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# MARITIME MINING RECORD

Dr. R. Bell  
Geol. survey dept.

## COAL AND METAL TRADES JOURNAL

Cumberland. \* Pictou. \* Cape Breton. \* Inverness

New Series Vol. 7 No 4.

August, 24th.

STELLARTON, N. S.

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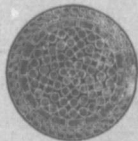
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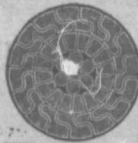
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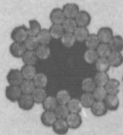
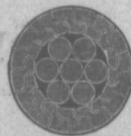
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On and after Sunday, June 12th 1904 trains will run daily, Sunday excepted, as follows:—

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No. 79 Mixed for Trenton .....	6.30
78 Mixed for Hopewell .....	6.55
18 Express for Halifax and St. John .....	7.40
21 Mixed for Pictou Landing .....	7.40
82 Mixed for Pictou .....	7.45
25 Mixed for Mulgrave .....	8.15
19 Express for Sydney .....	10.55
28 Mixed for Pictou .....	11.00
56 Mixed for Truro .....	12.00
30 Express for Halifax and Montreal .....	16.00
142 Mixed for Pictou .....	18.00
88 Express for Sydney .....	18.55
101 Mixed for Pictou Landing .....	16.50
22 Mixed for Hopewell .....	18.10
77 Mixed for New Glasgow .....	18.45
86 Express for Halifax .....	19.45
62 Mixed for Trenton .....	19.40
17 Express for New Glasgow .....	21.15
66 Express for Pictou .....	21.15

—TRAINS ARRIVE AT STELLARTON

78 Mixed from Trenton .....	5.55
82 Express from Pictou .....	10.30
18 Express from New Glasgow .....	7.35
21 Mixed from Hopewell .....	7.35
85 Mixed from Truro .....	8.00
56 Mixed from Mulgrave .....	11.40
27 Mixed from Pictou .....	12.45
19 Express from Halifax and St. John .....	12.45
189 Mixed from Pictou .....	13.25
30 Express from Sydney .....	15.50
86 Express from Montreal and Halifax .....	15.40
22 Mixed from Pictou Landing .....	18.10
77 Mixed from Hopewell .....	18.45
88 Express from Sydney .....	19.25
62 Express from Trenton .....	21.45
17 Express from St. John .....	21.19

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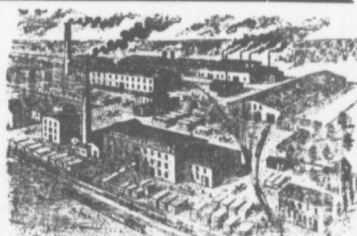
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**OLD MINES "SYDNEY" COAL.**

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Capital, \$300,000.

Output, 1901, 585,000.00

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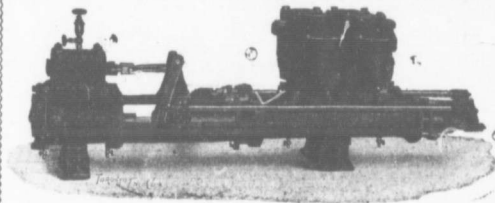
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**Manufacturers of High Grade WIRE ROPE**  
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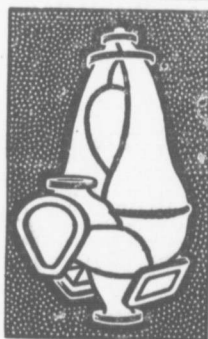
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Having no frictional Parts, the Pulsometer will Pass large quantities of grit etc., and is Invaluable for Sinking Purposes.

For Work Underground it is indispensable.

It has no exhaust Steam, needs no foundations and has no movable parts to get out of order or rust up.

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—SOLE CANADIAN REPRESENTATIVES—

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## HALIFAX, N. S.



70 Ans....  
**MARITIME MINING RECORD**

**Vol. 7, No. 4. Stellarton, N. S., August 24th 1904 New Series**

COLLIERY OFFICIAL'S EXAMINATIONS 1904.

Answers to Manager's Questions by J. W. Marshall, Springhill

**VENTILATOR.**

Ques. 1.—Give the names of the different gases met with in coal mines, and also their symbols and specific gravities?

Ans. 1.—(a) Light carburetted hydrogen, Proto carburetted hydrogen, Methyl hydride, Methane, Marsh gas, Firedamp, or simply "Gas." Symbol C-H<sub>4</sub>. Sp: Gr: .559

(b) Carbon-odi-xide, Carbonic acid gas, Carbonic anhydride, Stythe or so metimes Black-damp. Symbol C-O<sub>2</sub>. Sp: Gr: 1.529.

(c) Carbon-mon-oxide, Carbonic oxide, White-damp, or Sweat damp. Symbol C-O. Sp:Gr: .969.

(d) Sulphuretted hydrogen, Hydrogen sulphide, or Stinkdamp. Symbol S-H<sub>2</sub>. Sp: Gr. 1.129.

Ques. 2.—What height of cap will show on the light of a safety lamp, containing 1 part of gas to 18 of air, 1 part of gas to 20 of air, and 1 part of gas to 25 of air?

Ans. 2.—The following is for an ordinary cased Davy lamp burning a mixture of colza and petroleum, and with a  $\frac{1}{2}$  inch flame.

$$(a) \frac{100}{16} - \frac{5}{19} = 5\frac{1}{2}\% \therefore \text{cap will be above 3 inches.}$$

$$(b) \frac{100}{21} - \frac{4}{21} = 4\frac{1}{2}\% \therefore \text{cap will be about } 1\frac{1}{4} \text{ inches.}$$

$$(c) \frac{100}{26} - \frac{3}{13} = 3\frac{1}{2}\% \therefore \text{cap will be about 1 inch.}$$

With a Clowes detecting lamp the oil flame being about 1-10th of an inch high the caps would be 2½ inches, 1½ inches, and 3-5 of an inch respectively.

Ques. 3.—How would you light a furnace fire in a mine where the temperature outside is 90° and the temperature inside is 60° the furnace being built at a point 100 ft. higher than the intake opening; explain fully.?

Ans. 3.—It is easy to see that this is a case of natural ventilation, and it does not require any calculation to prove that the air is passing down the furnace shaft into the mine.

If the furnace was lighted under such conditions the products of combustion would pass into the mine instead of ascending the shaft. Some means must therefore be adopted to destroy the motive column producing the natural ventilation

and bring the current to a standstill first, and then start it in the contrary direction.

