

# MARITIME MINING RECORD AND COAL AND METAL TRADES JOURNAL

Dr. R. Bell  
Geol. survey dept.

*- Special : Springhill : Edition. -*

New Series Vol. 7 No. 12

December 28th. 1904

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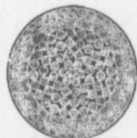
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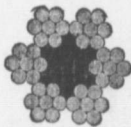
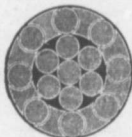
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65 Mixed from Truro	8.50
66 Mixed from Mulgrave	13.10
97 Mixed from Pictou	10.45
19 Express from Halifax and St. John	11.00
130 Mixed from Pictou	14.35
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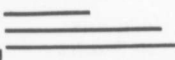
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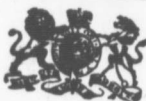
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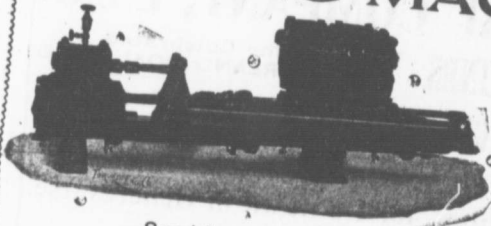
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\* STEAM PUMP, \*

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Orders from Wholesale and Retail Merchants requested.

The...  
**MARITIME MINING RECORD**

Vol. 7, No. 12. Stellarton, N. S., DEC. 28th, 1904

New Series

## Springhill: = = And Its Collieries.

**T**HE RECORD has two photographs of Springhill. One, purporting to be a 'birds eye view' contains so much that, even to one familiar with the place, no single part is distinguishable; the other one has so circumscribed a perspective that it fails to give the slightest idea of the proportions of the place. The writer at the time of his visit had not an opportunity to take a snap from the bank of the railway, near No. 2 slope, which offers the finest position for getting a fair and a full view of the thriving mining town. Next to Glace Bay, Springhill is the largest mining town in the province. Its present population is between 6250, and 6500. The main portion of the town is built on a hill, said to be the second highest point in Nova Scotia. At the present time it is enjoying a marked degree of prosperity. It is estimated that within the past two years the population has increased close on a thousand.

In 1903 25 double and 6 single houses were built by the Coal Co., while this year it added to the number 5 double and 2 single houses, besides a large boarding house or hotel, fitted with all the modern improvements, and having in the basement a disrobing and dressing room, fitted with a row of well appointed wash basins. In no room will there be more than two persons. While in some rooms there are double beds, in others there are two single cots. There are 19 bed rooms, ten of which have 2 single beds, and nine with a double bed in each, equal to sleeping accommodation for thirty eight persons. The offices, reading room, library and reception room are on the first floor. The house will be a great convenience to unmarried workmen and is under the charge of an experienced hotel manager.

Mr. Daniel Rogers, an enterprising citizen, has built about thirty houses in the last two years and has sold most of them to working men on the instalment plan. It is claimed that there has been about 140 new houses built within the last two years, a majority of them of a superior class, costing from \$700 to \$2,000. With the exception of the Post Office, the first brick building was erected the present season, by Mr. Moses Jones at a cost of about \$10,000. An addition was made to the West end school building, which contains two class rooms; this, with the furnishings, will cost about \$3,000. Though building operations during the past two or three years have been very active, there appears to be no diminution in the demand for dwelling houses.

The assessed valuation of property taken in 1903

amounted to about \$670,000 at a valuation of less than two thirds. In the case of personal property the assessment is not over one half of the cash value. The assessment roll now being prepared will probably be considerable over \$700,000. A fair valuation would probably be \$1,000,000. In assessing the fact is kept in view that the general assessment, for the whole county, is put at an exceedingly low rate.

There are at the present time 1255 children enrolled in the public schools. The average daily attendance for the present term is 800. Twenty teachers are employed, and the rooms are very much overcrowded. The School Commissioners have in view the building of a new school house, to contain eight or ten class rooms, and a manual training department. The latter will be detached from the main buildings, in all probability.

Water works have been installed this year at a cost of \$120,000. A gravitation system was adopted, the source of supply being a brook fed by springs, on the Cobequid Mountain, distant seven miles from the town. The water will gravitate to the town and with very heavy pressure. The system will give splendid fire protection to the highest parts of the town. In the lower parts of the town there will be a tremendous pressure. The source of supply is four or five miles from any dwellings or cultivated land and free from any contamination.

The incorporated limits of the town extend but a short distance southerly to what is called the 'Herrett Smith line,' exactly half a mile from the Post Office. A new village is springing up on the Herrett farm just south of the town line. About 20 houses have been erected there. One of the reasons for people settling there may be to escape the town taxes, but as a matter of fact the taxes are higher outside the town limits when all is summed up. There are, for instance, the county tax, school tax, poor tax, and road tax, and then for the want of roads the residents are unable to send their children to the school in the section to which they belong, and consequently the children are sent to the town schools. This matter is to be looked into by the School Commissioners, at an early day. There is no agitation at present to extend the town limits, but when attention is called to it there will be a disposition on the part of the town authorities to provide school privileges only for the people of the town.

Springhill has natural drainage in every direction and sewerage will not be a serious matter. About

\$5,000 has already been expended in the laying down of under ground sewers. The main sewer, on Main street, is 2 ft. in diameter and also on part of Drummond street. About 2,000 feet of sewer pipe are being water tower and connect with the sewer on Main and the main part of the town will be constantly flushed with water from water tower on Bents hill. Real estate has advanced about 200% within the last two or three years. There is plenty room however for the town to expand, and real estate, even at the present figure, does not adequately show what a fine mining town Springhill is destined to be. The town has an excellent theatre and concert room and a well appointed race track. It has many well stocked stores. The one industry outside the collieries is the lately established wood working factory which is kept busy supplying its products at good profits. Of course it goes without saying that the town has churches, connected with the several leading denominations, whose pulpits are filled by faithful pastors. It should be stated that hundreds of buildings are owned by workmen, and hundreds of buildings are owned by workmen, and hundreds of workmen are depositors in the savings banks.

## Cumberland Railway and Coal Company.



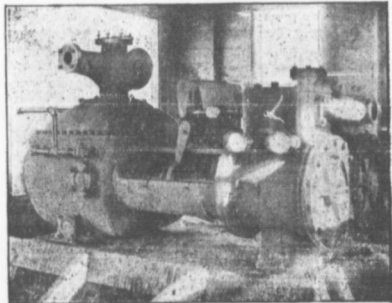
—NO. 2 SLOPE HOISTING ENGINE—

WHILE the RECORD has not failed, in many years at intervals shorter or longer, to keep its readers informed as to the trend of events at Springhill, and the many improvements continuously being effected at the collieries, we have never really attempted to give a full and connected account of all that has been planned and accomplished. The improvements and additions have been so numerous, so varied, so extensive and experience, but the casual visitor and observer have been forced to exclaim, "These are modern collieries of the province." A recent visit to the collieries has prompted the writer to attempt to enumerate, more fully than has yet been done in the RECORD, some of the changes effected so that its readers may more fully realize the vastness of the work done under the direction of the present head. The RECORD through its correspondence and again in high terms, to the great executive ability of Mr. J. R. Cowans. The Chief, as he is loyally and affectionately called by his subordinates, has a genius for improvement, and is so great a hustler that some are tempted almost to say he has a mania for work. In all that has been accomplished of late years at Springhill, in all that it, his guiding hand. The RECORD can do no better than to emphasize what has already been said by others, and said often, namely, that the 'chief' is a marvel, and may well serve as a model of efficient, intelligent and energetic management. It may not be at all correct to say, even by way of compliment, merely, that Mr. Cowans was the man born, that is, trained to colliery work, yet it can be said that by diligent, intelligent application, by persistent push, and by a steady determination, he now is master of the situation, and 'directs' really as well as nominally. There is no part of the business, whether as regards roading or mining, with which he is not now thoroughly familiar. And his success is due wholly to the evolving of a system, and to his seeing personally, that it is faithfully carried out. Mr. Cowans has so familiarized himself with every detail of work, that it may be said of him, as is said, on highest authority, of the diligent man he need not fear to stand before kings, be they so called, railway or coal kings, and simply point to his collieries. It may be correctly asserted that at no coal mines in the province has the head manager so great facilities for learning the minutest details as to every day's happenings as at Springhill. A most elaborate system of 'Reports' has been evolved, which places the manager in touch with every nook and corner of the big works. Some thirty different reports are in use. These are submitted to the manager and his staff for inspection and criticism. If anything is not as it should be, then, in red ink, on the face of the report are given short, it may be, and certainly sharp instructions to have the defect, or whatever it may be, remedied or removed. If work goes slow, if there are stoppages, too much stone, too little round coal, in short if any matter or thing on the surface or underground is not just as it should be then the particular report showing the

defect is adorned with the danger signal. If there is one thing prominent at Springhill mines it is discipline, and, may I add, discipline at times that might almost be termed severity, so rigorous is it.

Previous to 1903 a great source of annoyance to the management, and much expense to the company, was the insufficient supply of water for the boilers. At various times, to overcome this annoyance, dams were built, but the supply was either short, or the capacity of the dams too limited, therefore water had to be hauled by train, in tanks, long distances. In the hope that the Town would install a water system, Mr. Cowans was induced to put off, from time to time, the notion of constructing a system of his own. At last patience being exhausted he set about plans for bringing water to the works from Maccan River, distant over a mile from the big dam at the west slope, completed in 1902. At a small overflowing dam on the River is situated the pumping station, which was visited in company with Mr. Hall, superintendent of works, and an old colleague, Mr. Matthews. When the writer filled an office in the P. W. A. Mr. Matthews assisted in organizing Cape Breton. That was in 1881, so it may be gathered 'Bill' is no chicken, though he wears a remarkably youthful appearance. At the dam, which goes by the name of 'Herritt' is a pumping plant, capable of pumping, easily, 600 gallons per minute. From the station there has been laid, for the greater part of the way without trenching, 4000 feet of 8 inch and 6000 feet of six inch pipe. The distance therefore, from the pumping station to the dam, is about two miles. The dam has a capacity of say 6,000,000 gallons of water. The importance and utility of the water system was amply demonstrated the past dry summer. During five months of this year it was necessary to pump water from the River to the dam, and the saving, thereby effected, went a good part of the way in paying the expense of the plant. But above and beyond the expense it saves a great amount of inconvenience, disarrangement and

worry. There is now the assurance of a continuous and plentiful supply of water, in the driest seasons. The Aberdeen slope is connected with the main dam by 6,000 feet of 4 inch pipe. Between the West and the old East slope is the new-

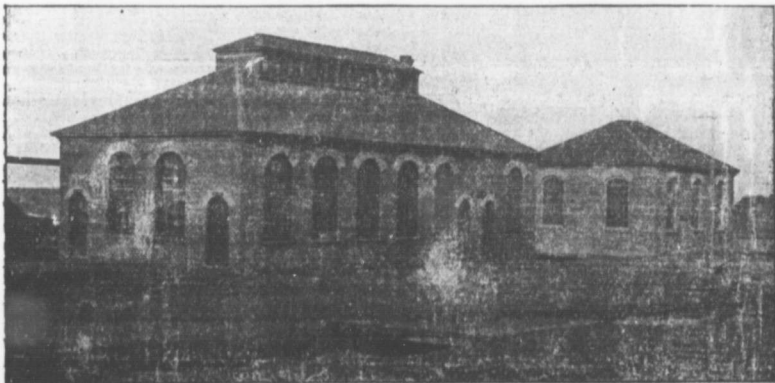


—FIRE ENGINE—

ly installed fire engine. This is called a Northey Underwriters pump, size 16 x 9 x 12 and capable of pumping 750 gallons per minute, with a pressure of 100 lbs, through four independent sets of hose. The streams will go over the highest buildings at the works, and can be set playing at a moments notice. This fire fighting arrangement is a source of great satisfaction to the management, which has had, in the past, sad experience of the ravages that fire can make, not only above but below ground. Some 3,000 feet of 6 inch pipe connect the various points of the work together. There are 12 Hydrants; two Hose Reels; 600 feet of strongest 2½ inch hose, and 1200 feet of 2 inch.

