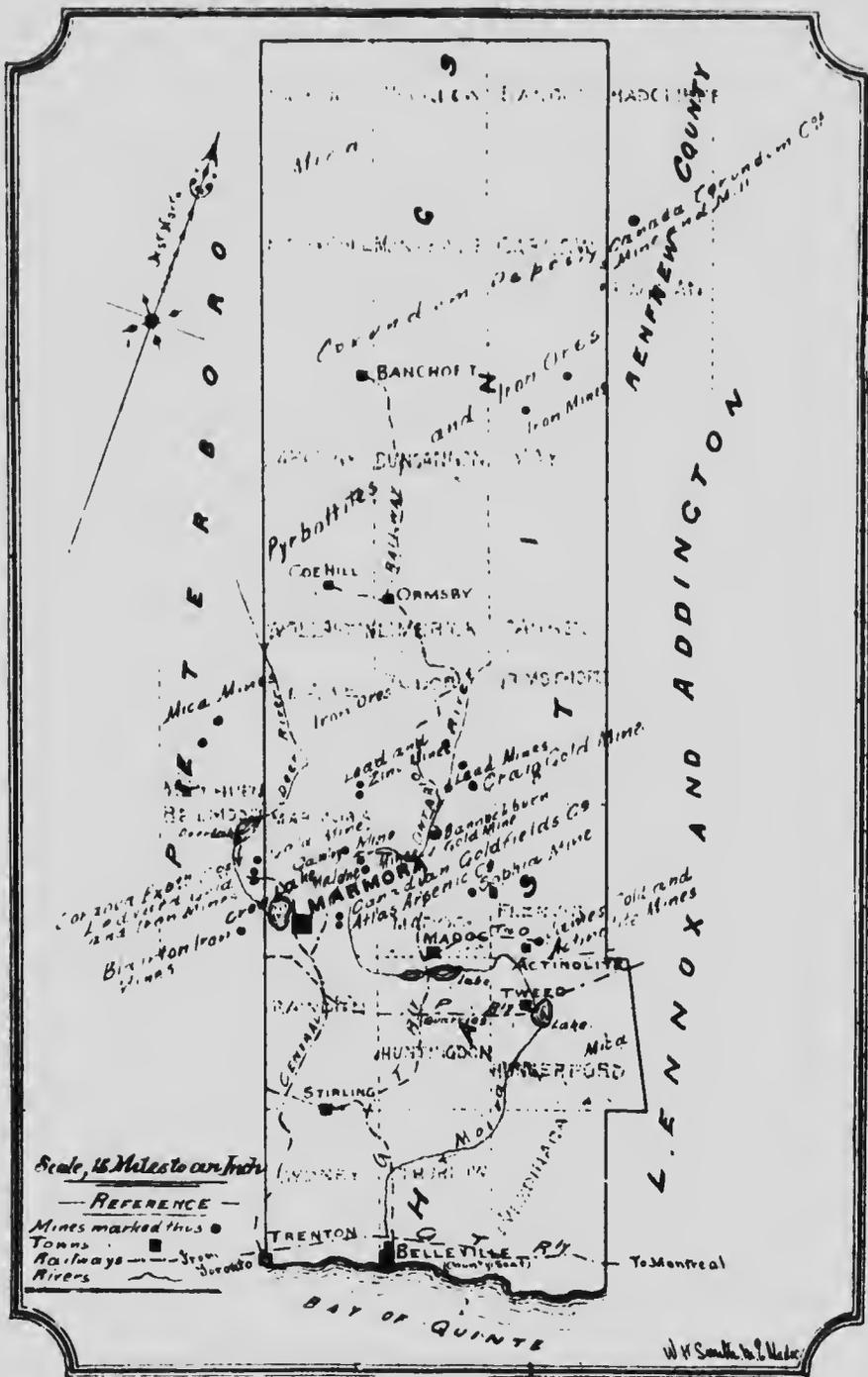
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W. H. Smith, N. S. Nelson

THE FACTS ARE ... SUFFICIENT ...



THE discovery of gold in Hastings County in 1868 created tremendous excitement, and mines and mills became very numerous. The now almost deserted village of Eldorado testifies by its name to the great expectations of mining men in those days. Several properties proved only rich pockets, and this, together with the difficulty then met with in treating the refractory ores of the larger mines, and the contradictory testimony of geologists and experts in regard to the formation being against led to a long period of inactivity, or work of a desultory character.

The companies now operating successfully have wrought a great change in the importance of the district mining. The larger companies, however, are wealthy English or American concerns not looking for capital hence, the progress of the district has not been brought fully before the public as it deserves. For this reason the *Marmora Herald*, with the assistance of a few municipalities of the district, has issued this booklet. Every statement in it is as accurate as it is possible, practically,

to secure it. The aim has been to understate the case rather than err on the other side.

Few values are given, as it is thought that a description of the work being done would be a better basis for an opinion than the mere statement of values. Nor are all the mines described, and for the same reason, that the facts in regard to a few are as likely to lead to an interest in the district as would a more complete list.

No attempt to create a boom is made. The facts are sufficient.



Belmont Gold Mine.

This mine is situated in Belmont Township, Peterborough County, and partly in Marmora Township, County of Hastings, eight miles N. W. of Marmora Village. It was discovered in 1891 by H. Strickland, now of Peterborough, and was purchased by A. W. Carscallen, M.P., of Marmora. It was pretty thoroughly prospected in the following years and was known to be a valuable property from the clear indications of immense ore bodies. The mine was sold in 1897 to the Cordova Exploration Company of Newcastle, England. This company erected a 10-stamp mill, put in an air compressor and complete plant and began operations. In the autumn of 1900, the company were satisfied, from the developments done, that the quantity of ore would warrant a larger plant and a 30-stamp mill was built and completed in February of 1901, at which date the following description was written.

The new mill is 175 x 90 feet and 85 feet high. It is substantially built, neatly finished, painted and well lighted. The thirty stamps are driven by 150 h.p. Corliss engine with main shaft 6½ inches in diameter running behind stamps. The engine and shaft are strong enough to extend the mill and run 120 stamps if necessary. Pulleys on main shaft to drive stamps are equipped with friction clutches so that ten stamps can be hung up completely without slowing the engine. From the side of the engine is a 5 foot pulley

AIR COMPRESSOR



OFFICE, WAREHOUSE AND AIR COMPRESSOR



30 STAMP MILL AND CYANIDE PLANT
BELMONT GOLD MINE

driving belt up to stone breaker counter shaft inside of engine house; other end inside of mill and from there driven up to stone crusher main shaft overhead of crushers. Crushers are 10 x 20 and 7 x 10. The mill in this part has ore bin capacity of 600 tons.

The crushed ore on leaving mortar boxes flows over 36 foot plates with series of ten drops. From there it passes over six Wilfley tables driven by a separate engine with capacity for double that number.

Below this floor is the new cyanide plant. It consists of three large circular steel leeching vats, 15 feet in diameter and 4 feet deep. Below these are two circular steel gold tanks, 7 x 2 feet and further below are zinc boxes where the gold is precipitated by zinc shavings. Below these are two sump tanks 9 x 4 feet, and also three wooden acid tanks on this floor. Above the leeching vats are two other steel tanks 10 x 5 used for storage. This is the first cyanide plant ever used in this district, Deloro using Bromo-Cyanide. The cyanide plant is in charge of W. H. Whytock, who spent five years in the Rosedeeep Mine in South Africa. The stamps and tanks were manufactured by the Wm. Hamilton Co. of Peterborough.

The engine and boiler house attached to the mill is 80 x 40 feet with a hallway 6 feet wide through the centre to enter the mill. The engine room on N.W. side is substantially built with 18 foot ceiling, and contains the Corliss engine already mentioned. The old mill engine is used for driving the dynamos for electric lighting. The boiler house contains two horizontal tubular boilers, set in brick with space for a third. There are the usual feed pumps, with National Heater to heat water over 200 degrees by exhaust steam before water enters the boilers.

Electric current for lighting is generated by two dynamos, driven from counter shaft by clutches. One generates current for the day when light is used in the mine and the other for night. It is a three wire system, this being preferred for its convenience, safety in mine and for better insurance rates. The dynamos have 600 light capacity with 250 lights now installed. There are abundant lights throughout the mine, shafts, mills, shops, office, manager's residence, store, boarding house for the

staff, etc. A large arc light over No. 1 shaft keeps the whole surroundings of the mine constantly moonlight as it were.

Behind the mill is a large tank house 112 x 20 x 20, connected with the mill by an aerial passage. It contains seven large water tanks 15 feet in diameter, 12 feet deep, with capacity to hold 75,000 gallons. The water supply comes from No. 1 shaft.

The Mine. No. I Shaft is situated just north of the mill. Sinking is going on in this shaft, which is now 385 feet deep. There are levels at 100, 200 and 300 feet depths. The level at 300 feet has been run 125 feet east. A cross cut to the hanging wall is 25 feet long. The shaft is supplied with five pumps, two of which are kept in reserve, and three drills. In a short time 400 feet depth will be reached. Possibly a level will be driven from there under No. 3 shaft, a distance of 1,200 feet on the lode. They expect to cut the junction of No. 7 lode at a distance of 700 or 800 feet.

No. II.—Just a short distance west of No. 3. This shaft has been sunk to 185 feet level of No. 3, and used for extraction of mucking ore from this level. At a depth of 120 feet the ore has been stoped out on both sides, on the west a distance of 200 feet.