The best way to do this would be to use what is known as the "fire lamp." This is a large iron cage, or basket shaped receptable which can be suspended, by means of chains, in the shaft. A fire is lighted in the lamp and allowed to burn for a while until it is glowing bright and clear, giving off little smoke. The lamp is then lowered into the furnace shaft and it heats up the air sufficiently to first bring the current to a standstill and finally start it in the proper direction—i. e. passing "up" the furnace shaft. The furnace fire can then be lighted and its heat will strengthen the current and maintain it. This method is often adopted under similar conditions in the metal mines in England

Ques. 4.—An airway 6 ft. by 8 ft. and 2000 yards long is passing 28,800 cubic feet of air per minute with 15 horsepower. Find the coefficient of friction and water gauge. Give the formula and work out each in full.?

Ans. 4.—By Atkinson's well known formula

$$P = \frac{KSV^2}{A}$$

$$\therefore P = \frac{CSQ^2}{A^3}$$

but  $\frac{\text{pressure} \times \text{quantity}}{33000} = \text{horsepower.}$

$$\therefore P = \frac{33000}{a^3 \times 33000} KSV^2$$

$$\therefore 15 = \frac{KSV^2}{a^3 \times 33000}$$

$$\therefore \frac{15 \times a^3 \times 33000}{S \times V^2} = K$$

$$\therefore K = \frac{15 \times 48 \times 48 \times 33000}{28 \times 2000 \times 3 \times 28800 \times 28800 \times 28800}$$

$$\therefore K = .00000013 \text{ lbs per square ft.}$$

In the above formula P = pressure in lbs per sq ft.

" " " S = rubbing surface in sq ft.

" " " V = velocity in ft per min.

" " " Q = quan. in cubic ft per min.

" " " A = area in sq. ft.

" " " K = coefficient of friction.

$$(b) P = \frac{KSQ^2}{a^3}$$

$$\therefore WG = \frac{KSQ^2}{a^3 \times 5.2}$$

$$\therefore WG = .013 \times 28 \times 2000 \times 3 \times 28.8 \times 28.8 \div 48 \times 48 \times 48 \times 5.2$$

∴ WG = 3.15 inches.  
In this case K and Q are both in thousands of ft per minute.

By the ordinary formula

$$WG = P \times \frac{33000}{\text{quantity} \times 5.2}$$

$$\therefore WG = 15 \times \frac{33000}{28000 \times 5.2}$$

∴ WG = 3.30, inches.

Answers (Coefficient = .000000013 lbs per sq. ft.  
(WG = 3.15 inches, or 3.3 inches.

Difference of WG due to coefficient now being worked far enough out.

Ques. 5.—In a mine worked by the pillar and room system it is found difficult to keep the far off districts clear of gas; when the regulators of the short districts are nearly closed the faces of the districts are no better. What is the cause and how would you remedy it?

Ans. 5.—The air ways are too small to pass sufficient air for the far off districts, and therefore the closing of the regulators on the short splits has little or no effect.

I would enlarge the area of the airways, or endeavour to lessen the friction by adding more splits. The latter would really be enlarging the area available for the current to pass and would considerably lessen the friction if splits could be made so as to shorten the distance which part of the quantity has to travel.

Increasing the area of the airways might be an expensive undertaking, but not so expensive as increasing the power, because the quantity only increases in proportion to the cube root of the power applied.

Ques. 6.—An airway measuring 7' x 7' = 49 sq ft is passing 30000 cubic ft of air per minute with a pressure of a pound per sq ft. We enlarge the area to ninety square ft, the form still remaining square, what quantity will now pass the pressure remaining the same, will the velocity be increased or diminished in the larger section?

Ans. 6.— $\sqrt[3]{90} = 4.48$  ft square.

$$\therefore \text{perimeter of large airway} = 9.489 \times 4 = 37.944 \text{ ft.}$$

perimeter of small airway =  $7 \times 4 = 28$  feet.  
Relative quantity is found by the formula

$$R = \sqrt{\frac{A^3}{S}}$$

A = area in sq. ft.

S = rubbing surface in sq. ft.

R = relative quantity.

Length remains unaltered therefore I will substitute perimeter for rubbing surface in the formula.

$$R = \sqrt{\frac{A^3}{\text{Perim}}} \quad \text{Large airway.} \\ = \sqrt{\frac{90^3}{37.944}} = \sqrt{\frac{90 \times 90 \times 90}{37.944}} \\ = \sqrt{19212.52} = 138.6$$

$$R = \sqrt{\frac{A^3}{\text{Perim}}} \quad \text{Small airway.} \\ = \sqrt{\frac{49^3}{28}} = \sqrt{\frac{49 \times 49 \times 49}{28}} \\ = \sqrt{4201.75} = 64.8$$

Then

$$\text{As } 64.8 : 138.6 :: 3000 : X$$

$$X = \frac{138.6 \times 30000}{64.8}$$

∴ Increased quantity = 64000 cubic ft. approximately.

Velocity in small airway =  $\frac{30000}{49} = 611$  ft. per min approximately.

Velocity in large airway =  $\frac{64000}{90} = 711$  ft per min. approximately.

∴ Velocity is increased about 100 ft per minute in the larger area.

Ans.—New quantity = 64000 cubic ft per minute (approximately.)

Velocity is increased about 100 ft per minute in the larger area.

Ques. 7.—In which workings of a mine is the greatest pressure required for the removal of firedamp.

Ans. 7.—In the rise workings. Fire damp, next to hydrogen is the lightest substance known, and owing to its extreme lightness it floats near the roof, making its way to the highest points of the mine. Air is twice as heavy as firedamp and it is a fact, which is well known, that air falls easily to the dip but has to be forced to the rise, owing to its weight. Thus we have two conflicting conditions in rise workings, viz.—heavy air unwilling to go up, and light gas unwilling to come down, and it is easy to understand that considerable pressure will be required in rise workings to keep a sufficient current of air sweeping the faces and diluting and removing the firedamp. The greater the degree of inclination the greater will be the pressure required to keep the rise working clear.

Ques. 8.—What is the object of splitting air in mines.

Ans. 8.—The chief object is to supply each district with a current of fresh air, instead of coursing the vitiated air from one district into another. This increases the safety of the mine and lessens the anxiety of the management, because:—

(a) The ventilation of each district is to a certain extent independent of the other districts, and should a fall block the airway in one, the others will benefit rather than otherwise.

(b) There will be fresh air on the main haulage roads and travelling roads of each district.

(c) Wood doors on main haulage roads are dispensed with, and fewer doors are required through out, although more air crossings are required.

(d) Gases given off in one district are not carried into any of the others; therefore there is less danger of explosion.

(e) Should an explosion occur in one district, its effects may not extend to the others.