—THE LAMP STATION.—

**T**HE Lamp House is without cavil the best of the kind in Canada, and it is doubtful if there is one equal to it on the continent. It is a brick



—LAMP STATION AND POWER STATION.—

building, and fitted with every device for the speedy cleaning, testing, filling and locking of the lamps. Every gauze and every glass on every lamp is cleaned and tested daily, and each man's lamp is tested in his presence, before being handed to him. The device for cleaning the gauzes is effective, and yet extremely simple. The first operation, when a lamp is to be cleaned, is to pinch off the stamped lead plug, which locks the lamp. If a workman makes an attempt to open the lamp he can only do so by tampering with the plug, and that he may not do for detection is sure. The lamp is then unscrewed instantly by machinery, the gauzes—they are double gauzes—are separated by a slight crack on the table. First one and then the other is fitted on a cap, which, on a day, and a different lamp to-morrow. Though a flock of sheep may appear all the same to a stranger, yet a shepherd, it is said, knows each one of them. And so with the safety lamps. They are all of uniform size, of uniform make, of uniform efficiency, and yet, I am told, you cannot give a miner other than his own lamp without his knowing it. Of course the number is stamped on the lamp, but he needs not that guide. Besides the several lamp cleaners there is a lamp inspector who goes daily over every lamp, after being cleaned and filled, and then before a man receives his lamp it is tested before his eyes, so that it is next to impossible that a faulty lamp can go out. There are no fewer than 1200 safety lamps



—INT. LAMP HOUSE.—

gentle hand pressure, releases compressed air, which blows every particle of dust from the gauze. These and the glass are placed to touch a revolving brush, which eradicates all rust or dust spots. The lamp is next filled with oil by a machine which will only allow the required quantity to go in each lamp. If there is a table spoonful in the lamp, the flow of oil will be a lampful, less the spoonful. If the lamp be half full then only half a lampful of oil will flow. When the oil reaches a certain height in the lamp the flow from the feed is automatically closed. When a lamp has to be tested, it is placed inside a metal, copper or brass, ring, which has a number of perforations, on the inner rim, of the size of a pin head. On the pressure of a finger the air rushes through the perforations, at some 15lbs pressure, and plays around the glass of the lamp. If there are any defects the light is affected, by the air pressure; if the lamp is sound the light is not affected. The lamps are not given out promiscuously to the

workmen. A miner does not receive one lamp today, and a different lamp to-morrow. Though a flock of sheep may appear all the same to a stranger, yet a shepherd, it is said, knows each one of them. And so with the safety lamps. They are all of uniform size, of uniform make, of uniform efficiency, and yet, I am told, you cannot give a miner other than his own lamp without his knowing it. Of course the number is stamped on the lamp, but he needs not that guide. Besides the several lamp cleaners there is a lamp inspector who goes daily over every lamp, after being cleaned and filled, and then before a man receives his lamp it is tested before his eyes, so that it is next to impossible that a faulty lamp can go out. There are no fewer than 1200 safety lamps

—ELECTRIC LIGHT STATION.—

**T**HE building in which is the Electric lighting plant is, like the Lamp House, built of brick stone. Internally the building is in excellent order, a marked feature being its cleanliness. The engines, which are in duplicate, run noiselessly. There are two generators each of a capacity of 1000 lights. They do not run simultaneously but alternately, so that each will have an equal amount of usage. The plant supplies light for the works and for the offices etc. There are lights on the brows of the bank heads, and at a distance

ack, and several at various points on the surface. No electric light is, however, used in the slope or in the mine. At one time it was thought to light the landings electrically, but after much deliberation the management concluded not to do so, as it was considered best to take no risks however small. The point can be reconsidered as soon as it can be established that there is as little risk of accident, through use of electric lights, as from use of lamps.

—TELEPHONE SYSTEM.—

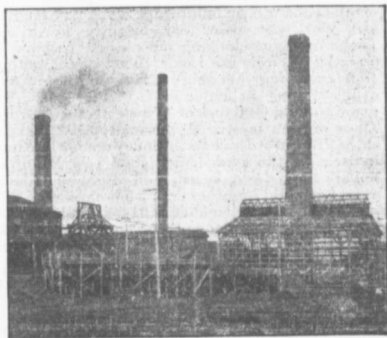
**T**HE Telephone System is as complete as it is possible to make it. The bank heads have communication with the underground workings, with the General offices, with each other, with the houses of the manager, the mine officials, and the heads of the several departments. Any department can communicate with any other department at any hour in the day or night. If the telephone in an official's house is down stairs, where at night the call might not be heard, there is a bell connection in his sleeping room, which intim-



**TELEPHONE CENTRAL AND TEL. OFFICE.** states that he is wanted at the telephone. Though the works may be said to be fairly compact, the company has for its own use no fewer than ninety telephones, by which communication may be had not only with any department, but with any mine or place in the province with which there is telephonic connection. Of course the system can only be efficiently maintained at considerable expense, but the benefits more than counterbalance the cost. Unheard of a few years ago a telephone system of its own is now one of the indispensable requisites of an up to date colliery.

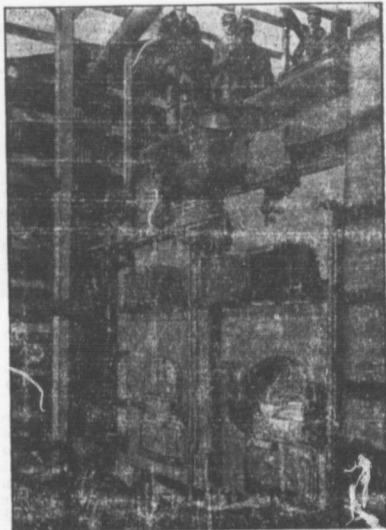
—THE WEST SLOPE.—

**T**HE first ejaculation that may escape the visitor looking at the overground works, as he nears the West slope, is 'big structures and lots of smoke stalks.' Of the latter there are four, one of iron, and three of brick, the most re-sandy built of the latter being a hundred feet high. Another thing that strikes the visitor is the position of the new large two storey boiler shed, which seems to encroach to a considerable extent on, what was formerly deemed the high road to the adjacent districts west. One other thing striking is the situation of the engine house, away back from the other buildings. On enquiring the reason for this the questioner is told that the engine house



—NEW BOILER HOUSE NO. 2—

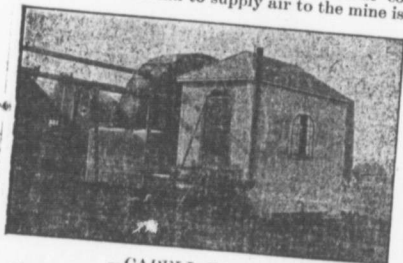
has been removed back four times, in order to give room for bank extensions. When first removed it was thought to be far enough, for all purposes, and so with the second removal. When it came to be necessary to move it for the fourth time, the management determined that this moving must be final, so set it back a hundred feet, or more, beyond what was considered the extreme of possible requirements. A great deal more pride is being taken in engine houses now than formerly. The interior is not now roughly finished, with beams and posts exposed, and coated with whitewash. Instead the floor is of polished



NEW MUMFORD BOILERS.

hardwood, and, as in No. 2 and No. 3, the walls of embossed metal in design. The foundations are of solid concrete, an immovable seat. The engines are spotlessly clean, and brightly burnished. They are mighty looking machines: technically described as follows: 1 pair 30 x 48 direct acting, link reversing hoisting engines with grooved drums 7 feet in diameter, 5 ft. face each, the drum to hold 6000 feet of 1 1/2 inch steel wire rope shire, 2 Mumford and six ordinary double flue now in use. In the new boiler shed two Mumford boilers have been placed, and there has foundation been laid for other two, when needed. The size of the new boiler shed is 54 feet square. The horse power combined of the boilers is say 1200 or over. They are fired with culm, which answers all purposes admirably.

In the main building fixed screens with iron bars have been dispensed with, and instead there are shaker screens, made to 3 inch netting size. In a building apart are the old rotary screens for special makes of small coal. The coal of course goes over picking tables at which there is a small army of men employed cleaning it, as the mansending really clean coal to the market. The interior of No. 2 bank is of horse shoe shape, the boxes performing half a circle before returning empty to the brow. From the brow to the sheets or tipples the distance is nearly 320 feet, and all this room is necessary for the quick handling of coal. This bank head has the ordinary tippie, the revolving self acting tippie not having as yet come its way. Twelve boxes containing, all told, about 9 long tons of coal are hoisted each trip. Bye and bye, as at No. 3, it may be necessary to increase the load. If the pit can supply the coal to the bank has facilities, and an ample force of men, to hoist 2000 boxes, or say 1500 tons of coal in a shift. The fan to supply air to the mine is a

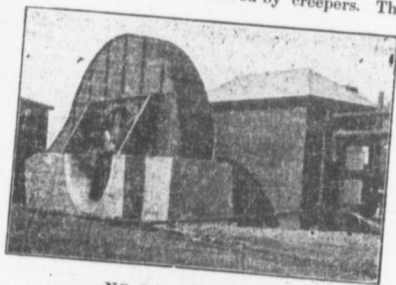


—CAPELL FAN.—

Capell double acting blow down, with a capacity of 150,000 feet of air per minute. Its size is 15 ft. diameter by 5 ft. wide. Standing on the bank head and looking down at the yard one is pleased to notice that the former ill looking, ill smelling, stone bank has almost disappeared. When burned it was found to make excellent road material and has been carted away, and utilized on the streets, only a few big boulders remaining to be removed. If Springhill has better streets than most of the mining towns, that old nuisance of a stone bank must receive part of the credit. The yards are in good condition and order is now in evidence where formerly things were in a

chaotic state. On leaving the West to step over to the North slope, I tried in my mind to make a comparison between the works surrounding, and the old fashioned bank, which did duty for many a day, where these buildings now stand. These were no shaking screens nor picking tables these could be moved without a big hawser around a trestle leg, to keep them from running down the grade.

A gentleman who had visited many collieries in many parts of the American continent, after an inspection of the surface works and bankheads at Springhill, declared that he had seen, perhaps, more elaborate bankheads, but never any in their conception and design, and in their facility for efficient handling of the product of the mine, to beat those of Springhill. I have seen a few bankheads also, and am prepared to endorse the remark, provided it is intended to apply to bankheads in connection with coal seams at a high angle, and where it is impossible, or thought to be impossible, on that account, use endless haulage. But without any proviso it may be safely said that no bankhead outside the Ohio Valley is fitted up with more modern colliery appliances. Here are Sturtevant blowers for forced draft; under-feed stokers; heaters that feed water to the boilers at 200 degrees Fahrenheit; picking tables; gravity roads; self acting here are drawn chutes, etc. above ground. And of any mine in Nova Scotia, not to go further, The No. 3 Hoisting engines are similar in all respects to those of No. 2 except that the drums are six inches less in diameter. There are 12 boilers to supply steam, ten of which are in use, and two off, for cleaning, or in reserve. The bank head has not a horse shoe bend as has No. 2. The full on a gravity road which brings them back to the tippie. A man is in constant attendance at the tippie in order that the box may not empty itself too quickly and thereby interfere with proper cleaning of the coal. The length of this bankhead is 300 feet, and 15 boxes—equal to a load of eleven long tons—are taken up on each rake. The empty boxes are moved by creepers. The



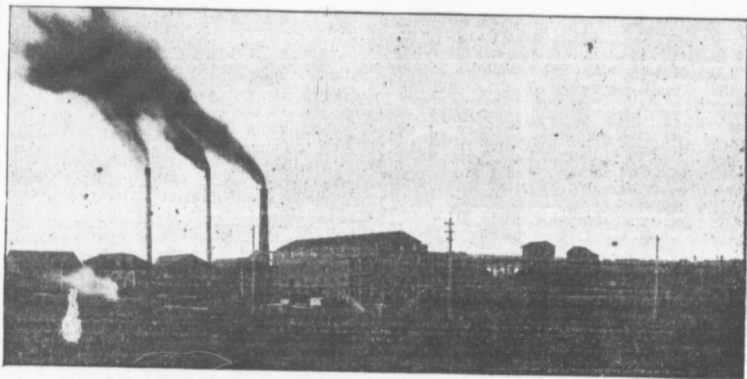
—NO. 3 CAPELE FAN.—

full boxes have to be assisted a little before reaching the gravity roads, but this may be obviated through time. There are four picking tables at the slope. A great improvement has of late been



effected in the handling of stone coming from the pit. Formerly it was banked, now there is a chute over which all stone is dumped into large stone cars, and taken away from the mine and utilized in filling hollows etc. At present the oil of the boxes is a somewhat expensive job, five

90 revolutions per minute. Should anything go wrong with the fan at No. 2 this fan can supply all the ventilation needed there. The hoisting engine draws no coal to the surface, but from the 3600 feet lift to the 2400 feet, where it is taken out by tail rope to No 2 slope bottom.