No. III.—Situating about 1,200 feet east of No. 1. This as well as No. 1 has a large, well built shaft house, the most conspicuous object first seen when approaching Belmont Mine from Marmora. This shaft is being sunk, is now to a depth of 250 feet and is going down to a depth of 440 feet to make connection with the 1,200 foot level from No. 1 as above mentioned. There are levels at 90 feet towards E stoped to the surface, at 185 E, stoped also. On this level is another running south on a lode which is driven in 200 feet and goes underneath the big hill behind No. 3 where there are numerous outcrops. Still farther east than the south drifts, on the footwall side, is the junction of No. 6 lode. This is yet untouched. Three hundred and fifty feet west of No. 3 in bottom level there is a winze being sunk. It has a depth of 75 feet. This is

equipped with hoist and dumping frame and is being sunk for vent in lower level of No. 3.

No. IV.—Shaft is sunk on the lode running S.E. from No. 3 and has also adit level from hillside.

No. V.—Sunk 100 feet, cross-cut at bottom towards hanging wall on the south side is 50 feet. This is a wide lode of low grade ore. There are also drifts driven in at short distances on the 50 foot level of this shaft.

No. VI.—North of No. 3. It is 85 feet deep with drifts N.W. and S.E., at 75 feet depth.

No. VII.—Situating north of mill and No. 1 shaft. It is a large double compartment vertical shaft, equipped with double drum hoist. Depth 75 feet. Drifts driven to S.E. and N.W. As mentioned in describing No. 1 shaft, the lode from No. 7 will form a junction 700 or 800 feet E. of No. 1.

No. VIII.—At west of No. 7, is sunk only a few feet.

No. IX.—Located on north lode.

No. X.—Situating 600 feet east of No. 5. Sunk 40 feet.

These shafts cannot all be operated at present for want of power, which will be remedied in the near future.

The main lode of shafts 1, 2, 3, and 4 can be traced 2,500 feet, and the south lode can be traced an equal distance.

Notwithstanding the large number of shafts, drifts and levels, there are some lodes not yet touched.

The air compressor is a frame building 140
Air x 60 feet and contains cross-compound air
Compressor. compressor with inter-cooler and after-
cooler and condenser, 185 horse power with
air receivers and air line from air receivers to the various
shafts. High pressure steam cylinder, 125 pounds; low
pressure steam cylinder, 25 pounds; high pressure air
cylinder, 85 pounds; low pressure air cylinder, 20 pounds;
two return tubular boilers in separate rooms with electric
damper regulators, large water tank, 7,000 gallons
capacity for coolers.

Water Power. The company own a most admirable water power at Deer Lake, a distance of two and a half miles from the mine. Two splendid dams have been built at the foot of the lake. The large dam is 80 feet long, 12 feet high, 13 feet thick at base and 6 feet at top. It is built of concrete and cement masonry. The other dam has a timber slide 20 feet wide for use of lumbermen and also a sluice gate to admit water to the floom pipe 7 feet square. It is contemplated to install a large air compressor and bring air to the mine through a 10-inch wrought iron pipe which will then supply power for the whole mine.

The saving caused by utilizing this magnificent water power can be partly appreciated when it is learned that 10,000 cords of wood are needed at the mine for power and heating purposes.

Mr. Kerr's plan is to have ample stamp capacity in his mill and power cheap enough that the lowest grade ores can be so thoroughly treated at a low cost that practically all the gold will be extracted from the ore and thus make mining of all the ores profitable. In other words it is not his policy to rush the ores through without the most thorough treatment, which is necessary where power is expensive.

Other Buildings. The assay office has been enlarged. It now consists of a brick building in two parts 20 x 38 and 20 x 20 feet. The larger part contains a sample grinding room, where will be installed a motor sample stone breaker—underneath the floor of which is a 20 x 20 feet cellar for coke—and a furnace room 20 x 18, equipped with combined gasoline furnace and muffle. The other part consists of a laboratory, 20 x 20, an office 10 x 10, and a balance room. The building is heated by furnace.

Several additional machines have been added to the machine shop. It is fitted up with a large turning lathe, 6-foot planing machine, two drill machines, pipe cutting and screwing machine and bolt screwing machine driven by a small air engine. This together with the three blacksmith shops on the mine enables them to make and repair any parts of the machinery.

A tramway has been built commencing at the level of the top of the mill to No. 1, north to No. 7, curving east and south to 6, 2 and 3. Ore is hauled along this tramway (level with top of mill) in cars containing ten tons, by one horse. This tramway will be carried to No. 5 and 10. It forms a perfect circuit for collecting the ore from all the shafts.

A large building for a general store has been built by the company. Connected with it is a post office, doctors' office, and store dwelling. A large number of dwelling houses have been built both by the company and by miners themselves, so that the place is fast taking on the appearance of a small town.

Mr. Kerr's residence has steadily been improved. It contains a natural water supply from the tanks above, is lighted by electricity and is being surrounded by ornamental trees and lawn which will in time make it an ideal residence. The residential headquarters for the staff has been enlarged and they too have most comfortable and commodious quarters.

The staff consists of D. G. Kerr, Manager;
Staff. Thos. Thompson, Cashier and Bookkeeper;
F. Turner, Assistant Bookkeeper; Geo.
Hardy, Chemist and Assayer; W. H. Whytock, in charge
of cyanide plant.

The property consists of 425 acres at the
General. mine, 300 of which is in the township of
Belmont and 125 acres in Marmora. At
Deer Lake the company have 160 acres also.

The foregoing recital of facts in regard to this mine speak for themselves, and leave no need for comment from us. Manager Kerr has done work at the mine that cannot be excelled in any part of Canada. He has devoted his every energy to the work of properly developing the mine and no detail has escaped his notice. A more systematically planned and more thoroughly executed works it would be difficult to conceive. The mine in three years has made progress to its present magnitude, from very humble beginnings, so that there is every reason for expecting bigger things in the course of

another three years, expectations for which there are no fears from anyone at all acquainted with the mine.

“The real gold mining district of Ontario
An Opinion. is in Hastings County ; there is more real engineering going on at the Belmont Mine than anywhere else in this province.” So spoke Mr.



1. D. G. Kerr, Supt. Cordova Exploration Co., Belmont Gold Mine.
2. W. A. Hungerford, Supt. Atlas Arsenic Co., Deloro.
3. P. Kirkegaard, Supt. Canadian Goldfields, Deloro.
4. A. W. Carscallen, M.P., Marmora. Original Owner of Belmont Gold Mine.

Courtney De Kalb, Professor of Mining and Metallurgy in the Kingston School of Mines, who was at the Parliament buildings on Saturday. “We do not say much, but we are doing development work which will keep a mill going for years when crushing is commenced.”
—*Toronto Globe.*

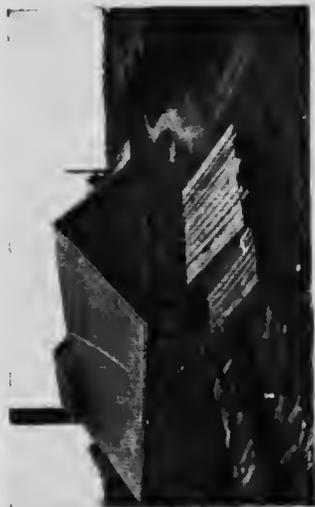
The Canadian Goldfields, Limited.

Gold and Arsenic. The Canadian Goldfield's Mine, best known as Deloro Mine, is situated at the little Village of Deloro, in Marmorora Township, one mile east of Marmorora Station on the C.O.R., three-and-a-half miles east of Marmorora Village and thirty-two miles north-west of Belleville.

The mine was first owned by the Gatling Gold and Silver Mining Company from 1873 to 1880, who spent several thousand dollars developing the property. It was then sold to the Canada Consolidated Gold Mining Company. This company erected large reduction works, a number of dwelling houses, two large brick buildings for offices and staff and residence. (In the large mill is now situated the arsenic works of The Canadian Goldfields.) The company spent extravagant sums in buildings and plant, but made a complete failure in treating the refractory mispickel ores by their chlorination process. In 1883 the expenditures of the company reached \$200,000; work was suspended and the personal property of the company was sold under execution. Work continued two years longer under a lease and was then given up for a complete failure. The old tailings have recently been treated by the present owners and have yielded big returns in gold, showing that the former process was the cause of the failure.

The Canadian Goldfields secured the property in 1896 and at once erected a large mill at Marmorora Station. The ore was treated by the bromo-cyanide process pure and simple for nearly a year when the mill and plant were destroyed by fire. The management of the company was changed and put in the hands of Mr. P. Kirkegaard. A new 10-stamp mill was erected on the mine and a double

AIR COMPRESSOR



20 STAMP MILL, POWER HOUSE, BROMO-CYANIDE PLANT AND ASSAY OFFICE
CANADIAN GOLDFIELDS, DELORO

process was begun, which has proved a great success. The process now consists of first amalgamating and then treating the concentrates with bromo-cyanide. In 1898 the former old mill was completely overhauled and fitted up for manufacturing arsenic. The undertaking was completely successful and arsenic of the highest quality is now manufactured in large quantities. The new process throughout proved so successful that the company decided, in July of 1900, to double their plant, which was completed in January of this year. Now the company have a twenty-stamp mill running night and day, a bromo-cyanide plant large enough to treat the concentrates, and an arsenic plant that cannot be surpassed anywhere in the world.

The ores of the main lode consist of quartz more or less heavily impregnated with arseno-pyrite, "mispickel," with occasional copper pyrite and frequently a large percentage of iron sulphide. These ores are worked for their gold and arsenic contents. There are other veins on the property, these are different in composition and require different treatment. Shafts follow the lode on the incline and levels are driven north and south. The lode is irregular, varying from four to five feet, "the average," to twenty-five feet in places. There are no defined walls; as a rule the quartz is merging into the wall rock, which is, in some places talcose schist, in others diorite, the latter being the country rock. The galling lode is now being worked to the fourth level, 310 feet, and 100 feet is being sunk to the fifth level. A diamond drill is used for prospecting.