(f) The composition of the air is more uniform throughout the mine and, except in the first working places, the temperature of the mine is somewhat reduced.

(g) Each separate district is considered a separate mine under the Mines Act, a fact which carries several advantages with regard to shooting and inspection.

The second object, and one which is just as important as the first is to obtain the greatest pos-

Continued on page 17.

## -:- 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.  
Advertising rates, which are moderate, may be had on application.  
Subscription \$1.00 a year. Single Copies 5 cents.

R. DRUMMOND, PUBLISHER.

STELLARTON, N. S.

August 24 1904



The Cape Breton Enterprise makes the assertion that the punishment meted out to offenders is in too many instances out of all proportion to their crimes. A paltry offence is heavily punished while a grave offence is lightly passed over. This agrees with a remark that I heard when in Cape Breton a month or two ago. A deed had been done which sent a thrill of horror through the country. The day after its commission one of a group of persons made the remark, and no one who heard it objected to it as extreme, that soon there might have to be lynch law in C. B. as it was becoming notorious that no jury could be found to convict a person of the most serious of crimes. And the remark, so far as the case under discussion went, turned out a prophecy. To the surprise of even those who thought justice was too often travestied the one who did the deed was acquitted by the jury. No extenuating circumstances could warrant any jury in returning a verdict of not guilty. It is true that in too many cases which have happened in C. B. in recent years juries through sympathy or through cowardice have failed to return verdicts in accordance with the evidence. Is there justification for the remark of one, which appeared in a C. B. paper to this effect, that he hoped never to be a man slayer, but if it should so happen that he killed any one he hoped it would be in C. B. as then there would be no fear of swinging for it.

The Halifax Herald of a late date has the following as coming from Sydney mines.

"What is the matter with the local industry? Not for many years has there been such a wide spread feeling of unrest among the miners and the working class as is the case to-day, in fact many strong robust men are unable to get employment and those employed are earning twenty five per cent less wages this season than in years past. The rate of wages has not decreased but the opportunities to earn the wages as a result of idle days deprives the miner of regular employment and the loss is equally as great as if he was working at a reduction of 25 per cent. . . . Is it over production on account of the opening up of new colli-

ies." The true answer was foretold three years ago and repeated in 1902 and 1903. It is scarcely overproduction: it is over crowding. There are more miners at Sydney Mines to day than there is full employment for, and that such a state of things exists is no fault of the management but wholly that of the inactive and indiscreet among the workmen. Two years ago, the managers of the mines, with tears in their eyes, to fall into the language of the day, besought the men to work more steadily, and not lose, taking it all over, an average of over 30 per cent of work per month. And the RECORD in season, and, as some imagined, out of season, repeatedly shouted amen to the managers petition, and endeavored to show that the great loss of time would in the near future work most disastrously for the men themselves. It was like speaking to stone walls. Many of the men, too many, determined to eat and drink, more especially drink, if they were to die for it 'metaphorically' in a year, or two at the most. On the 13th of August of last year I wrote in the RECORD as follows: "I am no alarmist, and far from being a pessimist. The fear of being called unpatriotic does not jar me, so therefore I ask the men around the collieries to have a care. Trade is brisk now, but I am not sure it will continue this way much longer. In a year or so, I fear, we shall see the supply of men fully greater than the requirements." The men did not take a care, and as predicted,—the Herald statement taken as correct—there are now more men than needed. The pity of it is that the men who were indifferent to steady work, when it could be had, are not the only ones likely to suffer, but the good men and industrious will also be punished. The RECORD advised the lodges to take up the matter, but I fear this was not done, or if done only in a half hearted way. It may be that it is too late to apply a remedy, but it might be well for the men at the collieries to make arrangements with the managers, the former pledging themselves to work steady, provided the latter will not hire new men, or fill up the places of any who may leave. Of course the workmen must have holidays, by arrangement with their employers like other people, aggregating two or three weeks each year, but there is no sufficient reason why they should extend their holidays into two or three months, when totalled up.

And again if there are too many men now, the workmen are to blame from another standpoint. The way some of the miners' examining boards grant certificates amounts to a scandal. In many cases certificates are granted to men who are not entitled to them. I have heard of some bad cases lately. I am told of a score or more of certificates being granted to men who could not speak English. How were these men examined? Better that the law be abrogated than that it be made a farce of. If the men who are on the board are tempted by the fifty cent fee, chargeable for a certificate, then the fee must be no longer a perquisite of the examiners; the fees must go to the mines department while the department pays the members of the board a fixed yearly salary. If the workmen are content to allow matters to go on as they have been going no outsider need get worried about it, but let the workmen not complain about idle time through over crowding.

If the merchants are doing less business it must be due also to over crowding, for it is a fact that more money is being distributed this year than in either

1901, or 1902. The sales of coal show this must be the case. In July 1901, the sales were 18,000 tons, 21,000, 1903, 34,000, and 1904, 40,000 tons. More than twice as much was paid in wages at the mines this July than July 1901, and within a thousand dollars of both amounts paid in July 1901, and 1902. So I cannot see how things can be so much worse than for many years past. There is a difference I admit between the wages paid in 1903, and 1904, of say \$20,000 which is not by any means accounted for by the fact that July '04 sales were 4000 tons less than July '03. That quantity should make a difference of not more than \$5000. I am forced to the conclusion that the improved appliances introduced of late years are now tending to a largely reduced labor cost. This for a time may adversely affect the mines labor market, but must ultimately prove beneficial to the workmen as to the shareholders, for it is a fact that machinery, instead of lowering raises the status of the laborers.

\* \* \*

Will some of those who went up for examination at the last meeting of the 'Board,' or some of those who did not go, have a look at question No. 2, Mines Regulation Act, and Mr. Marshall's answer thereto, and say what they see wrong. I wonder if No. 2 is a catch question intended to trip the unwary. If given in good faith then it is our turn to trip the examiners. Suppose the question was put to me: "What are the duties of a night examiner," would it be impertinent if I looked at the Chairman and said, "I don't know, do you?" Would that be more courteous than brisly to say, "He has no duties, for there is no such person in the Mines' Act." The Chairman might reply, "Oh you are too sharp, what are the duties of an examiner?" to which I would have a right to answer, "Oh, that is a horse of a different color." Mr. Marshall's answer raises a point. He says an examiner must hold a certificate as manager, underground manager, overman or shot-firer. I'll pass over shot-firer, as the act admits these under certain conditions, but can a man with a managers certificate act as examiner? My own answer would be "yes," as what the law says can be done by one magistrate, can surely be done by two; but why, was the word 'manager' omitted from the Act, which reads "holds a certificate as underground manager, overman or examiner". These are simple questions for hot weather.