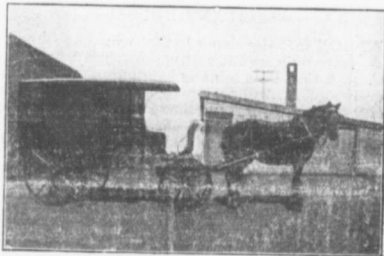
—NO. 3 SURFACE BUILDINGS.—

boys being required for the purpose. Arrangements have been made for fitting the tipples with self oilers, and so remove this factor of cost. Though this slope is longer than No. 2 slope, an equal quantity of coal can be hoisted owing to the greater load hoisted. As stated the boilers are fitted with underfeed stokers. There are also two Sturtevant blowers conveying air for draught at a pressure of 33 lbs per square ft. Fine coal is used at the fire doors. The coal is taken from the screens to the fire doors by wire cable, and is shovelled by hand into the stoker hoppers. I think the boiler arrangements tend to economy; for the ten boilers six men only, all told, are required, three firemen, two ash fillers, and one water tender. A great many box cars are loaded daily at the colliery. To load these by hand involves, I should judge, an extra cost of two to four cents per ton. That is a big item. The management is considering the advisability of installing a box loader. The only difficulties in the way are arrangement of the bank head, and the necessary shifting of the track. Besides the main hoisting engine there is a smaller one for the handling of timber, etc.

The Aberdeen, or No. 5, Slope is about a mile distant from No. 2. Here, as yet, there is no bank head, the works overground consisting of an engine and boiler house, and a fan house, all of them with the necessary machinery. The Fan is the notable feature. Like all the other fans at Springhill it is a Capell, its capacity being 150,000 feet per minute. It is 19ft dia., by 4ft 6 inch wide. Its full title is "Double inlet reversible," and can be changed from an exhaust to a blow down by the simple shutting of one door and the opening of another. It is driven by a Robb-Armstrong of 200 H. P., 22 inch cylinder. It is not necessary to run the fan, at present, at a greater speed than

THE AMBULANCE.

CONNECTED by phone with all parts of the works is the Ambulance house. The Ambulance as will be seen from cut is of modern design, and as the stables adjoin, and a horse always in read-



—JACK AND AMBULANCE—

ness, no time is lost in responding to calls. The ambulance is of course well equipped with blankets, rests etc, and is a great improvement over the old way of handling the injured.

—MACHINE SHOP.—

FROM the outside the machine shop has not a lofty or elegant appearance but internally it is crowded with useful and modern machinery and tools, whereby the company is enabled to effect all repairs to its stationary engines, locomotives and cars.

## —TIMBER YARD.—

At a majority of collieries in Nova Scotia vast quantities of props, booms, and lumber generally are used in the pit for support of the roof after the coal has been excavated, that is where the bord and pillar system is in vogue; and even where the long wall system prevails much timber is used for "packs." Springhill mines is no exception in this respect. At some collieries not much attention is paid to the manner in which the timber is yarded. Props of varying size may be kept apart, but seldom props of varying thickness, and even when they are kept apart it is hard to get them immediately when wanted as the approaches may be blocked. The timber yard here is a thing of order. Any of the great piles is easily accessible as roads have been laid after a regular system and the timber systematically piled. For the orderliness of the yard much credit is due to Mr. David Stewart, Mr. Cowans' assistant, who has envolved order out of former confusion. Regular accounts are also kept of the quantity of timber removed from or added to the stock. The props vary in size from four to ten or eleven feet. Until lately many of the smaller props were in demand but with the thickening of the coal longer props are now in request. Probably there are now more of the 7 foot long props used than of any others. Some idea of what an important part timber plays in the cost of getting coal may be gathered when it is stated of the 7 foot props alone, some 100,000 pieces may be used in the run of a year. And besides props and ordinary booms very much timber which might be taken for saw logs finds its way to the mine. Besides economy of time in handling, the manner of piling tends to the life of the timber.

## —COMPANY HOUSES—

FROM 1875 the time the first workmens houses were built up till within a few years back the C. R. & Coal Coy. left the building of houses severely alone. A few years ago, owing to the scarcity of houses, and the increase in the working force, the company was compelled to change its policy in this respect, and go extensively into



OLD ROW, BUILT 1873.

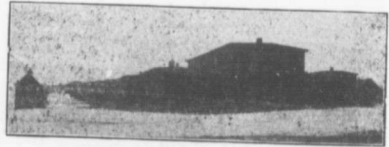
Building operations. Since the writer last visited Springhill, two years ago, a large number of houses, built contained and tenement, have been erected, involving an outlay of well over a \$100,000. And notwithstanding this large addition to its house accommodation the demand for houses is almost as great as ever. This is accounted for by the fact that never so many hands were employed in and around the mine as this year. The October payroll showed a force of over 1600 employees. The

rental received by the company is equal to an investment of \$200,000 at 5%. But though the erection of houses may not be a source of loss to the company the management would far rather



—NEW SINGLE HOUSES.—

it had not be constrained to build, preferring that the money spent on houses could have been ap-



—NEW DOUBLE HOUSES.—

plied to improvements at the mines. The illustrations show the style of the old houses, and of the new single and double ones.

## —THE GENERAL OFFICES.—

THE first office of the Springhill Coal com'y was at the west sloopend was a barn looking battened building. Over a quarter of a century ago, a new unpretentious unornamented building was erected at the east slope and there the offices still are, but not as they used to be. As business grew kitchen like additions were added to the rear of the building, so that now, viewed from the side, it might be taken for a bowling alley. I suppose the chief considers that if the human furnish-



THE CHIEF'S OFFICE.

ings are up to date, the mere walls count for little. Still, appearances count, and new offices should be next in order. The illustration shows the Chief  
(Continued on page 23)

## Maritime Mining Record

The MARITIME MINING RECORD is published the second and fourth Wednesday in each month.

The RECORD is devoted to the Mining—particularly Coal Mining—Industries of the Maritime Provinces.

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R. DRUMMOND, PUBLISHER.

STELLARTON, N. S.

December 28th 1904

### Rubs by Rambler.

It is twenty six years past since Sir. Charles Tupper promised Nova Scotia to give her Ontario as a market for her coal. At that time I said we would never get hold of the Ontario market. 'Never' was too strong a word perhaps to employ and was not meant to embrace more than a quarter of a century. Not since 1878 till very recently has any serious thought been given to Ontario as a market for our coal. Necessity however knows no restraints and now 'a market in Ontario' is the watchword of the coal trade. Without government assistance in some way it will still remain an impossibility for Nova Scotia to secure this most desirable because extensive market. Some plan for deepening the canals must be hit upon by the government, or else subsidies must be given to a fleet of vessels that will adapt themselves to the present accommodation of the canals. The local government can also give assistance in the way of a remission of part of the royalty for two or three years, or until the experimental stage is passed. And then if with government assistance, coal could be carried at a small margin of profit to Ontario, another difficulty would have to be overcome, namely, the opinion held by the people of Ontario that our coals are inferior to those of the United States. That however by the way: there is no use of borrowing trouble. The main point at present is how to get to Ontario. The Sydney Post, which at times—at those times when it can divest itself of politics, they may not be frequently recurring times—has clear ideas about the coal trade has this to say about a market in Ontario.

"It's evident therefore, that there is one great market in Canada that we should have and that there should be a way of getting it, and that is the Ontario market. Geographical conditions seem to be the greatest barrier in the way of our getting this market. Our canals are not deep enough to admit of our coal steamers passing through. This is very serious and formidable difficulty but there should be a way of getting over it, when the importance and magnitude of the interests involved are fully considered. Parliament has already spent much money on our canals with a view to develop trade between the St. Lawrence and the lakes adjacent to the province of Ontario. Those canals are a benefit to the coal trade of the United States but have done no good to the coal trade of Nova Scotia. Our canals should therefore be deepened, but

until this is done there is more that parliament can do; which will afford more immediate relief. It can subsidize a line of steamers adapted to our present canal system for a period of five or more years to engage in this trade between the collieries of Nova Scotia and points in the province of Ontario."

Mr. James Ross, President of the Dominion Coal Co., in reviewing the work done by the Company during the year, says, among other things:—"Two directions in which we are extending our markets are to Mexico and up the St. Lawrence west of Montreal. The large enterprise of the Mexican Light and Power Co., controlled by nearly the same interests as the Coal Co., is helping us in Mexico and the indications are that railways there will provide good markets at fairly profitable prices. West of Montreal we are providing for special steamers to handle coal through the canals and look to getting right through to Toronto and surrounding places where there is a very big market." The Record is glad to learn that there are good prospects of a big trade with the Mexican Railways, and trusts that the company will be able to send coal up the canals, even though none of it may go quite so far as Toronto. It is a pity Mr. Ross did not give a little more information. What return cargoes are the steamers to bring back, and will it be possible to do a profitable trade without return cargoes? If the Dominion Coal Co's can solve the problem of sending coal to Ontario, then it will be doing a notable service to the coal trade of the province, and securing a market that may render it unnecessary to make any heroic attempts to send coal to the United States.

The Sydney Record is quite hopeful of the future of the coal trade, and that without any efforts being made to obtain reciprocity with the United States. Referring to markets it says:—

"The question of adequate markets, as we pointed out recently, does not seem so serious as represented in some quarters. It must be remembered that the home market is constantly on the increase. So even if no new markets could be found, there is room under the present condition of things for a great expansion of the coal trade. The local market alone is one to be reckoned with. The quantity of coal to be required by the steel works as at present constituted will be very large. But the steel plant itself is likely to grow and so furnish a constantly increasing market for our coal mines. The provincial and Quebec markets are in the nature of things bound to absorb larger and larger quantities of coal with each succeeding year, and President Ross is authority for the statement that our coal will soon find an extensive sale in Ontario. But over and above all this there is a new home market just about being opened that Cape Breton cannot be deprived of, and where American coal will find it hard to compete duty or no duty. This will be furnished by the new settlements to be opened in the north by the construction of the Grand Trunk Pacific and other railways. In northern Quebec and Ontario, there is a vast country at no distant date to be occupied by hundreds of thousands of settlers where towns and thriving industries will spring up in the wake of settlement and railway building. Here at least is a market of the near future for the surplus product of our mines. It will, in a sense, be an extension of the St. Lawrence market, and one in which the Cape Breton companies will be able to defy all competitors."

## AROUND THE COLLIERIES.

In Caledonia mine a set of levels is being driven into the submarine area, on the east side of the pit. Mr. Ralph Malcom is engineer at Big Glace Bay Colliery—Dom. No. 6—and is considered a very capable man.

Water for domestic purposes at Caledonia is rather a scarce article, but it is said the town is going to lay pipes at once to convenient points.

The new fan, engine, and house, for the Harbor seam, Dom. No. 2, is completed, so No. 2 is now equipped well with ventilating machinery.

Mr. Bown, the Superintendent of Dom. No. 6, is living in the building used as a colliery office. It was enlarged and made suitable for its new purpose.

A new Capell fan is being erected at Dom. No. 3, which will in the near future bring about a much needed improvement in the ventilating current.

Dom. No. 3 with its new manager and underground manager will do some stunts when the opportunity comes as both are energetic and painstaking officials.