A thorough system for hoisting, sorting, and transportation, a distance of 800 feet, to the mill is in vogue. There are twenty stamps weighing 850 pounds each, dropping 110 times to the minute with 6 to 7 inches drop. Screens are 40 inches mesh, bur slot. Crushing capacity is 80 tons a day.

Many difficulties have been overcome in amalgamating these ores of varying character. The average saving is 57 per cent. of assay value by amalgamation only.

The concentrating plant consists of three hydraulic

classifiers, and five 6-foot smooth belt vanners for the old 10-stamps, three Wilfley tables, one classifying cone, and one Bartlett table for the new 10-stamps. The tailings carry only 2 to 2½ per cent. of the original gold value and 0.5 per cent. of the mispickel contents of the milling ore. Concentrates are transported in cars to the leaching plant, where they are treated by the bromo-cyanide process.

**Bromo-
Cyanide
Plant.**

The Bromo-Cyanide, (Sulman-Teed) process consists of (1) Extraction of gold by leaching the finely ground ore with a solution of potassium cyanide, to which is added a small quantity of a solution of a "haloid" salt of cyanogen-bromide. (2.) The precipitation of the precious metal from this bromo-cyanide "liquor" is by means of metallic zinc. (3.) The "clean up" of the zinc-gold slimes thus obtained.

The plant now in use, and which is situated in a two-storey building below the mill, consists of four leaching vats fitted with sand and pebble filter bottoms and bottom discharge gates; four solution or "liquor" tanks on the floor above; three small Northey duplex steam pumps for circulating the liquors; three small "sump tanks," 40 gallon barrels; 250 gallon barrels holding stock solution of cyanogen-bromide; one Sulman's patent precipitating cone for zinc fume; filter press; one zinc box; pipe systems; one acid-treatment tank; one settling tank and one filter tub.

The extraction of gold from the concentrates gives an average of 90.5 per cent. This with the values saved by amalgamation gives a total saving of 88 to 90 per cent. of the original gold contents of the ore, a result which, as an average of two years' steady work, will, it is thought, be generally admitted to be exceptional on so refractory an ore.

Two excellent papers read by Messrs. P. Kirkegaard and S. B. Wright at the Canadian Mining Institute at Montreal this year give their treatment in detail. These papers are also published in the *Canadian Mining Review* for March, 1901.

**Arsenic
A By-
Product.**

The concentrates, after the extraction of their gold contents, are sent to the arsenic works, where they are treated for the arsenic they contain. The crude arsenic resulting from the calcination is in turn refined and produces white arsenic, "arsenious oxide," analyses of which show 99.4 to 100 per cent. pure As_2O_3 , and is of a pure white color. This is the only arsenic producing plant on the American Continent, manufacturing arsenic on a commercial scale. The production is fifty to sixty tons a month.

Power.

The air compressor plant is located in a brick building 50 x 75 feet. The air compressor is a Rand Drill Company machine of 200 h.p. capacity. This is furnishing air for the drills in the mine and for general purposes. Also one 60 h.p. air compressor for pumping only, known as the Harris Air Lift. Direct active pumps are entirely done away with by this air lift. By this system all the machinery connected with it is in the power house and under the engineer's care. Compressed air is forced through a system of pipes and tanks placed at the bottom of the mine. The same air is used over and over again without any escape. The whole operation is automatic and effects a great saving over direct active pumps. The engine furnishing the air is a cross compound, steam and air with intercooler and is one of the highest grade machines built by the Rand Drill Co. This is the first mine in the world to use the Harris Air Lift.

The brick power house at the mill contains a tandem compound Robb-Armstrong engine, 75 h.p., for driving stamps and other machinery. Also a 40 h.p. Robb-Armstrong engine for driving a 30 K.W. alternator which is furnishing light for the whole plant.

General.

The company have erected a handsome hall for their men to use for church and literary and social purposes, in which is installed a complete library. Besides there are many dwellings which make the Canadian Goldfields a little

MANAGER'S RESIDENCE AND OFFICES



HALL



ARSENIC WORKS
CANADIAN GOLDFIELDS, DELORO

village in themselves. The company are making an excellent exhibit at the Pan-American Exposition.

It is quite safe to state that the Canadian Goldfields, Limited, have at their Deloro Mine, not only a complete and up-to-date plant, but also a model plant; and they deserve great credit for having so successfully overcome all difficulties experienced by former owners of the mine, in the treatment of these very refractory ores.

The staff consists of P. Kirkegaard, General Manager; S. B. Wright, Chemist and Assayer; George MacQueen, Cashier; E. F. Johnston, Bookkeeper; A. H. Brown, Assistant Assayer.



Atlas Arsenic Mine.

This mine is one of the mispickel group. It is situated on part of lot 10 in the 9th concession of Marmora Township touching the Canadian Goldfields on the north. The property was reserved by the late J. W. Gatling, brother of the inventor of the gatling gun, when he formed the Gatling Gold and Silver Mining Co., he no doubt considering it the most valuable of the Deloro group. After his death, the property passed into the hands of some local men, who sold it to The Atlas Arsenic Co., in May, 1899. The Atlas Arsenic Co. was formed by W. A. Hungerford, of Belleville, who has associated with him some capitalists of Cleveland, Ohio.

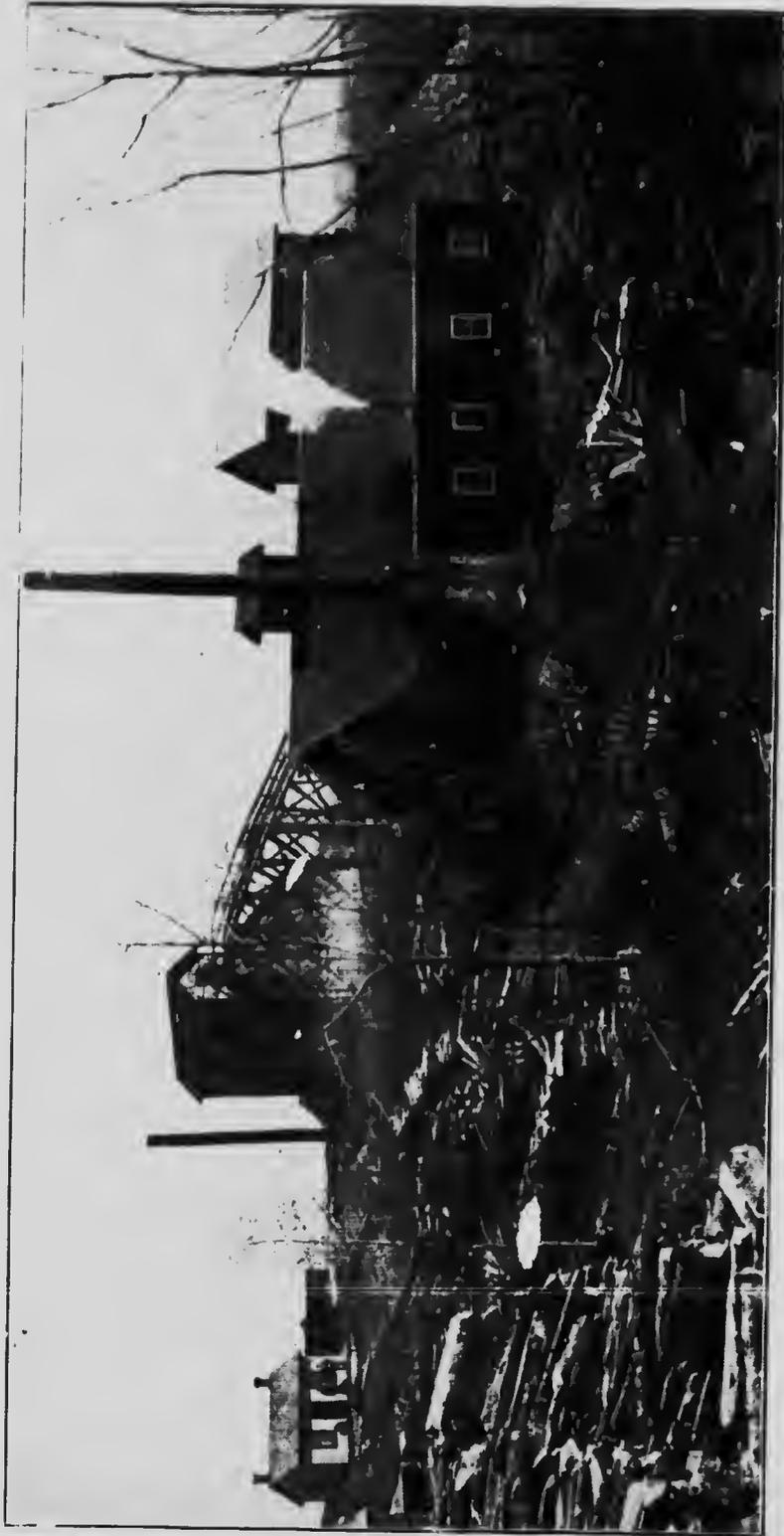
Since then they have done a large amount of development work. They erected a modern 10-stamp mill, 10-drill air compressor plant, shaft houses, blacksmith shops, repair shops, office and thoroughly up-to-date plant.

The ore has proved as rich as was anticipated, having yielded \$10 a ton by amalgamation besides the concentrates, which are rich in arsenic as well as gold. The company intend to treat these concentrates by the cyanide process immediately, and also to build a plant for treating arsenic. The company have had unusually high

OFFICE.

TEN-STAMP MILL.