\* \* \*

A word or two with a New Glasgow correspondent of the Monetary Times who, after naming the several plants of the Nova Scotia Steel and Coal Co., says:—"Of these I am in a position to say that the only one paying to-day is the coal mine at Sydney Mines. The blast furnace at Ferrona is closed down for good representing a loss of about a \$1,000,000; the coal mine at Coalburn, on which over \$500,000 has been spent, is now known to all insiders to be practically worthless, while the steel plant at New Glasgow is barely earning the interest on the bonds and preferred stock" and as a climax the correspondent further adds "In my opinion the greatest asset the company had was Graham Fraser"

If my present writing was more of a criticism than an effort to state some plain facts, I might point out inconsistencies in the correspondent's statement, or, perhaps I should say, his inference, which is that the company cannot afford to pay more than 2% dividend on its common stock. For instance he says, positively, that the Sydney Mines coal plant is the only one that is paying to-day—and thereafter admits that the steel works at New Glasgow are earning enough to pay the interest on the bonds and preferred stock. If the Sydney Mines coal plant is the only one that is paying,—paying well I suppose is meant, or in profits leaving the steel plant behind,—To what are the profits to be applied? Surely to the common stock, seeing the steel plant takes care of the interest on the bonds and preferred stock. However, let that pass while I confine myself to what is said about the coal mines, a subject on which I can talk with some freedom, and on which I am not disposed to take back water from any one, be he insider or outsider. When the coal mine at Coalburn is referred to as "now worthless" what is meant to be implied? That it was worth something four years ago and is valueless to-day? The very reverse is the case. To-day Coalburn is a more valuable asset than it was four years ago. Why? Because at that time it was thought that a fault ran across the measures at 1800 feet from the surface, while the fault was not struck till the slope had attained a length of 2400 feet, thus giving 400 feet more area of coal than was thought to exist when development work started. I grant that the coal on the east side of the mine is not retaining its height, but on the west side it is improving both in height and quality. Can a mine be called worthless that is good for an output of 50,000 tons for twenty years? Some put its life at thirty years, but I am inclined to be conservative. If the Marsh Mine is not now paying, and paying fairly well, under the economical management of Mr. McIntosh, then I am prepared to say there is not a mine in Nova Scotia that is a dividend payer. I should judge that the mine at Coalburn is producing as cheaply as the average of the Dominion Coal Coy's mines, or, to be more exact, at not a cent more than \$1.10 cts. in cars at the mine. Add to this, royalty, freight, general expense,—and the interest on even the extravagant alleged fixed charge of \$500,000, and the net price of the coal to the company is twenty cents per ton less than they could buy at wholesale, and \$1.25 per ton less than it can be purchased for by general consumers in the coal producing county of Pictou. But if the expenditure at Coalburn is placed at \$250,000,—almost a fabulous sum,—the coal costs the company fifty cents less than they could buy coal in the market. Were I forced to accept the statement that \$500,000 had been spent at Coalburn, I would be forced to assert that juggling with figures was no new science, and that the Sydney steel people were not the discoverers of the easiest way to dispose of vast sums of money, and erase all traces of where it had been expended. If, in the view of the Monetary Times correspondent, Coalburn is not looked upon as a paying investment, with a clear profit of from twenty to fifty cents a ton, while, also in his view, Sydney Mines is paying, am I not justified in placing the profit from Sydney Mines at seventy cents a ton. I am content to place it at sixty cents, which would give on the sales for the year, say 450,000 tons, a profit

of \$270,000, all available for common stock dividend. Whether the area at Wabana, retained by the company, is as good or not as that disposed of to the Dom. I. and S. Coy, is little to the point. The fact remains that Wabana paid well last year, and will pay well this year and for many years to come. In noticing the correspondent's assertion that Mr. Graham Fraser was the chief asset of the Nova Scotia Steel & Coal Coy, I may be treading on delicate ground, but justice compels me to refer to it. What I said on a former occasion, I still say, namely, that as an engineer, Mr. Fraser has no superior in Canada; yet it is no disparagement to say that with Mr. Thomas Cantley managing the steel end, and Mr. Harvey Graham the coal end of the business, the affairs of the company are as—not to say more—intelligently, efficiently and economically conducted as ever they were, or let me say, as it is possible they ever can be. As proof that Mr. Fraser was not looked upon as the only, or greatest, asset of the company by those who should know, it is sufficient to point to the fact that one, still a member of the executive of the Nova Scotia Steel & Coal Co., was solicited to take the position now so well filled by Graham Fraser. I assert, confidently, that the plant at Coalburn did not cost \$190,000, part of which has already been written off. And further that there does not remain to be written off for the closing of the Ferrona plant, a sum amounting to \$100,000, for the directors knowing that when the Sydney plant was ready Ferrona must close, have already written off practically its whole value. If these statements are challenged I am content that appeal be taken to the auditors of the Coy. By the way, there are those who suspect that a Halifax stock gambler knows more about the letter to the 'Monetary Times' than any man in Pictou Co.

If Mr. Chamberlain is ready for an election those opposed to his propaganda are eager for it. The Oswestry election was a snatching defeat for the protectionists, the worst they have yet got, for it was an agricultural district, where, if anywhere, taxation of food for the benefit of the British farmer should be a winning card. The fiscal question was brought to the front place. The Unionist was a 'whole hogger,' and his opponent an out and out free trader. The result was a staggering blow to the Unionists and was a surprise even to the liberals, who did not expect more than to reduce former big conservative majorities. However the seat, which was always conservative, is now liberal, and that by a majority of over 300; and on the 10th of this month the liberals won another seat, North Lanark, even though the fight was a three cornered one. Since 1901 the seat has been try as the labor party in that year split the liberal vote. There was a labor candidate this time also but the liberal candidate led his Tory opponent by 1,000 and the labor candidate by 2,000 votes.

Parson blowers are to be installed at Dom. No. I. and sludge pockets put in, so that the refuse of the Port Morien washer may be utilized. This beats the Chicago Stock yards where every part of the animal is turned into money, as the stone which has been blackened by contact with the coal is to be used as fuel for the boilers.

#### CAPE BRETON COAL IRON AND RAILWAY CO.

The control of the Cape Breton Coal, Iron & Railway Co., Limited, has been taken over by an English syndicate, headed by Mr. Horace Mayhew, and Messrs. Coates Sons & Co. of London. Mr. Thos. Lancaster to whom the credit is due of carrying negotiations to a successful issue went to London twice last fall to meet Messrs. Coates Sons & Co., and has been conducting negotiations with them ever since. The spring of this year he invited Mr. Horace Mayhew to join. Messrs. Mayhew and Leech are large coal owners and operators in England, and control collieries there having an output exceeding 2,000,000 tons a year. Mr. Lancaster has known Mr. Horace Mayhew since boyhood, and it was at one of his collieries in England that Mr. Lancaster learned the coal business.