At the Hub mine only narrow work is being driven in the submarine area this winter. By the spring a large territory should be available for rooms, or working places.

A snow plough is being built for the overground haulage road at Dom. No. 3, which it is hoped will be able to keep the road clear of snow so that the pit may be kept working even after a heavy snow fall.

In the general office of the Dominion Coal Co, it is not easy to find where the different officials office are. They seem to delight in flitting, and do so at quarter and half terms as well as yearly.

The deeps in Dom. No. 3 carry the record for distance driven in narrow work per month, which speaks for the vigilance of the officials and miners. It is believed that No. 3 will give some record outputs next summer.

A new undercutting and shearing machine is being tried, in the Reserve mine, by the Rand Drill Co's engineer, Mr. Cotten. It is said to have given excellent results. It is in appearance something like a large rock drill.

Mr. Wm. Wilson has been appointed Underground Manager at the Hub, and will no doubt show his old qualities as a hustler. He is a man who has driven a good deal of narrow work himself, in his time, so he knows what is needed to push it ahead.

At Caledonia Mine—Dom. No. 4,—there is now at work a mechanical box car loader. It has been found to be a great labor saving appliance, and besides does not smash up the coal so badly as when shovelled by hand half the length of the car.

Some time ago one of the tanks in the water shaft at Cledonia, broke away and had to be picked up again although it was under 60 feet of water. A little ingenuity on the part of the staff at the mine made this a comparatively easy feat. Many things are easy when one knows 'just how.'

It is said that a lot of machinery has arrived for the Cochranes Lake Colliery.

A trestle is being built at the new slope Mabou mines to connect with bankhead.

A section in the Harbor seam, Dom. No. 2, is now being driven in the submarine area.

The work of straightening the slope at Mabou mines is progressing very well.

The surface around Dom. No. 2 has lately undergone a thorough cleaning and now presents a much tidier appearance.

The officials of the Dominion Coal Co. and the P. W. A. delegates had another conference last week, which some assert was to be the final one.

This issue contains a somewhat extended 'write up' of the Springhill Collieries, but their extent and importance is sufficient justification for the space occupied.

The new slope at Mabou mines is being timbered with sticks ten inches by 12. This is solid work. The slope is 12 feet wide at bottom and 10 feet at roof.

The work of sinking the slope on the 7 foot seam Mabou mines was started a couple of weeks ago. The sinking is being done by Sullivan machines, and the work they are doing is considered satisfactory.

Narrow work in the Phelan seam, Dom. No. 2, is being pushed vigorously, but this is not the case with the Harbor seam, as being a gas coal it is not in demand this season.

Much was said of a slight accident to the bell of the Sydcey Mines blast furnace. There were fears, it was said that the furnace might freeze. However, that was avoided and the making of pig iron goes merrily on.

After the very handsome references of the 'Suburban' and the 'Free Lance' to the RECORD the editor has an inclination to tip his cap to the side, and manifest a jaunty air. Rather these than tangible Christmas confectionery.

Work is slack at the International. The coal here is a gas coal and there is not much demand in winter. The output of late has been considerably reduced. There are idle days, but as this mine had a fairly good summer's work the men should not feel very badly.

The Phelan seam in Dominion No. 2 requires a much larger amount of narrow work, to get rooms, than any of the other collieries, owing to the largeness of the pillars. It takes, in some instances, 96 feet of heading to gain only one room, on account of the angle as which the heading is being driven.

The new trestle to be built at the Mabou mine will be run between the compressor and the boiler house. This was the only suitable line available without the removal of some buildings. The new slope will be fairly straight with the exception of a short length near the bottom. The trestle to be built to suit the new slope will be seven hundred and twenty feet long. There will be one slight bend in it near to the bankhead, which will not be much inconvenience as the trips will run slow at this point any way.

## AROUND THE COLLIERIES.

Work at the Mabou mines, in the way of development and improvements will be rushed this winter so that everything may be in readiness for spring shipments. The Dredge has been taken away but there are hopes that it may be sent back in the spring.

On a day, lately, an Illinois mine put up in eight hours 2,360 tons, which is believed to be the record for that State. While the output is large it has been surpassed by more than one of the C. B. collieries worked by means of a shaft, and left far behind by the Reserve, worked by a slope.

The Main Slope at Dom. No. 5—Reserve—is finished and the lower section is now used as a lodgement for the water which is being pumped up through a bore hole, recently put down for that purpose. A large pump has been installed and is now pumping the water through this bore hole.

The C. P. R. has built or secured the building of a six mile branch railway at the Port Barwell end of the Conneaut Coal Ferry, and the Coal Trade Journal says that the Co.'y has built it with the intention of getting much of its coal that way. And the C. P. R. was built by Canadian money chiefly.

The Mabou Coal Co. were disappointed in not being able to secure any November schooners to take cargoes of coal to P. E. I. and Halifax, where cargoes could have been disposed of. Engagements could not be entered into so late in the season. This is to be regretted as the company was desirous of getting its coal tested by consumers.

The Albion mines worked a double shift on the 14th—15th inst. in order that the workmen might have an opportunity to cast their ballots on the 15th inst. It was thought by the management that nearly a days coal could be got by a night shift, whereas if the mine had worked on the 15th owing to the likely number of absentees very little coal would have been obtained.

Sinking in the 7 foot seam at Mabou is proceeding fairly well. The sinkers are going right out to sea and the angle keeps about 15 degrees. Owing to the dip and strike changing and swinging round a turn was necessary in the slope. This turn however is a favorable feature as it goes to show that there is coal seaward. About one hundred feet of sinking was accomplished this month up till 20th, but sinking will have to be discontinued for a few days to allow timbering of the new work where it crosses the old slope.

A number of the mine managers and coal company representatives met accidentally across the line toward the latter part of November—but whence they came, or what their game; I don't care to tell—beyond saying that it was agreed, 'nem. con.' that there shall be no interference with present tariff rates to local consumers, in order that these, especially on zero days, may realize to the full that coal is no joke; and that though, in parting, each bowed low to the other, the meeting was not characterized by unbroken unanimity, on other points; instead there was a tendency to divergence of opinion, and individual assertion.

Beginning with Dec. 12 the Child-labor law of Illinois came into effect in all the coal mines in the state. Under it no boy under 16 years can work in a mine. It is estimated that 2500 boys will be taken away from employment. The law may work some hardships at first, but the RECORD cannot help thinking it will be best for all concerned in the long run. This law is another step toward the time when no boy under 18 can be employed. By that time he has ceased to be a boy—at least in his own eyes,—and should not prove to be chiefly a source of worry to his employers.

"The Mabou and Gulf Railway Co. are making preparations to commence the construction of a railway line from their collieries at Mabou to Orangedale, on the Intercolonial Railway, a distance of about forty miles. The purpose of this is to secure an outlet, to the company for the supply of the local markets through the provinces during the close season. The company has a large pier at Mabou where they will ship their coal in the summer months. Only one or two cargoes were shipped last summer, but next year they expect to have a big output, as they have booked several important orders, both in the provinces and along the St. Lawrence."

The above is from the C. B. correspondent, presumably of the Halifax Herald, who has a penchant for tall stories. The RECORD has every good wish for the Mabou Coal Co., and its management, yet it hopes the assertion that the Company is preparing to build a railway from its mines to Orangedale is at least premature. The RECORD hopes the attention of the management will not be divided for a little time, but that all attention will be given to the development of the mine. The reason given, by the Herald, for the building of the proposed railway, namely, to secure an outlet for the supply of the local markets during the close season, is scarcely convincing. In order to make the railway pay there will require to be much larger shipments than will likely be necessary to supply the local markets from Decr. to April, and the company is not yet in a position, nor will it be next year, to make extensive shipments. The thorough proving of the coal field seems to be the first prudent course of the company. The RECORD is inclined to be optimistic, both with regard to the quantity and the quality of coal at Mabou, but it does not forget that there are others with a much wider knowledge than its editor claims, who will not be convinced of the extent of the field until development work has proceeded further. The management are certain that the coal is there and lots of it. They may be perfectly correct, and the RECORD sincerely hopes they are, but still it appears to us to be the soundest policy to devote every energy to the development of work underground, until the extent of the seams has been abundantly demonstrated; and that done an outlet may be sought for with confidence.

At the new colliery at Big Glace Bay the work has been retarded considerably owing to the tubes in the boiler giving out and as there is an extraordinary flow of water, particularly in the North slope, to get rid of the power was not sufficient to keep the water clear, although the machines were stopped. The slopes are now being driven by hand pick miners, and will be until more power is obtained.

### LOST SECRETS

It is generally known that, for a variety of reasons, certain important inventions have been lost to mankind. Thus Dawson, the famous American inventor, who was thrown into prison for killing his son-in-law, refused ing copper and making it equal to Damascus steel. The more striking example of the tenacity with which inventors cling to their ideas. And also of the strange fatality which seem to dog their footsteps. Ford had of a smelting grade could be treated without smelting it, and at a fraction of the cost it takes at present to perform the work. Upon perfecting his invention he wrote to some of the great metal manufacturers, with the result that the head chemist of the Carnegie firm came, and was so impressed by the marvellous value of the secret that he offered Ford an annual income of £20,000. But fate intervened. On the date on which he was to divulge his secret the unfortunate inventor was struck down by apoplexy and never recovered. The results of his long years of experiment are lost perhaps for ever.

Chemistry holds many secrets, some of which, when they are discovered, will not be found out for the first time. Amongst these is the substance which formed such a terrible effective weapon against fleets hostile to the Greeks, and which was known as Greek fire. Nothing known at the present time will do what this substance was reported to do—namely, set fire to ships which will even approximately do it is the metal potassium and this in conjunction with petroleum or some other of a similar nature may have been the secret of Greek fire. But if it was, it only removes the difficulty one point further. Potassium is expensive, and at present can only be produced by the agency of electricity. To produce sufficient effect to envelope a ship in fire must have required a large quantity of the metal, wherefore if potassium was the base of Greek fire, the Greeks must have had possessed the secret of making it easily and in quantity. The Romans knew of something of the same kind. Pliny speaks of torches which were extinguishable and which, if plunged in water, burned the brighter. That is going one better than Greek fire or absolutely nothing is known at present which can satisfy this problem. Chemistry in some form or other would account for the drug or preparation which was used by the Scandinavians and early English for passing of this drug, whatever it may have been, people could walk barefoot over red hot ploughshares, and plunge their naked arms into a cauldron of boiling water to

fetch from the bottom the holy stone, which proved their innocence. Editha, the daughter of Earl Godwin and the wife of Edward the Confessor, passed successfully through the second of these trials and this would not have been possible without some protection, the receipt of which is lost to us. There could have been no 'face' about these trials, especially when they were carried out in Scandinavia. There it was not a possibly corruptible priest who officiated, but the enemy of the man who was being tested, and he would naturally see that things were in proper order from his point of view. It is probable, however, that this secret is not altogether dead. In the East tricks of the same kind can be seen almost every day, and the disbelieving spectator may, if he chooses, test the genuineness of the red-hot iron with his own fingers or lips.

Probably few persons who hear the name of mineral wool have any idea as to how or where it is obtained. This product is formed by allowing a jet of steam to escape through a steam of liquid slag, by which the slag is blown into fine, white threads. Its quality of being a poor conductor, makes it a good material for covering steam boilers and pipes.

**A Rule for Engine Drivers.**—If a gauge glass breaks, turn off the water first, and then the steam to avoid scalding yourself.

Optimism, which runs to recklessness, is an unsafe factor in connection with mining operations; but the optimistic spirit is even more essential in mining than in other lines of industry. The hopeful mind and energetic hands have often demonstrated that gold is where you find it, when others have failed to find it "where it ought to be." The true miner, who likes the occupation, has an optimism which is seldom stifled by adverse experience.

Burn some alum and pound it real fine, then sift through coarse muslin and it is ready to brighten steel. Use it dry with soft brush. Of course, burnt alum can be bought at the druggist's already powdered. Emery powder also will often make small spots of tarnish disappear from steel.