AIR COMPRESSOR.



ATLAS ARSENIC CO'S WORKS, DELORO

returns from amalgamation. Gold bullion is shipped monthly.

The main shaft of the mine is now down over 200 feet. Levels have been run at 80 and 200 feet; the first level has been run 400 feet and work is now being carried on in the second level. A large development work has also been done on other parts of the property.

Besides this property, the company owns 400 acres of mineral lands on which development work has been done. The Gawley mine is situated in one of these properties. This is undoubtedly one of the finest mispickel properties in Canada. The vein, at 100 feet, is over 14 feet wide. A large quantity of this ore has been sent to the Pan-American Exposition. The company are pushing development on the property and are working now on the first level at 100 feet. They are negotiating for a compressor, which will be installed within a few weeks. A mill will also be erected shortly. Three other veins on the property can be traced over a mile on the lots.



Ohio Gold and Arsenic Mining Co.

This company was formed two months ago by W. A. Hungerford, associated with J. W. Britton, of Cleveland, Ohio, who have interested with them a number of the wealthiest capitalists of that city. They have purchased from The Peare Co., Limited, of Marmora, part of lot 8, con. 9, Marmora township, adjoining the Canadian goldfields on the south.

The property was known at one time as the Severn Mine, having been opened in 1868, during the first great gold excitement.

Development work is being rapidly pushed, at the present time the shaft being down 110 feet. The company intend to erect a complete plant—mill, compressor, cyanide and arsenic works—during the season.

Great expectations are being built on the prospects of the company, who have a most valuable property and unlimited capital at their command. Mr. Hungerford is managing the company.



Craig Mine.

It is situated in Tudor township, Hastings county, seven miles from village of Bannockburn, on the C.O.R., eighteen miles from Madoc, and forty miles from Belleville. This mine was worked some years ago by Toronto capitalists, but, owing to a dispute with the owners in regard to the terms of option, they were obliged to abandon work. The property was secured a few weeks ago by W. A. Hungerford, who has formed a company of Newark, N.Y., capitalists, who have commenced work.

A vein of gold-bearing quartz has been traced for over 1,000 feet on the property. The vein is remarkably well defined with talcose slate walls. The strike is north-west, with almost a vertical dip. Over 1,000 feet of stripping has been done on the

surface, showing the vein to be from five to eight feet. A shaft has been sunk 103 feet. At fifty feet the vein was eight feet four inches, and at present depth shows over twelve feet. Seven tons of ore were sent to the Kingston School of Mining for treatment, giving \$17.09 in gold a ton. Concentrates yielded \$40.82 a ton. The ore is essentially free milling.

The following extract is from a report on the property by Wm. Hamilton Merritt, M.E., of Toronto, one of the leading men of Canada in his profession :

"I may state that, taking into consideration the locality, which enjoys advantages of labor at reasonable prices and farm produce close at hand, I do not know of a more attractive mining proposition in Ontario."

If the property proves equal to the reports, the company will, during the season, build a very large stamp mill. Mr. Hungerford is a director of the company.



James Mispickel Property

This property consists of 308 acres in Hastings county, at the village of Actinolite, five miles north of Tweed, thirty miles north of Belleville, and eight miles east of Madoc. The G.T.R. have a track graded to this property from Madoc, and the proposed extension of the Bay of Quinte Railway from Tweed crosses the property. The C.P.R. is only five miles distant at Tweed.

On the property are large deposits of mispickel, and extensive water powers, one of which is developed—five Leffel turbines. The other, with a fall of over fifty feet, is undeveloped. The ore bodies contain large quantities of arseno-pyrite (mispickel) associated with quartz and a little iron pyrite, occurring in sheer zone fissures; of these there are at least four distinct occurrences, one of which appears to be nearly one hundred feet wide. Five shafts have been sunk from twenty to forty-two feet, all in mispickel ore. The gold value of this ore is low, but it can be said with confidence, based upon numerous tests, that a slight profit would be made from the gold won over all costs of mining and treating, saving the arsenic for profit, less cost of calcining the same.

There is no doubt as to the permanency in depth of these

deposits, and the width of the ore zones will be found very great. There is every facility for the economical working of a low-grade deposit. The proper treatment of this ore is that used at the Canadian Goldfields, Deloro, Ont.

For full information address Joseph James, Actinolite, Ont.



Sophia Gold Mine.

This mine, formerly called the Diamond Mine from the original owner of the property, is situated near the village of Queensboro, in Madoc township, seven miles from Madoc village on a well-built county road. The property was owned and developed by Mr. D. E. K. Stewart, of Madoc, who sold the mine to a number of Montreal capitalists and Senator McLaren, of Perth, who has the largest interest in the property. The name of the mine was changed to Sophia in honor of the wife of Senator McLaren. Last year a modern 10-stamp mill was built at the mine, where development work and milling have since been carried on. The ore is free milling, with one shaft of high-grade mispickel ore. Drilling has been done by steam, but an air compressor plant will likely be added shortly.



Actinolite for Roofing.

The mining and grinding of actinolite for roofing was started in Actinolite, (then called Bridgewater), in 1883, and is probably the oldest mineral industry in the district in continuous operation. Practically the total output is shipped to the United States, where it is manufactured into roofing composition by being mixed with coal tar, pitch and other ingredients. The principle users of this material are M. W. Powell Co., Chicago; Machwirth Bros., Buffalo; and W. B. Lupton & Co., Pittsburg, Pa. Lesser quantities have been shipped to other points.

All information concerning this thoroughly tested material can be obtained from either of the above firms, or from Joseph James, Actinolite, Ontario.

Campbell-Blomfield Property.

This property situated on east half lot 6, con. 8, Marmor, is owned by Messrs. A. H. Campbell, of Toronto, and C. J. Blomfield, of Lakefield, Ont. It was purchased by them many years ago on a favorable report of it from Prof. Chapman, who visited it at their request. A large price was paid for it on the expectation that the ore in the old Gatling Mine, in which they were largely interested, could be successfully treated. In this they were disappointed as our readers already know. The bromo-cyanide process has solved the method of treatment, and this property may now be considered as valuable as the purchasers supposed.

Since its purchase in 1871, six acres of the south-east corner were sold to the Toronto Mining Co., with, however, mining rights reserved. The only vein that has been opened on it, lies on the north-east part across which it runs diagonally. To quote from Prof. Chapman's report, "A well defined quartz vein carrying a large amount of mispickel or arsenical pyrites, with frequent shows of free gold, traverses the lot in a general north-west and south-east direction, with a westerly dip or underlie of apparently about thirty degrees vein at least six feet wide; but the width evidently increases at lower depths. A seam of talcose slate lines the foot wall as in Gatling Mine on lot 9 of the same concession, where a shaft has been carried down to a depth of fifty feet and where it presents a width of from sixteen to eighteen feet. This ore is of exactly the same character. If the vein on lot 6 be not a continuance of the Gatling vein, of which there is every probability, it will run closely parallel with and adjacent to the latter." Prof. Chapman also testifies to the great richness of the ore.

On the vein referred to a shaft was sunk many years ago about seventy feet deep. There is another of more recent date of from ten to twenty feet and the vein has been opened pretty well along its entire length, giving excellent opportunity for inspection. There is a neat building on the north part of the lot which can be used at the commencement of any further developments of this property. The Moira River, which runs through the lot gives ample water supply.

We understand the property is for sale.

Ledyard Gold Mines.

Situated in east half of lot 19, con. 1, Belmont, adjoining Belmont Gold Mine on the south. There are two systems of veins which can be traced for long distances and which contain an immense amount of ore. Shaft has been sunk 100 feet, with an average width of from six to eight feet. The Marmora Railway runs through the property to the Belmont Iron Mine on west half 19, (described elsewhere).

The Ledyard Gold Mine is one of the largest and best propositions in the whole district and with sufficient working capital ought to prove one of the leading mines of Canada. For assays, maps, reports, and full information, address T. D. Ledyard, 67 Yonge street, Toronto.



Central Ontario Railway

The Central Ontario Railway furnishes the most direct communication with the mining centres of Hastings. It runs from Picton north to Bancroft, a distance of 116 miles. At Trenton it forms a junction with the main line of the Grand Trunk Railway and meets Lake Ontario steamboats. North from Trenton, fifteen miles, it crosses the Midland Branch of the G.T.R., running from Belleville to Peterborough and Toronto. It crosses the main line of the C.P.R., twenty-five miles north of Trenton at Central Ontario Junction. The road then runs directly by the gold and arsenic mines at Deloro, Malone, Bannockburn, the iron mines at Eldorado, Millbridge, Coe Hill, and Bancroft. The Marmora Railway branches off from the C.O.R. near Marmora, and runs to the Belmont Gold Mine, and Ledyard Gold and Iron Mines. The C.O.R. operates this road also. The C.O.R. does an immense business in taking out timber of every description from the northern part of Hastings, in freight and passenger traffic to the thriving mines and villages along the route, and especially in conveying sportsmen to the magnificent hunting and fishing district of the North. Mr. George Collins, Trenton, is General Superintendent of the road.

Iron Ore Deposits in the North Hastings District

(Compiled from Ontario Bureau of Mines Report.)

There are three classes of iron ores in the Hastings district, namely, titaniferous magnetites, non-titaniferous magnetites, hematites. No bog ores occur in large quantity.

TITANIFEROUS MAGNETITES.

These iron ores have been subjected to experimental metallurgical investigation, by several experts, and results show that they will come into commercial use in making steel, as they contain appreciable quantities of nickel, vanadium, chromium, etc.* Investigations carried on for three years by Dr. F. J. Pope, formerly of Kingston School of Mines, both in the field and in the metallurgical laboratory of Kingston and Columbia University School of Mines, show that it is not possible to lower the percentage of titanium by magnetic concentration, as the titanium appears to be in intimate combination with the iron.