The new directors are:—Horace Mayhew, President, Thomas Lancaster, Vice President, and G.M. Wm. Hanson, (Hanson Bros. Montreal) Treasurer. E. W. Moseley, Secretary, and Messrs. Gladstone, Thompson, C. H. Hanson of London, N. Ferguson and Crowe of Sydney. Mr. Lancaster had pretty hard work in carrying the proposition through, and values the services of Mr. P. Neville who went over the ground personally with Mr. Mayhew, and together they traced the continuity of the seams; no one knows this seam as well as Mr. Neville.

At the present time the company is working two shifts of miners, and have a force altogether on the surface and underground of over 30 men.

Plans are being prepared now in England at the office of Messrs. Mayhew & Leech. The equipment will be ordered as soon as the plans are completed, and if the weather holds good it is expected to have Air Compressors, Screens, Boilers etc, erected, a short Railway siding between the Sydney & Louisburg Ry., and the mines under rapid development by the first of the year.

### Intercolonial Railway.

#### TENDER FOR STATION.

Sealed tenders, addressed to the undersigned and marked on the outside "Tender for Station, Macaan" will be received up to and including

THURSDAY, THE 25TH DAY OF AUGUST, 1904,

for the construction of a station building at MACAAN, N. S. Plans and specifications may be seen at the Station Master's office, Macaan, N. S., and at the office of the Chief Engineer, Moncton, N. B., where forms of tender may be obtained.

All the conditions of the specification must be complied with.

R. I. W. Office  
Moncton, N. B.,  
25th August, 1904.

D. POTTINGER,  
General Manager.

### Intercolonial Railway.

#### TENDER FOR QUAY WALL OF CRIBWORK.

Sealed tenders addressed to the undersigned, and marked on the outside "Tender for Quay Wall, Halifax, N. S." will be received up to and including THURSDAY, the 25th Day of August, 1904, for the construction of a Quay Wall of Cribwork at Halifax, N. S.

Plans and specifications may be seen at the office of the Terminal Agent at Halifax, N. S., and at the Chief Engineer's office, Moncton, N. B., where forms of tender may be obtained.

All conditions of the specification must be complied with.

Railway Office,  
Moncton, N. B.,  
August 4th, 1904.

D. POTTINGER,  
General Manager.

## AROUND THE COLLIERIES.

A fan has been erected at the new slope New Campbellton and the results are satisfactory.

There are many buildings going up at Sydney No. 3 besides the double houses for workmen.

The coal heap at Sydney Mines is being gradually filled away, though a fair quantity yet remains.

Though outputs at the collieries in a majority of cases are being fairly well maintained, there is no rush as was the case in 1901, and 1902.

Sydney Mines has been lighted with electricity since the beginning of the month, and everybody is pleased, as more light was much needed.

The length of slope at the Minudie Mine opens up a field of coal calculated to contain 300,000 tons, equal to three or four years work without further development.

Contractor Sutherland is pushing matters in connection with a water system for Sydney Mines. This will be another boon to the inhabitants when completed.

The south lift in the third seam, Albion Mines, has been completed and levels are being driven, soon there will be places for the men who are over crowded in certain sections of the mine.

Deputy Inspector Nicholson visited New Campbellton lately and expressed himself as well pleased with the manner in which development work was being carried forward, and the condition of the mine generally.

The Minudie Coal Co. has given token, that it is a live coal producing concern, by falling into line and becoming an advertising patron of the RECORD. The company should get along all right, and add to its output and its profits.

The Colliery of the Minudie Coal Co., at River Hebert is well equipped. There are many modern appliances including picking tables, elevators rotary tipples. The necessity of filling slack into cars by hand is obviated by a simple yet effective contrivance.

For six or eight weeks previous to the 9th. inst the Barometer readings at the Albion Mines showed abnormal steadiness. During all that time the readings have remained, what may be almost termed stationary, at 30.12 to 30.18.

Work is going on smoothly at the several collieries Sydney Mines, and an average output is maintained. As soon as the blast furnace is in operation there will of course be an increased demand for coal.

The Acadia Coal Coy. by notice, thanked all who had assisted in fighting the fires surrounding the mine on Sunday the 7th inst. and which for a time looked ominous and threatened to attack not only the surface works but the mine. The fire got into one or two filled in former openings, one of them the old cage pit furnace shaft, and another that had been used for hoisting coal by windlass, to supply the coke ovens, after the explosion in 1880.

The ten workmen's houses being built at Sydney No. 3 are not being erected by the Nova Scotia Steel & Coal Coy., but by a construction company with a separate organization. The interest on the stock of the construction company is, however, guaranteed by the Steel Coy.

All of the hand pick miners in Sydney No. 2 have been stopped, and several pairs at Sydney No. 3. The numerous machines in Sydney No. 3 make it possible to dispense with the service of a number of pick miners. There are at present twenty-five machines at work in Sydney No. 3.

At the inquest on the body of the young man McDougall, killed by a fall from the roof while working his way out of Sydney No. 3, the jury have returned a verdict in which they hold the management at fault. While accidents from falls of roof are not uncommon in working places, the cases are rare in which a workman met death in a manner similar to the case stated.

Work at New Campbellton is progressing favorably. The Algerine took her second cargo a fortnight ago for the Powder Coy, who are prospecting on the Labrador coast. These people have found the coal satisfactory and it is likely the Algerine will take a third cargo next month. She was loaded in twenty four hours which was not bad all things considered.

The No. 2 Allan shaft is down a distance of say 250 feet, and for nearly that distance is well lagged and timbered. The No. 1 shaft is down say 200 feet. The biggest obstacle yet encountered to steady sinking, and it was not serious, was a bed or layer of sand and gravel. A few days ago the unpretentious looking circular saw at the works, cut about 25,000 feet of lagging into 4 ft. 10 lengths in a shift.

On some water being thrown on the ground at a spot northerly from the McGregor pit it was noticed that steam rose in greater volume than was to be expected from the smouldering goss or moss. On investigation it was found that heat was coming up from below through a filled up small shaft. This to the mind of the management affords proof that the Cage pit, which was thought to be free from fire, is still burning.