Liquids are not entirely incompressible, but they are so nearly so that for most purposes they may be considered as incompressible. The bulk of water is diminished one-thousandth by a pressure of 324 lb per square inch, or 22 atmospheres; varying slightly with its temperature. It is perfectly elastic, regaining its original bulk when the pressure is removed.

One of the most marvellous pieces of engineering in America, if not in the world, is the great tunnel by which the Pennsylvania railroad secures a terminal station in the city of New York. This tunnel is nearly six miles long. The outside diameter of single sections is 23 feet. It starts in a hill in North Bergen, N.J., runs under West Hoboken and Weehawken, then under the North River, and under the intervening ground until it reaches the terminal station extending from 9th to 7th avenues, thence it passes under the city from 7th to 1st avenues, under East River, and under Long Island City. The tunnel is not single throughout its entire length but in some places is triple. The size may be imagined when it is known that each of these triple tunnels will contain two tracks. The new terminal station will contain two will be the largest in the world being 1800ft from east to west and 46ft from north to south.

(Continued from page 18)

in his private room, with his private secretary facing him, and his assistant Mr. D. Stewart to the left. The likeness of Mr. Cowans is good, but the artist has given Mr. Stewart a tuft of black whiskers which he does not possess. This he may have done to give the face a more ministerial appearance. And now for the Underground works.

### Railway Department

**A**FTER the burning of the old station house a new site was chosen nearer the gen'l offices. The station is much larger than the former one and is conveniently fitted up with booking, dispatchers, telegraph and other offices. The freight shed is a little to the west. When this building was erected a year or so ago, it was planned on a scale supposed to be adequate for years to come. But this was a miscalculation, as in a short time it was found to be wholly inadequate for the growing trade of the town, so it had to be enlarged to double its former dimensions. Facing the station are the weigh scales, where all the coal going east or west is weighed. Formerly the coal for the I. C. R. was weighed at Springhill Junction but it never gave satisfaction to the shippers o

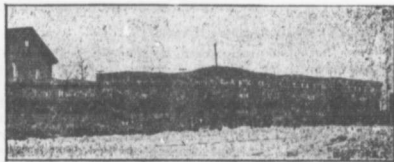
department that the scales be removed to the mines. This was thought to be a peculiar request and Mr. Cowans was asked how the department could be guaranteed the actual weight. "Send up a checkweighman. That will save you expense. At present you require an engine and crew, whereas one man can do the checkweighing." At length the department agreed that the scales should be situated at Springhill provided they were fitted with Fairbanks Improved Registering Beam, a very simple, seemingly, device which impresses the weight on blank spaces, left to receive the same, on perforated, partly printed, tickets. First one end of the ticket is inserted, in a space under the moveable weight on the beam, and the exact figures indicated on the beam impressed on the card by a motion of the hand, then the other side of the card is inserted and receives a similar impression. One half of the card is sent to any customer who may demand verification of quantity charged.

### ROLLING STOCK.

Besides being coal carriers the company has a regular and well arranged passenger service between Springhill Junction on the I. C. R. and Paresboro, the company's shipping port on the Bay of Fundy. The company has six locomotives including a new shunter, and Locomotive No. 9 which is the biggest and strongest engine in N. S.



STATION AND WEIGHSCALE.



OLD 6 TON--REBUILT 8 TON--NEW 15 TON  
This locomotive with its tender loaded represents

receivers. Mr. Cowans suggested to the Railway



—PARRSBORO THE SHIPPING PORT.—

no less a weight than one hundred and forty seven tons. Two highly finished passenger cars, a first class and a combination second car, were last summer added to the service. These class of cars are not excelled by any in use on the bigger railways. They have Baker heaters which serve as auxiliary to steam. The rolling stock consists of six locomotives, six passenger cars, two express cars, flangers, snow plough, thirty three flat cars, ten stone cars, capacity 80000lbs. each, two hundred and eleven even eight ton, and seventy five fifteen ton, hopper cars. The cut shows the evolution of the hopper car from a capacity of six tons to fifteen. The road all the way has been laid with 80 lb. steel rails and new iron bridges replace the old wooden ones. We present a view of Parrsboro, the



THE SPRINGHILL.

company's shipping port, from which shipments are made to St. John and along the coast and to the United States. For the water carriage of its coal the company owns seven barges of a capacity of 6000 tons. It is also the owner of a powerful ocean going tug, the Springhill, which can tow three barges to any desired port. That these barges and the tug is kept busy is evidenced by the fact that 80,000 tons of culm were carried this year to United States ports, exclusive of the other large water shipments.

### Underground.

It is all very well, some may say, to have extended modern and expensive plants overground. These may all be there and yet they may be denotive, giving an idea of development which is not justified by the quantity and value of the coal in the mines. It now is time to give as succinct account as possible, consistent with accuracy and fullness, of the source from which the surface undertakings derive the material which keeps them in constant and full operation. The first slope to be noticed is No. 2 leading to what was in the early days called the west slope seam. The flooding of the East slope a few years ago was rendered necessary to quench the fire which occurred there. The west and east slopes having a connection, the water found its way into and submerged the lower workings of No. 2. On this account for the past few years the output from this slope has been handicapped, as the working places were limited. The submerged portion has now been recovered. The cleaning and timbering of the slope from the 2400 to the 3000 ft lift was a task, the difficulty of which can only be fully described by one who from day to day watched the

progress of the undertaking. There were many and big risks incurred, but the good judgement and great ingenuity exercised in carrying out the work rendered its accomplishment successful without loss of life, and with little detention to the working of the upper portion. The first fall encountered was about eighty feet, below the 2400 ft. lift, and this was probably the worst, being about forty feet in height. All the stone and stuff that came down with this fall was all loaded away, and the ugly looking cavity secured with great stringers and well braced with heavy timber and double timbered for a considerable distance up. From this point to the bottom some 600 feet of continual falls, varying from 10 to 25 feet in height were encountered. The stuff was loaded away and the falls secured as in the first instance. It was a stupendous undertaking, the immense expense of which was justified by the immense value of the coal won back. The company is to be congratulated on the recovery of valuable property, and the management on the success of their efforts. By the recovery of the lower portion of No 2 which has been lost since 1897, the output of this slope can be increased by about thirty per cent.

The length of No 2 slope from surface to bottom is 3000 feet. The pitch of the slope is 32 degrees. Nearly all the coal has been won down to the 2400 feet. lift. Here are some of the distances of the levels etc. The east level to tunnel is 4800 feet, Mintolevel from tunnel east 2759 feet, from tunnel east to No. 2 slope to No. 5 or Aberdeen slope going east 400 feet, from No. 5 slope east to face by level 5,500 feet, west from No. 5 slope 700. The pitch of seam east of No. 5 or Aberdeen slope is from 38 to 50 degrees, reaching its maximum steepness half way along the level. At this point there are no places in operation exclusive of sinkings. There is a large amount of development work going on. The slope is being driven about half way in west level. This will tap two seams, the Straightin and the Minto, four ft. four and four ft. six inches respectively. Levels in the 3600 ft lift in No. 5: Half way level 1200 ft and back head west half way level Aberdeen. All these places are progressing satisfactorily and making pit room. Some 230 miners are employed in this mine, including Aberdeen, for which there are close on 250 places. There are four balances and two-inclines in operation, and three balances being made ready. There are 17, west, chutes in operation, and ten new places ready for a start. The average production of coal is about 1400 boxes of 1700 to 1800 lbs each a day, but the chief desires that the average be increased to 1600. As many as 1650 boxes have gone out in a day, and presumably it is thought what can be done one day can be done every day. That has never so far been the case in these parts. The height of the coal in No. 2 is, west, eleven feet, east, ten feet and four inches, and is gradually reduced to 7 feet at 5000 feet west. The system of haulage is main and tail rope; there is besides work for 23 horses. The coal is tender in places therefore large quantities of timber, large and small, from 18 ft. by 14 inches,



down to 5 ft. x 4 in. are used. The mine is freed of water by duplex Jeanesville pumps, one in No. 2 and one in No. 5. The air current passing through the mine is in volume 95000 feet per minute. The ventilation is sweet, and the condition of the mine in general, all that can be desired. The rooms are driven ten feet wide and the cross head eight feet. Timbers—a boom and two props or three if coal is fresh,—are placed from 3 to 4 ft apart. It is claimed for No. 2 slope coal that it is not excelled by any in the province.

—THE NO 3, OR NORTH SLOPE.—

**T**HIS slope is a very short distance north from No. 2. Here 148 'places' supply work for some 240 miners. The coal is all filled from chutes, with the exception of what comes from two small inclines. A number of new places are ready, it being the policy of the management to keep development work well ahead. There are sufficient places for a daily output of 1600 boxes, though the daily average is a hundred or two boxes short of that number. This average can be easily maintained under existing conditions indefinitely, and largely added to by a little effort. On the west side of the slope the coal is ten feet and on the east four feet two inches, but it is gradually increasing in height. The same system of haulage is employed as in No. 2. In this slope also large quantities of timber are used, and iron booms are being much used in the slope and for mainways. The roof is fairly good. The air courses are in excellent condition. The air circulates at the rate of 98,000 cubic feet per minute, the fan making 110 revolutions per minute with 4 inch water gauge. The general condition of the mine throughout is satisfactory. The coal is worked back from the boundary to the bottom by bord and pillar method. The coal is taken by chutes to level. The pillars are fifty feet. The bords are 10 feet wide and crossheads 8 feet as in No. 2. Large sized duplex pumps are employed in unwatering, one stationed at 1300 feet and the other at 3200 feet from surface. There is also a medium sized 'Cameron' set at bottom of slope which forces the water to the 3200 foot lodgement. The vertical height from the bottom to the surface is 2,050 feet. Below are given the distances of the several leading places.

Length of slope	4100 feet.
Level west 3200 ft. lift	9504 "
" " 2600 "	9528 "
" " 3800 "	1800 "
" " East 3200 "	2000 "
" " 2600 "	900 " U. Seam.
" " 2600 "	1000 " L. Seam.
" " 3890 "	700 " E. Tunnel.
" " 3800 "	150 " W. Tunnel.

Aberdeen or No. 5 Slope.

The history of Aberdeen slope is interwoven with that of No. 2. The coal is hoisted by an engine, placed on the surface, to the 2400 feet level, from the two lower lifts, distant 600 feet and 1200 feet respectively. The coal is then hauled by horses some 400 feet to No 2 haulage and thence to bottom of No. 2. This applies to the east as well as to the west side.

AVAILABLE COAL

**I**T may now be asked what quantity of coal has the development work referred to exposed. That is rather a hard question, but an answer is attempted in the following tables:

In No. 2 slope:—

(1) 8000 feet x 600 x 8'	6'	8 per cent worked out.
(2) 8500 " x 500 x 8'	6'	" " " " "
(3) 2000 " x 600 x 4'		20 per cent worked out.
(4) 2000 " x 600 x 4'		unworked
(5) 1075 " x 600 x 4'		"
(6) 1075 " x 600 x 4'		"

(1.&2) West 2600 & 3200. (3&4) East 3200 & 3800 bottom coal. (5&6) East 3200 & 3800 top coal.

No. 2 Slope and Aberdeen.		
(1) 4800 x 400 ft x 9 ft	50	per cent worked out.
(2) 4000 x 1000 " x 7 "	25	" " " " "
(3) 3000 x 600 " x 9 " 4 8 "	4	" " " " "
(4) 1100 x 90 " x 4 "		unworked.
(5) 700 x 400 " x 11 "		unworked.
(6) 1225 x 500 " x 9 " 4 "		"
(7) 1225 x 600 " x 9 " 4 "		"
(8) 4000 x 1200 " x 9 " 4 "		"
(9) 2000 x 600 " x 9 "		"

(1) east No. 2 2700 ft. level (2) east of Aberdeen (3) east No. 2 sinking. (4) Minto seam. (5) west No. 2 slope (6) west No. 5 sinking (7) do lower level. (8) east No. 5 sinking (9) west 3000 feet lift.