Prof. W. G. Miller, geologist, of Kingston School of Mines, has studied the origin of the deposits and believes them to be of igneous origin and considerable size.†

According to the present practice of the iron smelters they are difficult and costly to reduce, so that at present the deposits are lying untouched.

HEMATITE.

Numerous deposits are known to exist, and shipments have been made to smelters from the following deposits :

Wallbridge Mine.—Operated by C. M. Wallbridge, of Madoc. Reports state that 80,000 tons of ore have been shipped from

* British Association and Science, Toronto meeting, 1897.

† Report of Bureau of Mines, 1897.

the mine since commencement of work. Located on lot 12, 5th and 6th concessions of Madoc township, two miles south of Eldorado Station, C.O.R.

Miller Mine.—Operated during 1897 by A. G. Longnecker. Located on lot 9, 14th con. Huntingdon township, one-and-a-quarter miles from Madoc railway station.

St. Charles Mine.—Operated during 1898 by A. W. Coe, of Madoc. Located in Madoc township, two-and-a-half miles north of Madoc railway station.

Welch Mine.—Operated during 1898 by A. W. Coe, of Madoc. Located in Madoc township, one-and-a-quarter miles from Eldorado station, C.O.R.

Empey Mine.—Being worked by H. C. Farnum, of Eldorado. Located half mile west of Eldorado village, about 500 yards from the C.O.R.

Eldorado Mine.—Operated during 1900 by A. W. Coe, of Madoc. Located adjacent to Empey Mine apparently a continuation of the same deposit.

N B.—See recently published map by Ingall of the Geological Survey, giving iron localities. Price ten cents.

Several other hematite deposits, notably the Sexsmith Mine in Madoc, have been profitably worked during past years.

The hematite is comparatively free from sulphur and phosphorus.

NON-TITANIFEROUS MAGNETITES.

Non-titaniferous magnetic iron ores are the most important source of supply in the district. They usually carry sulphur in most cases less than 0.50 per cent. the maximum percentage allowed by smelters making coke pig iron.

(3) Dr. Douglas, a successful metallurgist of world-wide reputation, recommends the utilization of these ores by Swedish methods by which similar ores after a series of careful elimination of impurities are used to make first grade charcoal pig iron and steel, the principal point being a careful elimination of sulphur-bearing ore usually occurring in segregated masses by sorting.

(3) Proceedings of Canadian Mining Institute, 1899.

Ore has been shipped from the following deposits to the smelters :

Cook Mine.—Worked during 1898 by A. W. Coe, of Madoc. Located on lot 15, 5th con. of Madoc township, one-and-a-half miles south of Eldorado station, C.O.R.

Malone Mine.—Worked for several years by Thos. Barnes, of Hamilton. Located in Marmora township, 300 yards from Malone station, C.O.R.

Belmont Mine.—Worked for several years by T. D. Ledyard, 67 Yonge street, Toronto. Located on lot 19, 1st con. of Belmont township, Peterboro county, having a spur railway line to the mine connecting with the C.O.R.

Coe-Hill Mine.—Worked during 1900 by A. G. Longnecker. It is said that 30,000 tons of ore are lying on the dumps as being too high in sulphur to meet present smelter requirements, but will probably come into the market. Located in Wollaston township at the Coe-Hill terminus of the C.O.R.

St. Charles Mine.—Being worked by T. C. Gordon, of Millbridge. Located three-quarters of a mile west of McDonald's Siding, C.O.R., Tudor township.

Sumalee Mine.—Being worked by Sumalee Mining Co., of Belleville. Located on lot 21, 17th con. of Tudor township, two-and-a-half miles south-west of Gilmour station, C.O.R.

New Find Mine.—Being worked by H. C. Farnum, of Eldorado. Runs low in sulphur and phosphorus. Located five-and-a-half miles east of L'Amable station, C.O.R., in Mayo township.

Sprague Mine.—Being worked by H. C. Farnum, of Eldorado. Runs low in sulphur and phosphorus. Located near New Find Mine.

Child's Mine.—Being worked by H. C. Farnum. Runs low in sulphur and phosphorus. Shipments have been made to Deseronto Iron Co. for making charcoal pig iron. Located about eleven miles east of L'Amable station, C.O.R., Mayo township.

Blairton Mine.—Worked several years ago for making charcoal iron. (4) Owned by The Pearce Co., of Marmora. Location, lot 8, 1st con. Belmont township, Peterboro county. Shipping facilities, about three miles north of C.P.R.

There are other deposits in the district which have been worked irregularly, most of them adjacent to railways and in Haliburton, Peterboro and Hastings counties.

(4) Geological Survey Report, Ottawa, 1863.

IRON SMELTERS IN ONTARIO.

The Hamilton Steel & Iron Co., Hamilton, Ontario, operate a 200 ton (daily) smelter, making several grades of coke pig iron ; also a steel plant and rolling mill.

The Deseronto Iron Co., Deseronto, Ontario, operate a forty-five ton (daily) plant, making charcoal pig iron of first grade.

The Canada iron Furnace Co., Midland, Ontario, operate a 150 ton (daily) plant, turning out coke pig iron of several grades.

The steel plant is in course of erection at Sault Ste. Marie.

GOVERNMENT BONUS TO IRON PRODUCTION.

The Ontario Government Iron Mining Fund pays out \$1.00 per ton of pig metal on iron ores, mined and smelted in Ontario, but only \$25,000 of this fund is to be paid out in any one year.

In the case of pig iron made from foreign ores by Ontario fuel, as the sole fuel, a bonus of fifty cents per ton of pig metal is granted, subject to the condition that a certain proportion of native ore is also used.

The Dominion Government also grants a bonus to the production of pig iron and steel made in Canada.

For detailed information see Annual Report of Bureau of Mines of Ontario, to be obtained from the Director, Bureau of Mines, Parliament Buildings, Toronto.

Canada Corundum Company

By the operations of The Canada Corundum Co., Limited, there has been developed in Eastern Ontario a mining enterprise, that is of more than ordinary importance.

In 1897 it was discovered that North Hastings and South Renfrew contained some very large deposits of crystal corundum, and on account of their economic importance, the Government had their geologists carefully trace out the corundum bearing formation. The belt was found to extend across eight townships and to average over a mile in width. Once the geological key to the formation had been discovered, the Government experts found it easy to locate the chief deposits which were a dozen or more in number and all the land within the corundum belt was withdrawn from sale.

This having been done the Government advertised for tenders for their development and agreed to give to the parties making the best tender the right to choose such deposits as they wanted together with the further right to take up further deposits each year for ten years. The deposits were to be held under a lease renewable perpetually and without royalties.

Mr. B. A. C. Craig, Joseph N. Shenstone and Lloyd Harris were successful in their tender. In tendering, however, they were in an advantageous position as they had previously acquired by purchase the deposit which is by far the largest and best located of all the deposits and which is now known as the Craig Mine. This property had been taken up before the Government withdrew the lands from sale, the parties who first obtained the patent having procured it under the belief that it was a huge deposit of phosphate. The agreement with the Government was made in September 1899, and shortly afterwards the successful tenderers turned the properties over to the company organized by them and known as *The Canada Corundum Company, Limited*. This company is now producing in grain form over one-half of the world's supply of its hardest abrasive.

Corundum may be popularly described as being a pure emery. Emery is an iron ore with more or less corundum disseminated

through it. Corundum is the hardest thing in the world except the diamond, and it is the corundum of the emery that does the cutting. The iron ore simply rubs and burns. Emery, the impure form of corundum, is found in the Island of Naxos in the Mediterranean, in Turkey, in Asia, and in Chester, Mass. In its purer form corundum has been found in small quantities in North Carolina, and in Georgia, and also in India and Burma. It is in the latter two places that rubies and sapphires are found, these being the gem varieties of corundum. Rubies and sapphires are in fact corundum crystals of a very clear and pure quality.

For the last twenty years corundum has been mined commercially in the two Southern States above mentioned, but the corundum in both these States occurs in a secondary formation and the deposits are small and pockety.

In Ontario, however, the corundum is found in huge dykes and is a primary or original constituent of these dykes.

The Craig mine is situate in the first and second concessions of the township of Raglan, and is within a mile of navigable water which gives direct communication with the Canada Atlantic Railway at Barry's Bay.

The eruptive dyke here forms a high hill slightly over 500 feet in height. The Government Report of 1899 in speaking of it says :

"On this hill corundum may be traced over a mile or more along its southern face wherever the syenite is exposed. An expert who has examined this hill estimates the corundum in sight at several millions of tons. There is certainly a large quantity and in some places it amounts to from thirty per cent. to forty per cent. of the rock mass."

The corundum in this deposit is all of the crystal variety and this is the most desirable kind. In the Southern States the corundum in most deposits varies much in its nature, but here the corundum throughout the whole deposit is absolutely uniform. This fact is of considerable advantage to the manufacturers who use it. It was not until the spring of 1900 that the litigation which obscured the title of this deposit was cleared, so that The Canada Corundum Company could begin operations.

There is a water power near the foot of the hill and a mill was built on this. It was calculated that this mill would turn out over ten tons per day of pure corundum. The mill was put in operation about New Year's, but the tremendous

difference in hardness between corundum and ordinary rock resulted in a much smaller output than was then calculated on. Finishing rolls that were put in to re-crush the corundum and that had a capacity of between 100 and 200 tons of granite were found to re-crush but two tons of corundum so that the capacity of the company until lately has been limited to this amount. This sells at \$140 per ton. The company, however, have recently added a large addition to its plant. Early in June of this year additional machinery was installed and the capacity of the company has been brought up to about six tons per day.