The slope of the Minudie Coal Co. is down 1200 feet. There are now three lifts exclusive of the 500 ft level. The west level of the 800 feet lift is now extended a distance of 750 feet and with 12 working places; the east level is in 600 ft with eleven working places. At 1000 feet the west level is in 800 and has six places and on the east 300 feet with four places. The driving of the levels on the bottom lift is now being proceeded with as the water is all out of the mine. There are a total of thirty nine working places in the mine exclusive of the lower levels. The number of places is sufficient to accommodate over 100 miners, but that number may be difficult to obtain for lack of house accommodation.



## AROUND THE COLLIERIES.

If matters mature as presently planned, Sydney may have more than one co-operative store.

The Gowrie and Blockhouse Co. has a new set of underground officials. Mr. Nearing, formerly of Dom. No. 3, is in charge by day, and Duncan McDonald, of Sydney Mines, by night.

From the Glace Bay Gazette's ballot for the most popular man for labor candidate it transpires that the voters are not a unit on the point that a workingmans candidate should be a workingman—in the common acceptation of the word. There were ballots cast for two lawyers, a newspaper writer, a boss printer and a store manager though the large majority voted for G. Secy, Moffatt and Stephen McNeil.

There have been several fatal accidents at the collieries since August began. A young man named McDougall was killed by a fall of stone on the trolley road of Sydney No. 3: a miner named A. Foster met with a shocking accident at Springhill, which proved fatal, and a miner named John Roy, was instantly killed by a fall of coal from the rib while drawing a pillar at the Albion.

The reports submitted at the annual meeting, held lately of the Minudie Coal Co. were considered highly satisfactory and encouraging, and the prospects for the ensuing year are particularly pleasing. Last year the company earned a fair dividend on the total of its capital. The company is somewhat handicapped by the high transportation charges. The distance from the mine to the I. C. R. is say eight miles and the company has to pay to the Canada Ry. & Coal Co. at the rate of five cents per ton per mile, a most excessive rate. To send a ton of coal to St. John costs \$1 40. The company will likely build a seven mile long railway to tide water, by which the charges would be cut in two. The company which at present sends about eight thousand tons a year to St. John could dispose of three or four times that quantity if there were water connection.

A writer in a Cape Breton paper is very much put out that the government has never done anything for the colliery officials and the numerous ambitious young men who have worked hard for and succeeded in securing certificates qualifying them to assume positions as officials. He admits in a half hearted way that the workingmen have had occasional favors. Well why should it be expected that the government should have done something for the officials. Is it not an accepted axiom that 'Heaven helps those who help themselves' and is it not a frequent saying that if a thing is not worth asking for it is not worth bestowing. Have the officials asked for anything? But what can they want anyway? Are they not now little cocks of the walk in their respective positions at the collieries, and clothed with lesser or larger emblems of authority. If they really want anything let them formulate their demands. If these be reasonable there is no doubt the government will not be deaf.

Pres. Ross is a splendid hand at bringing out the sprinting abilities of his subordinates.

The placing of the collieries on single shift has caused a surplus of men at the C. B. collieries.

The output at Dom. No. 3 is up to 1300 or 1400 single shifted. Mr. McInnis has begun splendidly.

Reserve is now the only colliery on double shift, as Dom. No. 1 was to go single shifted on Monday last.

Big coal is now all the cry at the collieries of the Dominion Coal Co. Not so many years ago it was coal only.

Of Port Hood, Chignecto, and some other collieries, it may be said they are not a bit too busy of late, from one cause or another.

The north side of Dom. No. 1 will soon be adding its quota to the coal output. Two landings and the deeps are to start immediately.

Mr. Norman McDonald has been re-elected check-weighman at Dcm. No. 3. Yearly elections are a nuisance. A man should be removed only for cause.

The International is short of water and all are praying for rain, and so at Dom. No. 2. If copious rains do not come soon there will be a water famine sure.

Work at Minudie in July was hindered from want of cars. The supply has been steadier of late and August should make a better showing.

It is anticipated that the affairs of the Canada Coals and Ry. Co. will be arranged by the 16th. Sept. It is to be hoped means will be devised to give the workmen their back wages.

Messrs. Ross, Duggan, Donkin, King, and McVey lately inspected operations at Dom. No. 6. As Pres. Ross and Mr. McVey came back smiling it is surmised that matters at No. 6 are progressing satisfactorily.

Owing to a shortage of cars at times at the Hub the men are seeking work at the other collieries. They say they cannot get their coal out. At International it is all the other way, the trouble is to get it mined.

The crop coal of the Cochrane Lake Co. comes out in great chunks. The slope is down 100 feet and they are driving across hill. Louisburg is by far the nearest shipping port, and will no doubt be selected by the Company.

The main slope at the Reserve is about ready to stop as nearly all the coal has been taken out. No. 9 landing in this slope crushed lately but as it was nearly finished anyway it was considered best to take out rails, pipe, etc.

The Grand Council of the P. W. A. meets in Truro on Sep't 8th. The number of delegates, it is expected, will exceed in number that of any previous year. The labor candidate question may not be discussed at any length as the movement is confined only to C. B. county, and is not looked upon as a purely P. W. A. movement.

## Coal Shipments June 1904.

## DOMINION COAL COMPANY, LTD.

—Output and Shipments for July 1904—		—Shipments—
—Output—		
Dominion No. 1	33,704	294,872
Dominion No. 2	47,273	
Dominion No. 3	30,845	
Caledonia	43,816	
Reserve	65,517	
International Hub	21,083	
	17,117	

Shipments for July 1903	294,872
	273,250
Increase " " 1904	21,622
Shipments 7 mos. 1904	1,513,387
" " 7 " 1903	1,652,325
Decrease 7 " 1904	138,938
Shipments to U. S. July 1904	37,850 tons

## CUMBERLAND RAILWAY &amp; COAL CO.

Shipments July 1904	36,394 tons
" " 1903	31,010 "
Increase " " 1904	5,384 "
Shipments 7 mos 1904	240,937 "
" " 7 " 1903	261,448 "
Decrease 7 " 1904	20,511 "

## ACADIA COAL CO.

Shipments July 1904	20,435 tons
" " 1903	30,449 tons
Decrease " " 1904	10,014 "
Shipments 7 mos 1904	143,532 "
" " 7 " 1903	199,423 "
Decrease 7 " 1904	55,891 "

## INVERNESS RY. &amp; COAL CO.

Shipments July 1904	13,754 tons
" " 1903	16,224 "
Decrease " " 1904	2,470 "
Shipments 7 mos 1904	98,423 "
" " 7 " 1903	75,799 "
Increase 7 " 1904	12,624

## NOVA SCOTIA STEEL &amp; COAL CO.

SYDNEY MINES.		
Shipments July 1904	40,519 tons	
" " 1903	44,432 "	
Decrease " " 1904	3,913	
Shipments 7 mos 1904	213,054 "	
" " 7 " 1903	195,953 "	
Increase 7 " 1904	17,101	

## MARSH MINE.

Shipments July 1904	3,796 "
" " 1903	3,523 "
Increase " " 1904	273 "
Shipments 7 mos 1904	34,83
" " 7 " 1903	28,619 "
Increase 7 " 1904	5,264 "

## INTERCOLONIAL COAL CO.

Shipments July 1904	20,609 tons
" " 1903	17,891 "
Increase " " 1904	2,718 "
Shipments 7 mos 1904	142,377 "
" " 7 " 1903	132,319 "
Increase 7 " 1904	10,058 "

## MINUDIE COAL CO.

Shipments July 1904	2,990 tons,
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**BAULD BROS. & Co.**  
**WHOLESALE GROCERS.**  
*Successors to* **BAULD, GIBSON & CO.**

HALIFAX N. S.