At an output of 500,000 tons yearly there is sufficient coal exposed at this moment to last for many years, just how many years I have not time nor inclination to figure out. The Springhill Mining Students Association may be well employed for a night in calculating the quantity. Excellent as the above showing is it gives no adequate idea of the vast resources of the company. As said in a former issue the Cumberland Ry. & Coal Co. is the largest owner of coal mining areas in the Dominion. In the immediate vicinity of Springhill it possesses 17 square miles, while in other points in Cumberland and Cape Breton it owns 173 square miles additional, or a total of 190 square miles. No one will undertake to say there is coal of commercial value in every one of the areas held under lease from the crown, but if it underlies a fourth of the total then the property may be said to be of incalculable value. Mr. J. R. Cowans never let any chances go by. If there was an area for sale, or a vacant area not taken up, it was bought or covered at once. And then besides the areas held under lease the company holds thousands upon thousands of acres of land in fee simple.

GENERAL REMARKS

The position of the collieries, from a geographical standpoint is excellent; shipments can be made all the year round by water as well as by rail. To the position in part, as well as to the excellent quality of the coal, is due the fact that the product demands a high price than at some other of the larger mainland collieries. Good prices for coal are necessary these days owing to the greatly increased cost of production. The public may not be aware how much more coal costs the company than it did four years ago, in the one item of wages alone. Take some instances. In 1901 no less a sum than \$106,882 represents the amount paid additional as increase in wages; in 1902 \$122,287, in 1903 \$139,963, and this year it will reach at least \$156,000, or a total for the four years of over half a million dollars. Let it be clearly understood that this half million has no reference to the more wages paid owing to there being more men, it represents the increased sum necessary to do the same amount of work in 1904 as was done in 1899 or 1900. In January, of 1901 the increased per centage in wages, cost the company over \$9000, the average for the year being a trifle less than that amount. In 1902 the average increased percentage was over \$10,000 a month,

in 1903 \$11,500, and 1904, up till end of Sept, close on \$13,000 per month. Whatever may have been the profits made by the company in these years, there is no question but the employees were great gainers. The gradual gain to the men in better wages may also be gathered from the following figures:—

Average daily wage of miners for the three years 1893—1895 inclusive was \$1.92 per day, 1896—1898 inclusive \$1.90 per day, 1899—1901 inclusive \$2.23 per day, 1902 1903 till Sept. 1904 \$2.82 per day. The heaviest increase it will be noticed is in the last two years. The company will have likely paid out in wages by the end of the year, for 1904, the large sum of \$850,000, and this in the colliery department alone.

The company has an excellent staff of officers. Besides Mr. Stewart and Mr. Carl Cooper, already mentioned, Mr. Ross Cooper is cashier, and has been for over a quarter of a century, Mr. A. M. Leal is accountant. These gentlemen have long been in the employ of the company, and are faithful servants. Talk about the long hours of the average workmen, why, these men are by no means strangers to days of work extending to double the length of the working day of the average mine worker.

In the mine department, had not Mr. Cowans had behind him so efficient a lot of officials it goes without saying that neither above or below ground would the works be in so high a state of efficiency. The mine department is admirably directed by Mr. C. Hargreaves, manager, who has been long in the service of the company. He is assisted intelligently by Mr. Wm. Matthews if seeing is believing one may believe in Bill; there's a lot of him. Mr. Wm. Lorimer, another soney looking chap has charge underground of No. 2 slope, while D. McSavagney has charge of No. 3. Chas. Albon is the 'official measurer.' His is a responsible position as he rechecks all the measurements in each pit. Mr. George Hall is the indefatigable superintendent of works, and to him and Mr. H. T. Muirhead, mechan' foreman, deservedly belongs the credit of bringing the mechanical department up to its present high and efficient state. Mr. Arthur Aalloway, as mechanical draughtsman has contributed his quota to designs, and lay outs of the numerous additions and betterments. Mr. T. H. Howard is the chief engineer of the company, and besides the surveying, and preparing of pit plans, he has under his charge the numerous coal areas and extensive tracks of timber lands now owned by the company. Mr. N. L. McDougall is the general factotum of the Ry. Dept. Mr. Dulhanty has charge of maintenance of way and structures, and the road under his supervision has arrived at a state of efficiency equal to any of the main lines in the country. The Railway accountant is Robt. Aitman, and the wharf manager at Parrsboro Andrew Wheaton. Mr. Wm. Conway is Lamp Inspector, and has instructed more men in the use and care of safety lamps than any other man on this side of the water. Mr. John Murray sr. is foreman blacksmith, coming Picot County, with Conway and Hall thirty years ago. John is as good a blacksmith as he is a debater and that is saying not a little. Luke Megeny is foreman carpenter. And these are not all: there are a large number of minors: for instance as Examiners there are in No 2 slope:—

R. McGowan, Jos. Lanner, M. McMillan, Milson Hatten, G. Cunningham, H. Cunningham, G. W. Burden, Wm. Boran, A. C. McKinnon, John Simpson and J. T. Hartley.

And in No. 3:—

J. R. Cameron, Jas. Davidson, Wm. Letcher, Jas. Scott, John Bradley, Abner McLean, Simon D. Eraser,

Frank Crawford, C. W. Mitchell, A. McTaggart, John Fletcher, Geo. Henderson, A. Paul and Wilfred White. Some of these being progressive men are readers of the Record. Others are not as yet subscribers. The time keeper in No. 2 slope is G. I. Gwillan, and in No. 3 Wm. Murray. And by the by, there are the overmen of the pits, Wm. Reese, Burton Langille, W. A. Wilson, Chas. Martin and John Hargreaves. Possibly there may be some omissions: if so apologies will be forthcoming on next visit.

#### IN CLOSING.

**T** Cumberland Ry. & Coal Co. may be said to be a close corporation. There are not over a half dozen shareholders in the company. The Hon. Sir Geo. Drummond, probably the foremost man in financial and manufacturing circles in Canada, is President of the Company. Sir George may be said to be president of the Bank of Montreal, for though he was elected vice-president, Lord Strathcona, the nominal president, so seldom attends the meetings that the duties of chairman devolve on the vice-president. Sir George Drummond is also president of the Canada Sugar Refinery, and a director of the Canada Pacific Railway. He is an ex-president of the Montreal Board of Trade. Mr. Edgar McDougall is vice president of the company, and Mr. H. K. Drum is the Sec'y and Treasurer: a position which all doing business with the company, hope he may long retain, as unflinching punctuality is one of his characteristics. The head office of the company is in Montreal.

The original purchase, of the present company from the Springhill Coal Coy., was seven square miles. Some years later, or at the time Mr. Cowans came to Springhill the areas had been increased to seventeen. Gradually, year by year, the number of areas held by the company has been added to so that now it is possessor of no fewer than a hundred and seventy eight square miles in one uninterrupted block in the Springhill field, and a square mile in Cumberland County outside this immense block. Besides it owns eleven square miles of a well defined coal field in Cape Breton Co. The first payment made by the Cumberland Ry. & Coal Co. to the original owners on the transfer of the property, was in the shape of a cheque for between eight and nine hundred thousand dollars. A subsequent payment was made on the final adjustment, I believe, but to whom and for what amount, I bearded my memory. Possibly it was for the interest that the G. M. A. of London, retained in one or a couple of areas, held conditionally by the Springhill Coal Co. If the value set on the property, held by the Springhill Co., 7 square miles and a plant of a primitive pattern, was not far from a million, it will baffle one to give an approximate of the value of a property over twenty five times its original extent in sq. miles, and which has an extensive plant with every modern practical appliance.

It is possible reference to some points has been omitted, and some points referred to not fully emphasized, but it should not be expected that so big a subject could be exhaustively treated at one writing.

## NOVA SCOTIA'S IRON DEPOSITS.

"At a meeting of the mining committee of the board of trade it was decided to request the Dominion government to assist in an investigation of the extent and value of the iron ore deposits of Nova Scotia. The big steel companies have spent a good deal of money in investigations of this kind, and their information is probably accurate, but what the mining committee desires is that this information should be general, not the exclusive possession of two companies. The idea is that the government should send an expert from the Dominion geological survey, who would spend a season in this province and become thoroughly acquainted with the iron deposits, their extent and value, and give the public the benefit of his investigations."

Commenting on the foregoing from the Halifax Herald, one who has had an eye on Halifax and its methods thus breaks forth in a letter to the RECORD

"O little town of Halifax,

How still, how still we see thee lie;

Above thy deep and dreamless sleep,

The silent stars go by."

Philips Brooks?

"To drop poetry and not quite forget the fable of the belly and the members, is Halifax ever happy except when begging? Is it not already over-pap-fed by the governments? Is it not a distributing point only because of its magnificent harbour, rather than a producer; and is it not a subject of general complaint at industrial centres that it is a vampire; that its citizens busy themselves with other peoples' affairs; that its professionals organize and boom all kinds of mines, and lumbering schemes, often to the detriment of these interests; that they get more than their proper share of crown lands, mining areas and timber limits, of provincial exhibitions, government drills, and other privileges?"

Why does the Halifax Board of Trade plume itself on doing more for the public weal than is done by others? Have not Sydney, North Sydney, New Glasgow, Pictou and other towns given bonuses for the establishment of iron, steel and other works in "addition" to merely petitioning the government for assistance? asks Mr. James T. Burchell. Outside its members, has not much information, as to the extent and value of the iron ores of Nova Scotia been gathered in various official and other publications of the last seventy years? What of the special reports by Hon. Gilpin and others of the exhibition committees, of the provincial department of mines, and the mines branch of the geological survey? Do not the mining society of Nova Scotia and the provincial museum disseminate just such in-

formation? asks the Hon. Robert Drummond. Has not the Maritime Mining Record recently published several articles on our iron ores?

Are not reports issued from year to year, by the Department of Mines which give the statistics of production of mines at work; on deposits proved to be of commercial importance, as at Londonderry, Bridgeville, Torbrook, and Nietaux, Whycoomagh, Brookfield, Newton Mills, Selma, Goshen, Arisaig, Barachois, Bois-dale, Clement-port, and other places?

Might not the "mining committee" define a little more clearly what it wants? Is it information on the iron deposits not at present worked, the results of private investigations on areas recently explored by certain companies, which should, the committee appears to think, be made public for the use of others? Or does it desire to know to what extent iron mining in Nova Scotia can be expanded, or the ores of the province come into competition with those from Wabana, and other sources? Does not Halifax need a few more Captains of industry?"

## PUMPING PLANT FOR COMSTOCK MINES

One of the most important deals in mining machinery ever made on the Pacific Coast was closed in San Francisco recently. This was the awarding of the contract for the permanent pumping plant which is to drain the group of middle mines upon the Comstock lode to the great vertical depth of 3000 feet through the Ward shaft. The successful bidders were the International Steam Pump Company of New York, whose works are in Harrison, New Jersey, and the Westinghouse Electric and Manufacturing Company of Pittsburgh, Pennsylvania. The contract price is about \$80,000.

The contract calls for two first motion, electrically driven Express pumps, each of the units to have a capacity for lifting 1600 gallons of water per minute, against a pressure equivalent to a height of 1500 feet, or from the 3000 foot level up to the level of the south lateral branch of the Sutro tunnel. Each pump is to be driven by a 600-horse-power, slow speed induction motor. The \$80,000 contract just awarded includes besides 600 feet of 16 inch pump column pipe, (the Ward Shaft Association already having 900 feet on hand) a travelling crane for the pump station; an automatic oiling system; a small air compressor for filling the air chambers, a small vacuum for discharging the vapor from the suction chamber; all the piping and valves of every description for completing the installation and a complete set of duplicate parts of the pumps.

DOMINION BRIDGE CO., LTD., MONTREAL, P. Q.