Much difficulty was experienced in successfully treating the ore, but this has all been overcome and the following letter is but a sample of the many testimonials that have lately been received :

PRESCOTT EMERY WHEEL COMPANY, LIMITED,
Manufacturers of Emery Wheels, Grinding and
Polishing Machinery.

PRESCOTT, ONTARIO, CANADA,
May 29th, 1901.

MESSRS. CANADA CORUNDUM CO., LIMITED,
Toronto, Ont.

DEAR SIRS :—Yours of 27th instant to hand. In reply we would say that we are much pleased with your product which is, in our experience the best corundum ever put on the market. We might say, after giving it a thorough test we find it about twenty-five per cent. purer than the old North Carolina and Georgia article, which before the mines ran out was the best article that could be then produced. Our customers' reports regarding its cutting qualities are unanimous, it being a cool and fast cutting abrasive, and adding much to the life of the wheel.

Enclosed please find order which please have shipped at your earliest convenience.

Yours truly,
PRESCOTT EMERY WHEEL CO., LIMITED.

Craig Mine corundum has already been adopted almost altogether in Canada. Probably eighty-five per cent. of the wheels now manufactured in Canada are made from it, and its use in the United States is steadily increasing. The great reason for this lies in its purity. Emery averages thirty per cent. corundum ; this means that thirty per cent. of an emery wheel has cutting qualities while seventy per cent. simply rubs and burns.

Craig Mine corundum, turned out by The Canada Corundum Company, Limited, averages over ninety-five per cent. pure. This is by far the the highest grade of corundum in the market. American corundum does not average over sixty per cent. pure. Besides this the Craig Mine corundum contains less water chemically combined than any other corundum known to commerce, and in corundum the more complete the absence of water, the greater the hardness of the wheel. Tests made on behalf of the Ontario Government have shown that cutting on steel it will grind away from two to eight times as much as the best artificial abrasive.

The company has now over forty men on its pay-roll.

As its supply of ore is practically unlimited, it is contemplating the erection next spring of a much larger mill and the probable reduction of its prices. Should it do this it should not be long before emery will disappear almost entirely from commercial use. Already, as a result of the operations of the company, Ontario can claim to be a far greater producer of corundum than any other country in the world.



Blairton Iron Mine

A very interesting part of the early history of pioneer days in Ontario centres about the Blairton Iron Mine, which was the first mine, worthy of the name, in the province. Its history extends back to 1820, when a wealthy English company commenced mining the ore. A smelter was built at Marmora, then in the midst of a virgin forest, ruins of which yet remain as landmarks of the past. Many of the streets of the village bear the names of persons connected with this company. An immense amount of money was spent by the company, who found mining unprofitable as soon as the Canadian canals were constructed, thus admitting foreign ores at lower rates than they could compete with, on account of the great difficulties of transporting material and ore in the then backwoods district. The papers, books, old reports and government records in relation to this mine are as interesting as many works of fiction or romance.

In 1866 the Marmora Foundry Co. was amalgamated with the Cobourg and Peterborough Railway Co., under the title of the Cobourg, Peterborough & Marmora Railway and Mining Co., and mining was resumed with shipments to

Pittsburg, Cleveland, Buffalo, Erie and Charlotte. A sect on of railway was built from the mine to the Narrows on the Trent river, whence the ore was taken by boat to Harwood on Rice lake and again put on cars for Cobourg where it was shipped to points above mentioned. In 1868, some 12,700 tons were shipped; in 1869, over 15,000 tons; in 1870, over 12,000 tons; in 1873 (the records for 1871 and 1872 are destroyed), 10,100, the last year in which the mine was worked. It can readily be seen that this method of shipment, necessitating half a dozen transshipments could only be profitable in early years when the price of ore would stand high transportation charges. The company employed over 200 men handling the ore alone.



ONE PIT OF BLAIRTON IRON MINE

In 1883 the whole property, including railways and rolling stock, mines, furnaces and works, dwellings at Blairton and Marmora, and about 30,000 acres of land were offered for sale by direction of the court, and were bought by the late T. P. Pearce. Mr. Pearce formed the Pearce Company, Limited, the present owners of the mine.

The Blairton Iron Mine still remains idle, notwithstanding that, at the lowest calculation, there are, in the three immense pits on the property, 1,000,000 tons of choice magnetic ore in sight together with a large body of hematite ore. There can be no two opinions that this is the best iron mine in Eastern Ontario and will no doubt be again worked on a large scale.

The grade of the old railway yet remains to Trent River, crossing the main line of the C.P.R., three miles from the mine. When the Trent canal is completed, shipments can be made very cheaply by water direct to American ports.

Various American experts, who have examined the mine, have reported favorably, both as regard to quality of ore and cheap transportation of the same. We understand the Pearce Co., Limited, Marmora, Ontario, are offering the mine for sale.

Mica

Mica mining is a growing industry in Frontenac county, north of Kingston. It occurs in large pits which eventually run out and deeper shafts have to be sunk or new ones started in order to strike new pits. It sells at about \$100 a ton for electrical purposes.

Truesdale Mine.—Is situated in Loboro township, Frontenac county, five miles north-east of Sydenham village. It is operated by the General Electric Co., of Schenectady, N.Y., with G. W. McNaughton, manager. It turns out one-and-a-half tons a day. Shaft is down eighty feet, has been in operation two years, and employs eighteen men.

Freeman Mine, Loboro, is owned by Peter Freeman, of Sydenham, and turns out 400 pounds daily.

Goold Lake Mine, Loboro, is owned by the Webster Co., of Ottawa, and employs fifteen men.

Stoness-Kent, in Bedford township, is the largest producer in the whole district. Shaft is down 500 feet. Owned by R. E. Kent and others of Kingston. Eighteen men with steam drills turn out two tons daily. In their factory, at Kingston, ten men are employed thumb dressing the mica.

The Tett Mine is said to be the second largest producer in Ontario, and sold \$70,000 worth lately to one man. Owned by Tett Bros., Bedford Mills.

McNally Mine is in North Burgess township, and operated by the Westport Mining Co., of Westport. Output is one ton a day.

There are dressing factories at Perth, Sydenham and Kingston.

Mica occurs in irregular pockets and veins in pyroxine rock which is characteristic of the deposits. The vein matter

consists of mica crystals from two to seven feet in length, six sided and cigar shaped. Associated with it is phosphate which is saved as a bye-product; and crystalline limestone, hornblende, fluor spar, barite, etc.

Mica occurs also in large quantities in the northern part of Hastings and Peterboro counties, but as yet is not mined to any extent.



Pyrite

Pyrite has been found at Bannoekburn, on the C.O.R., where some prospecting has been going on for several months. The ore is shipped to Buffalo for treatment. Another property is being developed by W. A. Hungerford, in Hungerford township, four miles from Tweed.



Cook Property

The Cook Land Co., Limited, of Toronto, own a valuable property in the Deloro mispickel belt consisting of the following lots in Marmora township: part 2 east-half of 6 in 8th con.; 7, 8, and west-half 9 in 9th con.; and west-half of 10, 11, and 12 in 10th con., in all 1,004½ acres. On the part of lot 6, which comprises four-and-an-eighth acres is the old mill property. On the 500 acres in the 9th con., there are good indications of gold and mispickel, as the vein runs through the lots. On lot 7 is the old Dean and Williams Mine. This mine was worked many years ago. An average of \$15 a ton was taken out for a time, but the process was changed and mining was not successful any more than the old Gatling and Canada Consolidated near by. There is every evidence of large quantities of ore on this part of the property.

The 500 acres in the 10th con. have not been explored, but, beyond doubt, are of great value as veins of mispickel are visible. There are large deposits of hematite iron ore on these lots, some 200 tons of which were taken off in 1898. On lots 7 and 8 in 9th con. is a large peat bed making these lots valuable for fuel. The vein on lot 7, in 9th con., is no doubt a continuation of the vein on the property of the Canadian Gold-fields, for they run north and south.

The owners will sell out to reliable mining concern.

Address, Cook Land Co., Limited, Box 2508, Toronto.

Maloney Property.

Consists of north-half of lot 18, con. 1, south-half lot 18, con. 2, west-half lot 17, con. 1, lot 20, con. 3, all in Marmora township. These properties are 120 rods from the Belmont Gold Mine. One lead on lot 17 opened and shows good indications; five pits from twelve to fifteen feet on north-half lot 18, con. 1, assays from \$9 to \$63 a ton. One pit is mispickel, running 30 per cent. arsenic. The south-half lot 18, con. 1, contains a seventy-five foot lead of magnetic iron ore, three-quarters miles long, openings 30, 30, and 16 feet, 64 per cent. iron. One pit is hematite, 57 per cent. iron. The Marmora Railway passes through the property. Abundance of timber and water on the property. D. P. & Hugh Maloney, Marmora.



Parker Prospects.

East-half lot 15, con. 10, Marmora township, gold property, developed by test pits, shows good vein and is a promising prospect. West-half lot 17, con. 1, Madoc township, gold test pits, promising prospect. James Parker, owner, Marmora.



Carscallen Prospects

Lot 31, con. 2, Belmont, near Belmont Gold Mine, prospected. Lot 28, con. 1, Belmont. East-half lot 25, con. 2, and east-half lots 23 and 24, con. 6, Belmont, gold has been found. A. W. Carscallen, M.P., owner, Marmora.



Moon Prospects.

Comprises 2,582 acres in mineral belt of Elzevir and Madoc townships. It contains a fine copper proposition, assaying \$89.12 in copper and \$4 in gold to the ton. There are also gold and silver on other portions of the property. Albert Moon, Madoc.