ESTABLISHED 1816

HALIFAX, N. S.

**Staple & Fancy Groceries Tea a Specialty.**

sible quantity of air for the least possible expenditure of power.

Splitting the air shortens the distance which the air has to travel thereby the amount of rubbing surface is lessened. Thus the resistance is lessened because the resistance varies directly as the rubbing surface.

Again by splitting the air we increase the area available for the passage of the current and thus the resistance is again lessened because the resistance varies inversely as the area of section.

Thirdly, by splitting the air we lessen the quantity in each airway because our total current is divided in several smaller ones. Thus we lessen the velocity and therefore the resistance because the resistance varies directly as the square of the velocity.

From this it is easy to understand that since we lessen the resistance and still keep up the same power, we will have an increased quantity of air.

However the advantage obtained depends on the way the splits are arranged. Too much splitting makes the air velocity too feeble, and should the splits be too unequal in length etc, there will be considerable pressure expended in overcoming the resistance of the regulators. The more equal the splits the greater the advantage.

#### MINES REGULATION ACT.

Ques. 1.—State the requirements of the Act with regard to shafts. Under what conditions can a coal mine be worked by a single shaft.

Ans. 1.—There must be at least two shafts or outlets to every mine with which every seam working in the mine must have communication. These outlets may belong to one mine or more than one mine so long as they afford separate means of ingress or egress.

These outlets must not be nearer together than 15 yards and must be joined by a communicating road not less than 4 ft high and 4 ft wide.

Proper apparatus for raising or lowering persons must be kept constantly available for use at such shafts or outlets.

The working of the mine may be prohibited by injunction for contravention of this section.

A mine may be worked by a single shaft:—

(a) In the case of a new mine being opened:—While a communication is being made, or minerals are being searched for, so long as not more than 20 persons are employed underground at any one time.

(b) In the case of a proved mine if exempted by order of the Commissioner, either:—

Because the quantity of mineral proved will not repay the cost of making a second outlet, in cases where such outlet did exist and has become unavailable. Or because the boundary of the royalty has been reached and the second outlet has been cut off by extracting the pillars, so long as not more than 20 persons are employed below ground at any one time.

(c) To any mine:—

While a shaft or outlet is being made, or where the second outlet has become unavailable by some accident, so long as the mine is exempted by order of the Commissioner and the conditions (if any) attached to the order are duly observed.

Ques. 2.—What are the duties and qualificat-

ions of a night examiner?

Ans. 2.—The night examiner must hold a certificate as manager, underground manager, overman, or shotfirer.

His duties are, to travel and inspect the working places of the mine which are being, or are intended to be worked, and the roads leading thereto, to ascertain if they are safe and in a fit state for working therein.

If inflammable gas has been found within the preceding twelve months the inspecton must be made with a locked safety lamp, within five hours of the pit commencing work.

If inflammable gas has been found within the preceding two months the inspection must be made within three hours of the time of commencing work.

He must make a true report to the overman or underground manager as to the condition of the part of the mine he inspected, so far as ventilation etc, is concerned, and no workman shall be allowed to go to any part of the mine until it has been so inspected and reported safe.

Ques. 3.—What does the Act require in places being driven towards an accumulation of water.

Ans. 3.—Any working approaching a place which is likely to contain a dangerous accumulation of water, shall not, at any point within 40 yards of such place, exceed 8 feet in width or height and there shall constantly be kept in advance, not being less than 5 yards, at least one borehole near the centre of the place, and sufficient flank holes on either side.

Ques. 4.—What are the requirements of the Act as to the securing of roof and sides of working places etc.?

Ans. 4.—The roof and sides of every working place and every road on which persons have to travel, shall be securely timbered or otherwise made secure, and no person, except for the purpose of exploration or repairs, shall work or travel in any such place or road unless it is so made secure.

Ques. 5.—When is it necessary and under what conditions should safety lamps be used.?

Ans. 5.—Safety lamps should be used in every mine giving off inflammable gas.

The C. M. R. A. requires:—

In every working approaching any place where there is likely to be a dangerous accumulation of inflammable gas, no lamp or light other than a locked safety lamp shall be used, and wherever safety lamps are required by this Act or by any Special Rules under this Act, a competent person, appointed for the purpose, shall examine every safety lamp immediately before it is taken in the workings for use, and in any part of the mine in which safety lamps are required to be used, they shall not be used until they have been so examined and found to be locked and secure. They shall not without due authority be unlocked, and a person shall not, unless appointed for the purpose, have in his possession any key or contrivance for opening the lock of a lamp, nor any lucifer match or any apparatus for striking a light. In any mine in which more than forty safety lamps are used at one time, a person shall be appointed to see that the lamps are in good order when given out to workmen.

Ques. 6.—What does the law say respecting the

responsibility of workmen?

Ans. 6.—Every workman is responsible for the observance of all directions given him with a view to comply with the requirements of the Act or any Special Rules made in accordance therewith. Any workman employed in or about a mine who is guilty of an offence which in an owner agent or manager would be an offence against the Act will be held guilty of an offence against the Act.

Every person other than an owner, agent, manager, underground manager or overman who commits an offence against the Act is liable to a penalty of eight dollars.

Ques. 7.—What ventilation does the first General Rule require?

Ans. 7.—There shall constantly be produced in every mine an adequate ventilation, to dilute and render harmless all noxious gases to such an extent that all working places and travelling roads are in a fit state for working or travelling therein.

Ques. 8.—What does the law say about the employment of boys?

Ans. 8.—No boy of or above 12 years of age and under the age of 16 shall be employed either above or below ground in any mine for more than 54 hours in any one week, or for more than 10 hours a day, except in cases of accident or emergency.

A week begins at midnight on Saturday night and ends at midnight on the following Saturday night.