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TURNABLES, ROOF TRUSSES

STEEL BUILDINGS

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Designers, Manufacturers and Builders of  
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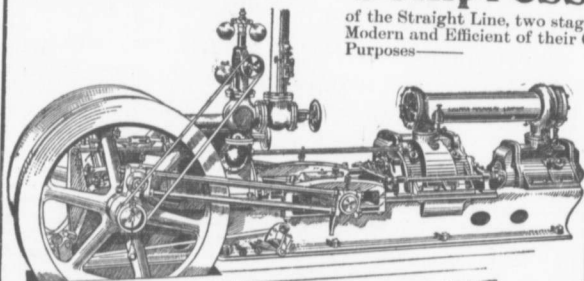
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of the Straight Line, two stage type, are the most Modern and Efficient of their Class for Coal Mining Purposes—



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Machinery  
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## WATER TUBE BOILERS,

Over 2,000,000 Horse Power,

of these Boilers in use in the United States and Foreign Countries. Made entirely of wrought steel. Employ no tube-caps or gaskets. Four man-holes give access to the entire interior, exposing every rivet, tube and joint in the boilers. Can be cleaned in ONE-FOURTH the time required by other types.

The Stirling Superheater Boiler, a combined water-tube boiler and superheater in one, for all degrees superheat from 50 to 250 degrees Fahr. The only commercially practical superheater for high degrees of superheat.

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## MONTREAL STEEL WORKS Limited.

STEEL CASTING  
FORGINGS,  
SPRINGS,  
FROGS,  
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We make a Speciality of cast Steel WHEELS  
and other  
Steel Castings for

**MINING PURPOSES.**

INTERLOCKING SWITCH AND SIGNAL Plant

(Under the patents of Haxby & Parsons, Limited, of London Eng.)  
CANAL BANK, POINT ST. CHARLES, MONTREAL.—

# INVERNESS COPPER COMPANY, LIMITED.

Operators of Smelting and Refining Works at Pictou Nova Scotia and of an Extensive Mining  
 . . . Territory in the Island of Cape Breton. . . .

HEAD OFFICE . . . . . HALIFAX, NOVA SCOTIA.

One half of an issue of \$250,000.00 worth of Preferred Shares, bearing Seven Per Cent Interest, Cumulative, is offered for Subscription. The earning power of the Company's Smelting Plant alone is not only sufficient to pay the interest on its preferred Stock, but can yield a profit to pay a dividend on the entire capital of the Company if the whole of its Common Stock were issued.

The assets of this Company, besides the Smelting and Reduction Works, which were completed at a cost of nearly \$225,000.00, include an enormous tract of rich mineral land in Inverness County Cape Breton, comprising the larger part of a district which has been pronounced the most promising mining region in Eastern Canada. Several important ore deposits have already been discovered on the Company's Property.

No more central location for a Smelter than the town of Pictou could be selected in the Maritime Provinces. Here both Ores and Fuel can be assembled economically. The Smelter occupies a commanding position on the harbor front of Pictou, with a Pier running into the water and a Branch Railroad connecting with the main line of the Intercolonial.

The present capacity of the plant is about one hundred tons daily, which it is proposed to increase at an early date to three hundred tons.

While developing and producing on its own properties and shipping to the Smelter, the company will also treat Copper, Gold, Lead, and other ores from all parts of the Lower Provinces and Newfoundland. The LABORATORY connected with the Smelter is one of the most complete in country.

There are Copper, Gold and Iron Ores now on the Smelting premises at Pictou said to be worth nearly \$20,000.00. As the Pictou Plant is the only Copper and Gold Smelter in Eastern Canada, there is ample ore in Nova Scotia, Newfoundland and other Provinces of the East to keep it in constant operation. The testimony of authorities on this point is so conclusive that the owners have been recommended to increase the capacity of the works as soon as possible.

Some of the best known men of the Lower Provinces are interested in the development of the Cheticamp Mining District in Cape Breton, which is largely controlled by the Inverness Copper Company, Limited.

Deposits of Copper, Gold and Lead Ores have already been located, which are expected to prove in value far in excess of the total capitalization of the Company.

One operating Company, working on the Property close to the Inverness Company's holdings, has recently opened an ore bed showing values ranging from \$25,00 to \$80,00 worth of gold to the ton.

Experts pronounce the ores of the district adapted for simple treatment for the extraction of their values.

The Smelting Plant will not only be available for the reduction of the Inverness Ores, but for the treatment of Ores from all Sections of the Eastern Provinces and Newfoundland, the extensive operations thus assured justifying the proposed early enlargement of the works.

This Strong Combination of valuable Mining and Smelting interests should be a safe guarantee of a successful future for the Company.

Investors desiring to secure some of the Preferred Stock in this enterprise should apply at once in order to obtain the Bonus of Common Stock received by Immediate Purchasers.

APPLY TO

**W. R. DUNN & Co.,** Fiscal Agents,  
 Bank of Montreal Building, Halifax, Nova Scotia.



**Synopsis of Regulations for disposal of Minerals on Dominion Lands in Manitoba, the Northwest Territories and the Yukon Territory.**

**Coal.**—Coal lands may be purchased at \$10 per acre for soft coal and \$20 for anthracite. Not more than 320 acres can be acquired by one individual or company. Royalty at the rate of ten cents per ton of 2000 pounds shall be collected on the gross output.

**Quartz.**—Persons of eighteen years and over and joint stock companies holding free miner's certificates may obtain entry for a mining location. A free miner's certificate is granted for one or more years, not exceeding five, upon payment in advance of \$7.50 per annum for an individual, and from \$50 to \$100 per annum for a company, according to capital.

A free miner, having discovered mineral in a place, may locate a claim 1500 x 1500 feet by marking out the same by two legal posts, bearing location notices, one at each end on the line of the lode or vein.

The claim shall be recorded within fifteen days if located within ten miles of a mining recorder's office, one additional day allowed for every additional ten miles or fraction. The fee for recording a claim is \$5.

At least \$100 must be expended on the claim each year or paid to the mining recorder in lieu thereof. When \$500 has been expended or paid, the locator may, upon having a survey made, and upon complying with other requirements, purchase the land at \$1 an acre.

Permission may be granted by the Minister of the Interior to locate claims containing iron and mica, also copper in the Yukon Territory, on an area not exceeding 160 acres.

The patent for a mining location shall provide for the payment of Royalty of 1-2 per cent of the sales of the products of the location.

**Placer Mining.**—Manitoba and the N. W. T., excepting the Yukon Territory.—Placer mining claims generally are 100 feet square; entry fee, \$5, renewable yearly. On the North Saskatchewan River claims are either bar or bench, the former being 100 feet long and extending between high and low water mark. The latter includes bar diggings, but extends back to the base of the hill or bank, but not exceeding 1000 feet. Where steam power is used, claims 200 feet wide may be obtained.

**Dredging in the rivers of Manitoba and the N. W. T.,** excepting the Yukon Territory.—A free miner may obtain only two five fathom claims of five miles each for a term of twenty years, renewable in the discretion of the Minister of the Interior.

The lessee shall have a dredge in operation within one season from the date of the lease for each five miles, but where a person or company has obtained more than one lease one dredge for each fifteen miles or fraction is sufficient. Rental, \$10 per annum for each mile of river leased. Royalty at the rate of two and a half per cent collected on the output after it exceeds \$10,000.

**Dredging in the Yukon Territory.**—Six leases of five miles each may be granted to a free miner for a term of twenty years, also renewable. The lessee's right is confined to the submerged bed or bars in the river below low water mark that tendency to be fixed by its position on the 1st day of August in the year of the date of the lease.

The lessee shall have one dredge in operation within two years from the date of the lease, and one dredge for each five miles within six years from date. Rental, \$100 per mile for first year and \$100 per mile for each subsequent year. Royalty same as placer mining.

**Placer Mining in the Yukon.**—Creek, gulch, river and hill claims should not exceed 200 feet in length, measured on the base line or general direction of the creek or gulch, the width being from 1000 to 2000 feet. All other placer claims shall be 250 square feet.

Claims are marked by two legal poles, one at each end, bearing notices. Entries must be placed within ten days, if the claim is within ten miles of mining recorder's office. One extra day allowed for each additional ten miles or fraction.

The person or company staking a claim must hold a free miner's certificate. The discoverer of a new mine is entitled to claim of 1500 feet in length, and if the part consist of two, 1500 feet together, on the output of which no royalty shall be charged, the rest of the part ordinary claims only.

**Entry fee \$10.** Royalty at the rate of two and one-half per cent on the value of the gold shipped from the Yukon Territory to be paid to the Comptroller. No free miner shall receive a grant of more than one mining claim on each separate river, creek or gulch, but the same miner may hold any number of claims by purchase, and free miners may work their claims in partnership by filing notice and paying fee of \$2. A claim may be abandoned, and another obtained on the same creek, gulch or river, by giving notice and paying a fee.

Work must be done on a claim each year to the value of at least \$200. A certificate that work has been done must be obtained each year if not the claim shall be deemed to be abandoned, and open to occupation and entry as a free mine.

The boundaries of a claim may be defined absolutely by having a survey map and publishing notices in the Yukon Official Gazette.

**Parties to a claim.**—All unappropriated lands in Manitoba, the North West Territories and within the Yukon Territory, are open to prospecting for petroleum, and the Minister may reserve for an individual or company having machinery on the land to be prospecting an area of 100 acres each period such as he may decide, the length of which shall not exceed three times the breadth. Should the area not exceed 500 acres and satisfactorily establish such discovery, prospecting that oil in the quantity and satisfaction shall be sold to the person or as the rate of \$1 an acre, and the remainder of the tract reserved, namely, 1500 acres, will be sold at the rate of \$3 an acre, subject to royalty at such rate as may be specified by order in Council.

JAMES A. SMART,

Deputy of the Minister of the Interior

Dept. Interior.

# TOBACCO.

WE are manufacturing our Plug Tobaccos from the Best FOREIGN and CANADIAN Leaf. Our Brands "Bull Dog," Registered, are the best combination Tobaccos made in Canada.

"Bull Dog" Twist, 12 to the pound; not 13 or 14 to the pound, to deceive the Consumer

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Ask your Grocer for them and take no other which a Retailer may say is Just as Good.

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W. SAURENT, Montreal.

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George Patterson,  
BARRISTER, SOLICITOR, ETC.  
NEW GLASGOW, N. S.  
Successor to Sinclair and Patterson—

At intervals of five years the B. Greening Wire Co. of Hamilton, Ont., and Montreal, have prepared and sent out in convenient form, well printed and profusely illustrated catalogues, giving details of the various products of their extensive and continually growing works. The catalogue to hand this month is full of interesting details of all descriptions of wire screening and wire cloths, but perhaps the most improvement noticeable in the present issue, is the table giving the decimal size of the opening as well as the decimal size of the wire, thus enabling any one at a glance to see what to order should he have been using a wire cloth and wants to replace it with something heavier or lighter, which would give exactly the same size of opening. Any one can have a copy of the catalogue on application. The same firm has sent its excellent annual calendar, which shows this year that the works and offices have been greatly extended.

At a meeting of the directors of the Dominion Coal Company held in Montreal last week, it was decided to pay no dividend on common stock at present. The usual half yearly dividend of four per cent on preferred stock was declared payable on Jan 3 1905.

After the meeting the following statement was issued: The full returns for the year will not be received till well on in January, but it is apparent that the earnings for the second part of the year will undoubtedly show very much better than those of the first half.

The directors, however, in view of the large floating dept of the company, consider it to be in the best interest of the property, and an act of prudent management to pay no dividend on common stock at present.

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Particularly Nice Chocolates Our  
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Section of worn Haulage Rope supplied by us to Messrs Outtrim, Howitt and British Consolidated Coal Company, Outtrim, Victoria, Australia, showing condition when taken off and substituted by another Rope of our manufacture. Length 7,260 feet by 4 1/2 inch Dia. made of Special Improved Plough Steel Wire. Working on gradient of 1 in 3 to 1 in 6.

Manufacturers of All Descriptions of WIRE ROPES for COLLIERIES, MINES, CABLE TRAMWAYS

AERIAL ROPEWAYS, TRANSMISSION of POWER, SUSPENSION BRIDGES, ETC ETC.  
Wire specially selected for our Requirements.

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Agents in Nova Scotia:—Wm. Stairs, Son and Morrow, Limited.  
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## SUPERIOR STEAM AND DOMESTIC COAL

SAFE AND CONVENIENT SHIPPING PORT

The Nearest Coal Port to Newfoundland.