Moon and Church Property

Consists of 500 acres in Elzevir. Gold proposition with traces of silver. Government assay, \$172.14. Prospecting shafts have been sunk. These are very promising properties. Albert Moon and J. B. Church, Madoc.

The Canada Company

Head office : No. 1, East India Avenue, Leadenhall street, London, England.

Canadian office : Imperial Bank Building, Wellington Street East, Toronto, Ontario.

Commissioners : Hon. G. W. Allan, Senator ; Alfred Willson, Esq.

The following is a partial list of their lots in the mining district of Eastern Ontario :

Marmora.—(1.) East $\frac{1}{2}$ 5, 11, 19, 21, 28. (2.) East $\frac{1}{2}$ 3, 16, 24, 30. (3.) 19, 21, 28. (4.) East $\frac{1}{2}$ 16, 24, 30. (5.) 19, 21, 28. (6.) 3, 24, 30. (7.) 5, west $\frac{1}{2}$ 11, 19, 21, 28. (8.) South $\frac{1}{2}$ 3, 16, 24, 30. (9.) 5, 11, 19, east $\frac{1}{2}$ 21, 28. (10.) 3, 16, 24, 30. (11.) 5, 11, 13, 19, 21, 28.

Belmont.—(1.) 3, 16, 30. (2.) 5, east $\frac{1}{2}$ 11, 19. (3.) 3, 30. (4.) 5, 11, 19, 21, 28. (5.) 3, 16, 24, 30. (6.) West $\frac{1}{2}$ 5, 11, 21, 28. (7.) 3, 16, 30. (8.) 11, 19, 21, 28. (9.) West $\frac{1}{2}$ 3, west $\frac{1}{2}$ 16, 24, 30. (10.) 11, 19, 21, 28. (11.) 16, 24. (12.) 11, 19, 21.

Elzevir.—(1.) West $\frac{1}{2}$ 5, 21. (2.) West $\frac{1}{2}$ 3, west $\frac{1}{2}$ 9. (3.) 5, 11, 21. (4.) 9, east $\frac{1}{2}$ 16. (5.) North $\frac{1}{2}$ 5, 11. (6.) 3, 9. (8.) 3. (9.) 5.

Loughboro.—(6.) South $\frac{1}{2}$ 24. (7.) East $\frac{1}{2}$ 11, 21, 23. (8.) West $\frac{1}{2}$ 5. (9.) 4, 11, 21, 23. (10.) 5, 15, 24. (11.) 4, 11, 21, 23. (12.) North part 5, 15, 24. (13.) 4, 11, 21, 23. (14.) 5, 15.

Madoc.—(1.) 5, north $\frac{1}{2}$ 11, 28. (2.) 3, 9, 16, 24, 30. (3.) West $\frac{1}{2}$ 4, 5, west $\frac{1}{2}$ 11, west $\frac{1}{2}$ 21, 28. (4.) West $\frac{1}{2}$ 3, 9, west $\frac{1}{2}$ 16, 24, 30. (5.) East $\frac{1}{2}$ 5, 11. (6.) 9, 16, east $\frac{1}{2}$ 24, 30. (7.) East $\frac{1}{2}$ 21, 28. (8.) East $\frac{1}{2}$ 16, 24, 30. (9.) West $\frac{1}{2}$ 28. (10.) 3, 9, 16. (11.) 5, 11, 21, 28.

The company will issue licenses to prospect or to mine on royalty, on any of their lands and reservations, covering nearly a quarter of a million of acres in Eastern Ontario, including the above lists, and principally within the belt containing iron, phosphate of lime, gold, galena, plumbago, mica, marble, and other minerals.

For lists of lands and terms apply to the commissioners of the company, Toronto, or to their Mining Inspector, Andrew Bell, C.E., D.L.S. etc., Almonte, Ontario.

Henry Prospect.

Gold prospect, lot 26, con. 2. Marmora, 200 acres, three miles north of Belmont Gold Mine. Good indications on surface. Fifteen acres of timber. James Henry, Cordova.



The Pearce Company, Limited.

This company was incorporated in 1893 under a special Act of the Ontario Legislature, with powers to manufacture and deal in flour, woolen goods, lumber, and in addition the working and development of mines, reduction of ores and general merchants.

They control the entire water power and privileges at Marmora village, where they operate saw, shingle and lath mills, sash and door factory, woolen and flour mills. The building material for the large mines in the Marmora district, was supplied by this company. In addition to their Marmora property, the company own some 25,000 acres of timber and mining lands in the counties of Hastings and Peterboro, including the Blairton Iron Mines in Belmont township, more fully described elsewhere. They also own many promising gold properties in different parts of Marmora and Lake, in Hastings, and Belmont township, in Peterboro. Among these is the property at Deloro operated by the Ohio Gold and Arsenic Co., described elsewhere and the very promising gold prospect on lot 18, con. 1, in Belmont, adjoining the Cordova and Ledyard mines. A small amount of prospecting has been done on the property, which probably would be a very valuable mine when developed.

Responsible mining concerns wishing to secure desirable properties, would do well to communicate with the company. They are one of the wealthiest and most progressive concerns in Hastings county. The greater portion of their 25,000 acres is situated in the richest mineral belt in Eastern Ontario and there can be no doubt that these properties now awaiting capital to properly develop them into the most valuable mines in the district.

F. S. Pearce, Marmora, is manager.



FRONT STREET, BELLEVILLE

Belleville

Belleville city is situated on the Bay of Quinte, an arm of Lake Ontario, at the southern extremity of Hastings county, of which it is the capital. It has an interesting history as being the centre of trade for a large agricultural, lumbering and mining district. The Moira river, which passes through the city, drains the townships of Marmora, Madoc, Rawdon, Huntingdon, Thurlow, Hungerford and Tyendinaga, and furnishes abundant water power for mills and manufacturing.

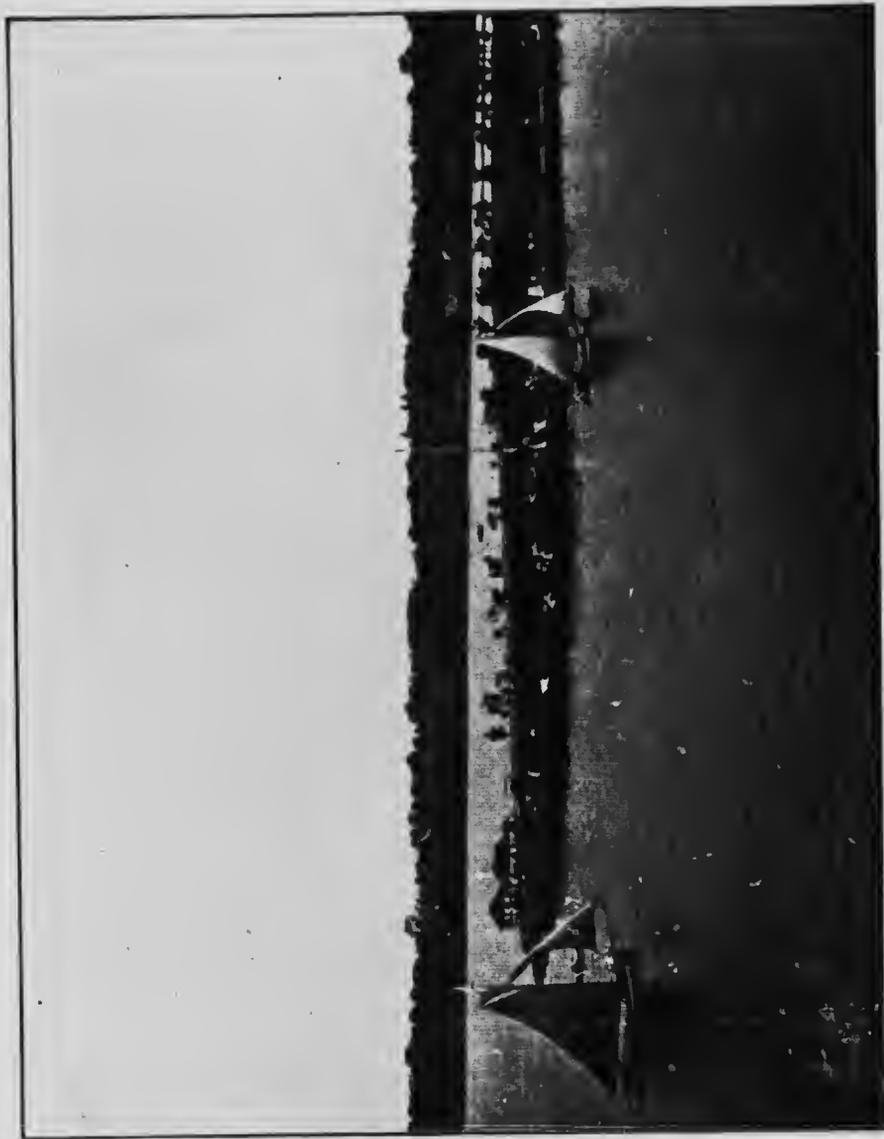
Belleville is one of the smaller cities of Ontario, containing a population of about 10,000. It is noted for the charm of its situation on the Bay of Quinte, and for its handsome residences, situated on streets lined with beautiful avenues of trees and surrounded by attractive lawns and gardens. It is pure and clean, as well as beautiful, and has the lowest death rate recorded in the Province.