No boy under the age of 12 shall be employed in any mine either above or below ground.

No boy between the age of 12 and 16 shall be employed, either above or below ground in any mine unless he can read and write and can do arithmetic up to, and including, division and produces a certificate to that effect from a licensed teacher.

Any teacher must examine any boy who applies to him and give him the required certificate if he proves that he is entitled to it. No fee must be required from the boy, and the teacher is liable

to a penalty of ten dollars if he does not comply with this section.

In case of misrepresentation of age, the parent or guardian of the boy commits an offence against the Act and no punishment will be inflicted on the management.

Ques. 9.—What is said about keeping plan of working?

Ans. 9.—There must be an accurate plan of the mine kept at the office at the mine. This must be on a scale of not less than two chains to one inch, and must be kept up so as to show the workings up to at least six months previous.

The Inspector may require the manager at the mine to produce the plan and mark on it the progress of the workings up to the date of such production. The manager must allow the Inspector to examine the plan and if requested he must furnish him with a correct copy of the same.

On or before the 1st. April of each year the manager must furnish the Inspector with a correct copy or tracing (not before furnished) of the plan showing the workings up to the 1st. of January then last past.

If the owner, agent, or manager fails to keep such a plan, refuses to mark the extensions of the workings, conceals any part of the workings, or produces an imperfect or inaccurate plan, he shall be guilty of an offence against this Act unless he proves that he was ignorant of such concealment, imperfection, or inaccuracy.

The Inspector may then require a correct plan to be made at the owners expense on a scale of not less than two chains to one inch or on the same scale as the mine plan.

If this is not done in 20 days (or further time if shown to be necessary) the owner, agent or manager shall be guilty of an offence against the Act.

In case of abandonment a correct copy of the plan must be forwarded to the Commissioner within three months after abandonment. This plan must not be on a less scale than 2 chains to 1 inch

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G 11 15	L 3 55	L 11 15	L 3 55	0	0	P. Tupper Jet	11 05	A 3 10			
11 21	4 00	1 3	4 00			P. Hawkesbury	11 05	3 17			
A 11 40	A 4 10	1 3	4 10			P. Hastings	10 50				
L 4 15	5 8		5 8			Troy	10 30				
F 4 27	12 7		12 7			Craigmore	10 15				
F 4 40	10 9		10 9			Craigmore	10 05				
F 4 52	22 1		22 1			Judique	9 44				
F 5 07	27 6		27 6			Catherine's Pond	9 32				
A 5 25	32 5		32 5			Port Hood	9 18				
L 5 45	37 2		37 2			Glencoe	9 05				
P 6 00	44 5		44 5			Malou	8 52				
A 6 12	47 4		47 4			Glendyer	8 35				
L 6 29	50 9		50 9			Black River	8 20				
F 6 50	56 0		56 0			Strathlone	7 47				
A 7 15	00 0		00 0			Inverness	7 30				

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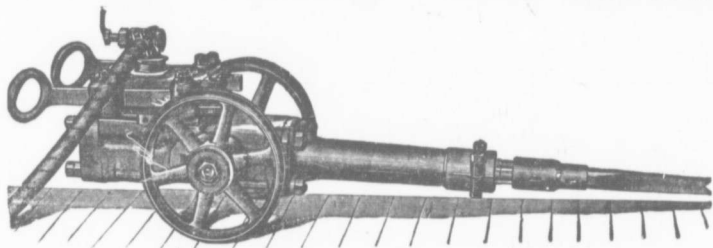
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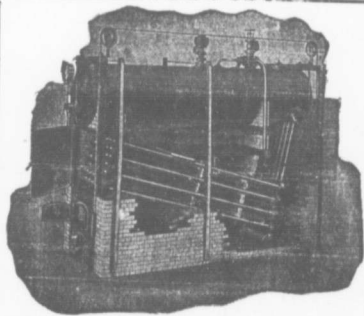
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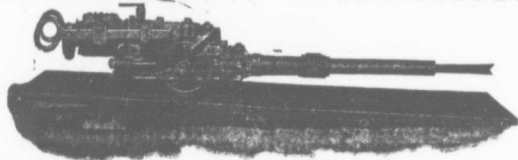
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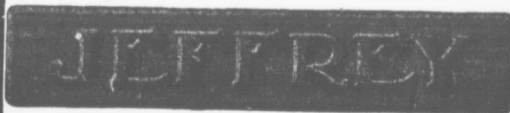
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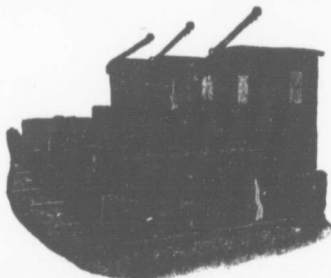


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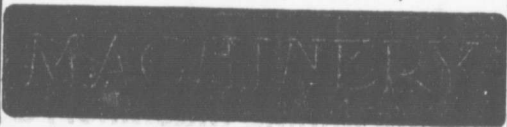
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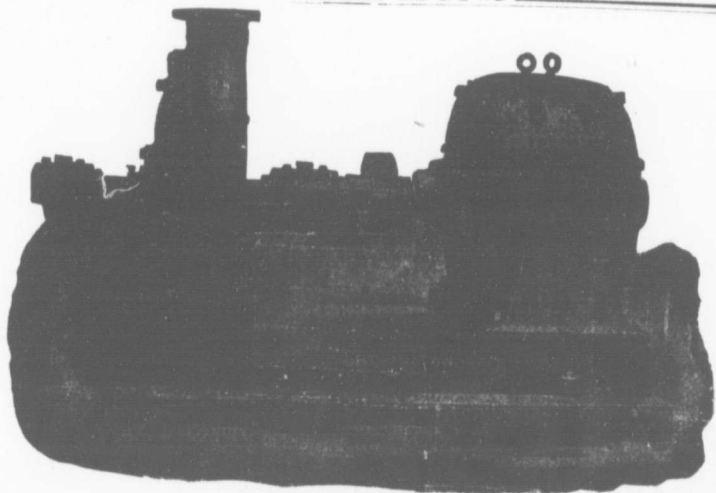
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ASH.....	2 30 " "	4 10 " "
WATER.....	3 35 " "	2 11 " "
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THICK SEAMS  
NOS 1, 2 AND 3.

—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**

IN Lots To Suit Purchasers.

BEST COAL FOR  
DOMESTIC CONSUMPTION.

BEST GAS COAL

Mined in the Province.

Mines \_\_\_\_\_  
**SPRINGHILL**

N. S.

Head Office \_\_\_\_\_

**MONTREAL**