Just Inside Entrance Great Bras Harbour

Vessels from P. E. I. and Western Ports, via St. Peter's Canal, will save time by loading at New Campbellton  
...Smooth Inland Navigation Quick Despatch....

- - J. T. Burchell Manager.

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HARBORHEAD STRAID ROAD CROSS	TIMETABLE		Miles	STATIONS.	WAVE ROOPE TRAIN	
	AM	PM			AM	PM
6:10	5:25	1:0	0	Port Tupper	0:55	1:10
10:15	4:05	1:2	1	P. Harkness	0:50	1:05
1:15	4:10	4:7	4	Port Hastings	0:55	1:10
4:15	3:5	8:5	8	Port Hastings	0:55	1:10
4:25	3:15	15:1	15	Port Hastings	0:55	1:10
4:40	10:0	10:0	10	Port Hastings	0:55	1:10
4:52	22:1	22:1	22	Port Hastings	0:55	1:10
5:00	27:0	27:0	27	Port Hastings	0:55	1:10
5:20	22:6	22:6	22	Port Hastings	0:55	1:10
5:25	27:0	27:0	27	Port Hastings	0:55	1:10
5:45	27:2	27:2	27	Port Hastings	0:55	1:10
6:00	44:5	44:5	44	Port Hastings	0:55	1:10
6:11	47:4	47:4	47	Port Hastings	0:55	1:10
6:22	52:2	52:2	52	Port Hastings	0:55	1:10
6:36	56:0	56:0	56	Port Hastings	0:55	1:10
7:00	60:0	60:0	60	Port Hastings	0:55	1:10
7:12	62:2	62:2	62	Port Hastings	0:55	1:10
7:25	65:0	65:0	65	Port Hastings	0:55	1:10

Trains make close connections at Pt. Tupper with all I. C. B. passenger trains excepting the Wave Express which leaves Port Tupper at 7:25 p. m. The following times on line table indicate "W. Wave", "L. Leave", "A. Arrive".  
Canadian Express Company operates over this Railway

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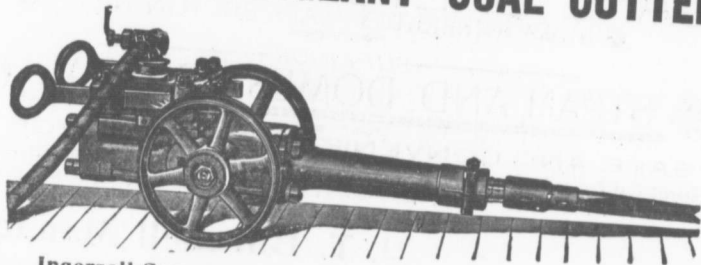
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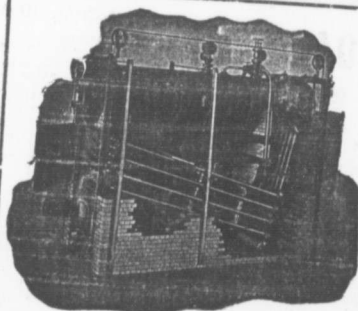
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Rock Drills, Air Compressors  
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Patent Water Tube Boilers  
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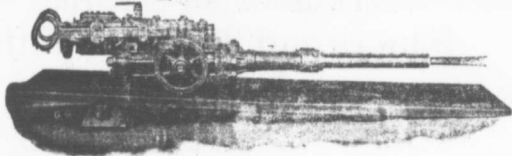
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**STITCHED COTTON DUCK**  
**BELTING,**  
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Halifax, N. S.

## JERSEY - LILY - FLOUR.

*Best all round flour on the market.  
Uniform in quality. Every barrel  
can be depended upon. This flour can  
only be had in Cape Breton at the stores  
of the Dominion Coal Company.*

# COAL MINING MACHINERY



"G G" HARRISON IMPROVED COAL CUTTER.

## HARRISON IMPROVED COAL CUTTERS.

AIR COMPRESSORS  
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LITTLE GIANT STEAM OR AIR DRILLS

MANUFACTURED BY **Canadian Rand Drill Coy Works, Sherbrooke Que.**

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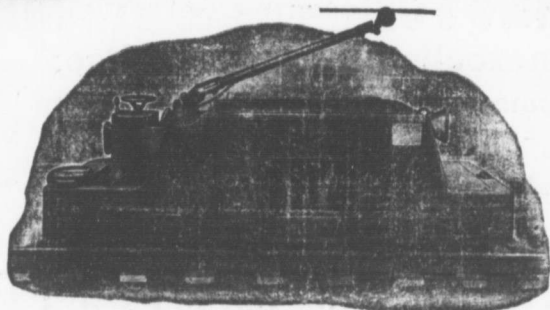
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Electric Locomotives,  
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—Jeffrey 6 M. 10, 2 ton Electric Mine Locomotive. Draw bar plus 500 pounds —  
There are more Jeffrey electric locomotives in use than any other make.

The Jeffrey  
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**The DOMINION WIRE ROPE CO., Limited.**  
Manufacturers of High Grade WIRE ROPE **MONTREAL.**  
for Hoisting, Haulage and Colliery purposes.

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## ACADIA COAL.

*Unexcelled for Steam, Domestic and General Purposes.*

**DELIVERED BY RAIL OR WATER.**

**SHIPPING PORT: PICTOU LANDING.**

Quotations Furnished Promptly on Application.

# MARITIME COAL & RAILWAY CO., Limited,

Miners and Shippers of

## CHIGNECTO HIGH GRADE COAL.

Steam AND Domestic

**Unexcelled for General Use.**

Shipments to all points reached by the  
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# The BROWN MACHINE COY.,

New Glasgow, Nova Scotia.

**Coal and Gold Mining Machinery a specialty**

Endless Haulage Engines, Revolving Tipples, Picking Tables and Complete Screening Plants for the Cleaning and Picking of Coal. Rope Wheels, Pumps, Valves, Shafting, Belting Etc.

**Complete equipments furnished for Coal or Gold mines.**

Screening plants are now in operation at Sydney, Springhill, Broad Cove, Port Hood and Westville Mines

Estimates Cheerfully given.

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**THE BOILER INSPECTION & INSURANCE CO.**

OF CANADA



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Wire Screens for every class of Material.  
Perforated Metal of Steel, Copper, Brass, Zinc, for all purposes. Special attention given to Mines requirements.  
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**MADE IN CANADA.**

**FRESH GROUND  
FIRE CLAY.**

Equal in quality to Scotch Clay. Sold in bulk or in bags  
Our prices are considerably lower than the imported Article.

Write for prices and full particulars.

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MANUFACTURERS AND MERCHANTS SHOULD ADVERTISE IN THE  
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# GOWRIE AND BLOCKHOUSE COLLIERIES,

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OF NEWCASTLE ON TYNE.

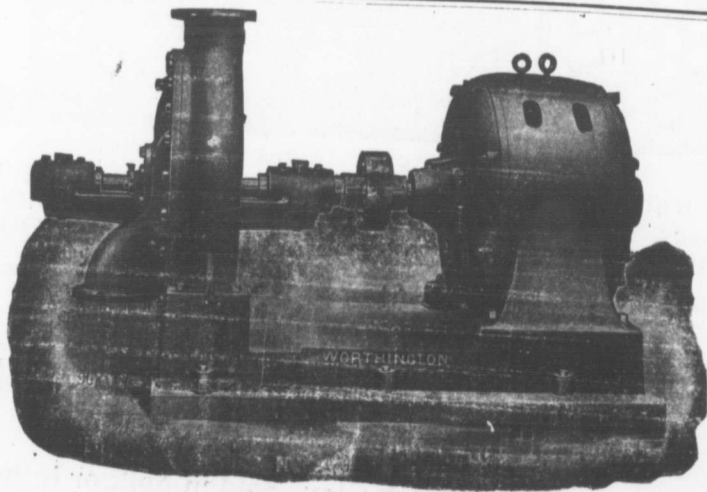
MINE AND LOADING PIERS, PORT MORIEN, COW BAY  
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**Miners and Shippers of GOWRIE COAL.**

The Reputation of this Coal has Steadily Advanced during the past 40 years and the Output of the new Mine is fully up to the old Standard of Excellence.

**Especially designed Piers for the rapid delivery of coal into Vessels by Roe and Bedlington's Patents.**

OFFICES:—Canada, Port Morien, Cape Breton, Nova Scotia. England, Newcastle on Tyne.



**EIGHT INCH SINGLE-STAGE PATENTED Worthington TURBINE Pump**  
Driven by an induction motor. Capacity 1,800 Gallons per min. against 70 feet head.

**THE JOHN McDOUGALL**

**Caledonia Iron Works Co., Limited.**  
Builders for Canada **MONTREAL.** Send for Catalogue.

# Dominion Coal Company, Ltd.

✎ Miners of ✎

Bituminous Coals, the celebrated "Reserve" coal for household use, "International" Gas coal, and the best Steam coal from its collieries on the Phalen seam.

—Yearly output 3,500,000 tons.—

## ANALYSES.

ANALYSES OF GAS AND STEAM COAL MADE BY J. & H. S. PATTINSON, CHEMISTS,  
—NEWCASTLE, ENGLAND.—

	STEAM COAL.	GAS COAL.
CARBON.....	80 18 per. cent.	77 51 per. cent.
HYDROGEN .....	5 11 " "	5 22 " "
OXYGEN ...	7 34 " "	6 72 " "
NITROGEN.....	1 16 " "	1 37 " "
SULPHUR .....	0 56 " "	3 07 " "
ASH.....	2 30 " "	4 10 " "
WATER.....	3 35 " "	2 11 " "
	100 00	100 00

Calorific Power of Steam Coal:—Pounds of Water evaporated from 212 per cent Fah, by one pound of the coal as determined in Thompson's Calorimeter.—14.8 lbs.

Shipping facilities at Sydney, and Louisburg, G. B., of most modern type. Steamers carrying  
—5000 tons loaded in 24 hours.—

Special attention given to quick loading of sailing vessels. Small vessels loaded with  
✎ quickest despatch. ✎

## :: BUNKER COAL ::

*The Dominion Coal Co. has provided unsurpassed facilities for Bunkering Ocean going Steamers with Dispatch. Special attention given to Prompt loading. Steamers of any Size are bunkered without detention.*

*By Improved screening appliances lump coal for Domestic trade is supplied of superior quality.*

✎ Applications for prices, terms, etc. should be made to ✎

**ALEXANDER DICK, General Sales Agent, Glace Bay, N. S. Canada.**

Abner Kingman, Gen'l Sales Agent, for the St. Lawrence, Montreal, P. Q.

M. R. Morrow, Agent, 50 Bedford Row, Halifax, N. S.

Harvey and Co., Agents, St. Johns, Newfoundland.

C. C. Marvel, 95 Milk Street Boston.

Peate Bros. & Company, Charlottetown, P. E. I.

R. P. and W. F. Starr, Agents, St. John, N. B.

A. Johnson and Co., Agent, Stockholm, Sweden.

Hull, Blyth and Co., 4 Fenchurch Ave., London, Eng.

G. M. Stanwood, Portland, Me.

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## RAILWAY AND

# COAL COMPANY.

OPERATING THREE  
THICK SEAMS  
NOS 1, 2 AND 3.

—Miners and Shippers of the Well Known—

# FRESH MINED SPRINGHILL COAL

### ... ANALYSIS ...

	NO 1	NO 2	NO 3
Moisture.....	2.02 %	1.41 %	2.71 %
Volatile combustible matter	18.94 %	27.93 %	28.41 %
Fixed Carbon.....	75.29 %	67.47 %	64.69 %
Ash.....	3.75 %	3.19 %	4.19 %
	100.00	100.00	100.00
Sulphur.....	1.15 %	58 %	.79 %

BEST COAL FOR  
LOCOMOTIVE USE.

Delivered By Rail or Water

BEST COAL FOR  
GENERAL STEAM PURPOSES.

The year Round

BEST COAL FOR  
DOMESTIC CONSUMPTION.

IN Lots To Suit Purchasers.

BEST GAS COAL

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SPRINGHILL

Mined in the Province.

N. S.

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