Belleville is the centre and point of entrance for the ever growing mining industries of Eastern Ontario. It is 220 miles west of Montreal, and 113 miles east of Toronto, on the main line of the Grand Trunk Railway. A branch of this road runs north to Madoc, crossing the C.P.R. at Ivanhoe. Another branch runs to Peterboro, crossing the C.O.R. at Anson, thus forming direct communication with Marmora mining district. There is daily steamboat communication with Rochester, Thousand Islands, and Kingston. Steamers of the Richelieu and Ontario Navigation Co. call regularly going west and east. An additional weekly steamer to Montreal and Rochester, boats to Kingston twice daily and innumerable excursions during the season to favorite resorts on the Bay.

Belleville, although a port, is situated in the centre of one of the richest agricultural districts in Canada, being connected by a steel bridge with the rich county of Prince Edward to the south, making it practically the county and market town of two counties. There are admirable roads radiating everywhere to the outlying districts.

The Government have built in the city a handsome block for post office, customs office, and revenue offices. Being the county seat, there are the county buildings—hall, court house, jail, and registry office—where all the titles to lands and mines of the county are to be registered or searched.

Manufactories: Large distillery at Corbyville, near by,



VICTORIA ISLAND PARK, BELLEVILLE

owned by Henry Corby, a prominent citizen and ex-M.P.; Mac Machine Co., manufacturers of mining machinery, drills, etc.; Abbott-Mitchell iron and steel roller mills; basket and box factory; foundry and machine shops; furniture factories; large evaporating and canning factories; flour mills; woolen mills; elevators; planing mills; carriage works, etc. The city is well situated for a manufacturing centre, it having secured electrical power at 10 per cent. lower rates than are quoted elsewhere.

The city is beautifully situated and substantially built. It can boast of a large number of handsome churches, high school, Albert College (Methodist), Institution for deaf and dumb, central and public schools, hospital and home for friendless, public library, Belleville Business College, Ontario Business College, four chartered banks, three daily papers, opera house, electric street cars, good hotels, etc.

From its beautiful surroundings it has become very popular as a summer resort. The Bay of Quinte is a paradise for the angler, the yachtsman and oarsman, while the district to the north is a veritable hunters' elysium.

The Provincial Assay office, which is located in Belleville, is mentioned elsewhere.

Addresses: Mayor, R. J. Graham; City Clerk, D. B. Robertson; County Clerk, W. R. Aylsworth; Registrar, H. W. Day; County Treasurer, Thomas Willis; U.S. Consul, Col. Hendricks.



HOTEL QUINTE, BELLEVILLE.

Hotel Belleville has been fortunate enough to have a
Quinte. number of public-spirited citizens, and Hotel
Quinte, an illustration of which is here given, is
the outcome of their enterprise. A number of
these gentlemen formed a company and erected Hotel Quinte
in 1894, at a cost of over \$100,000. Being one of the finest
hotels in Ontario, and the best between Montreal and Toronto,
it naturally delights every visitor to the city. In its convenient
location, architectural design, luxury of appointment, home-
like comfort or refinement, it cannot be excelled.

Mr. J. Jenkins is manager.



Marmora Village

Incorporated village, 1,000 population, thirty-two miles north-west of Belleville, 110 miles east of Toronto, five miles from main line of C.P.R. at Central Ontario Junction, bus to all trains; two-and-a-half miles west of Central Ontario Railway at Marmora station, bus and mail connection. Marmora Railway runs through Marmora from C.O.R. to Belmont Gold Mine, operated at present only for freight.

Marmora is a prosperous village, it being a centre of trade for Canadian Goldfields, Atlas Arsenic, Belmont Gold Mine, Gawley and other mines. G.N.W. and C.P.R. telegraph offices; telephone; post office; bank (A. W. Carscallen, M.P.); three hotels; four churches, Roman Catholic, Methodist, Presbyterian, Anglican; good public school. There is an excellent water power on Crowe River, which runs through the town, owned by the Pearce Co., Limited. They have large saw, planing, flour and woolen mills, lumber yards, etc. Crowe Lake, two miles distant, is a pretty little summer resort, with excellent fishing. The village is connected with the mines, Madoc, Belleville, and other towns by excellent county roads, unsurpassed in the Province of Ontario. There is telephone and bus service with the mines at Deloro and Belmont Gold Mine. Miners' supplies of every kind are kept by the merchants. The village also has a large number of resident mining men and mechanics of every kind. The surrounding district is agricultural and lumbering as well as mining.

The Marmora Herald, publishers of this booklet, is a weekly paper, paying special attention to mining in Eastern Ontario.

LOOKING DOWN MAIN STREET, MARMORA



CROWE RIVER AND STREET, MARMORA

Provincial Assay Office

A Provincial Assay office was started by the Ontario Government in 1898 to see what effect it might have in developing mineral lands. An aid to prospectors it shows the following laboratory record :

Laboratory Record.— Assays and Analytical determinations, 1898 (six months), 406 ; 1899, 1651 ; 1900, 2215. Identifications and qualitative examinations, 1898, (six months), 45 ; 1899, 304 ; 1900, 187.

This office is located in Belleville, as being the county town, seat of the registry office, and having gas and water facilities. J. Walter Wells, B.Sc., is the assayer in charge.

PRESENT FUNCTIONS OF THE OFFICE.

1. Doing general laboratory assay and analytical determinations for the Bureau of Mines in connection with surveys, reports of the Government geologist and other reports of commercial interest.

2. Making reports on the metallic iron contents of average samples of iron ore taken at the different smelters from shipments taken from Ontario mines, for the purpose of checking claims on the Iron Mining Fund.

3. Acting as an intelligent branch of the Bureau of Mines reporting developments in Eastern Ontario, also assisting in collection of samples for Government exhibits such as those installed at the Glasgow Industrial Exposition and at the Pan-American Exhibition at Buffalo, N. Y.

4. Issuing laboratory reports at actual cost to the public on samples received for examination such as identification or probable commercial value, qualitative examinations, assays and analytical determinations.

Fees must be paid in advance and each report is the private property of the party ordering the examination made on the samples, the pulp of which is held by the office for future reference by the sender. The rules of the office do not allow the publication of any report without permission of the client for whom it was made.

5. Answering inquiries from owners of mineral lands as to uses or market values, or from dealers or manufacturers seeking raw material.

6. Distributing samples of economic minerals to bona-fide prospectors who may be in doubt as to character of certain ores.

Kingston School of Mining.

The Kingston School of Mining is affiliated with Queen's University, Kingston. Its objects are thorough scientific education, both theoretical and practical, for professions of mining engineer, assayer, consulting geologist, and metallurgist; and instruction to prospectors, mine foremen and owners.

The faculty consists of five professors, five lecturers, five demonstrators and the professors of Queen's University in general branches. The school has done excellent work in the past, its graduates having no difficulty to secure good situations. A big advance will be made this year on account of largely increased grants from the Ontario Legislature. Address all communications to Wm. L. Goodwin, B.Sc., Director School of Mining, Kingston, Ontario.



Mining Machinery

The Eastern Ontario Mining District is fortunate in having the very best of all kinds of mining machinery manufactured close at hand. The William Hamilton Manufacturing Co., located in the town of Peterboro in Peterboro County, manufacture stamp mills, crushing, sizing and concentrating machinery of every description, hoisting engines, pumps, water wheels, jigs, Wilfley tables, cyanide tanks, commin mill machinery, etc., etc. This company supplied all the machinery for the Cordova Exploration Co., The Atlas Arsenic Co., The Sophia Mine, and a large part of the machinery for the Canadian Goldfields. A branch office is located in Vancouver, B.C.



Special Information.

J. F. Willis, Barrister, Solicitor and Notary Public. Main office, Belleville, Ontario. Branch office, Marmora, Ontario. Solicitor for Canadian Goldfields, Limited; Carscallen's Bank; Townships of Marmora and Lake, etc., etc. References, Canadian Bank of Commerce, Belleville; A. W. Carscallen, M.P., Marmora; P. Kirkegaard, Superintendent Canadian Goldfields, Limited, Deloro, Ontario. Special attention given to Mining Law and Conveyancing. Long distance telephone at Belleville office.

W. H. Smith, Mining Engineer and Metallurgist. Office, Madoc, Ontario.

General Features and other Industries

Hastings County is the centre of the Eastern Ontario mining district and most of the mines are located there. The mineral belt, however, extends west into Peterboro County and east across Addington into Frontenac County. The southern part of these counties border on Lake Ontario and are choice agricultural districts unsurpassed in the province. The northern and mineral portions are rough and rocky, being in the Laurentian range of hills. There are bits of choice farming lands here also between the hills, and farming, especially grazing, is carried on successfully. The country was at one time heavily timbered, but the larger portion of the best pine has been removed, but hardwoods are abundant, making fuel cheap.

The country is full of beautiful lakes and streams with frequent waterfalls, the latter supplying cheap means of power. The district is excellent for hunting deer, other small game and fishing.

The Rathburn Co. own large limits in Hastings and are one of the most extensive and enterprising concerns of the province. The town of Deseronto has been built up by their many mills. At Deseronto they have also a charcoal iron smelter with forty-five tons daily output. The company own the Bay of Quinte Railway from Deseronto to Tweed, along which are large Portland cement works at Napanee Mills and Marlbank. There is another large cement works at Lakefield in Peterboro County. The Gilmour Co. is another large lumber concern with mills at Trenton.

Hastings has the finest system of county roads in the Province of Ontario. They extend 400 miles with 370 bridges, some of which are 150 to 300 feet long. These roads have been macadamized and improved for fifty years. The Provincial Legislature, at its last session, voted \$1,000,000 towards improvements of roads, and Hastings and two other counties were the only ones eligible for a portion of the grant. Mr. J. W. Pearce, of Marmora, is Warden of the county.

With its splendid roads, convenient railways at every point, abundance of timber and labor at moderate prices, it is doubtful if any other mining district is more favorably situated for economic production than the Eastern Ontario District.

