

**MINING RECORD**  
Dr. R. Bell  
Geol. survey dept.  
**AND**  
**COAL AND METAL TRADES JOURNAL**

*Cumberland. \* Pictou. \* Cape Breton. \* Inverness*  
New Series Vol. 12 No. 2 July 28th. 1909 STELLARTON, N. S.

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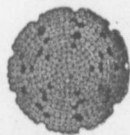
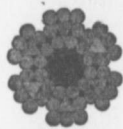
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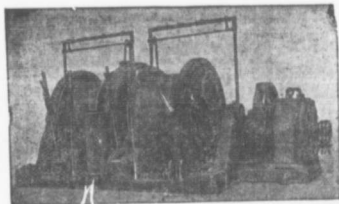
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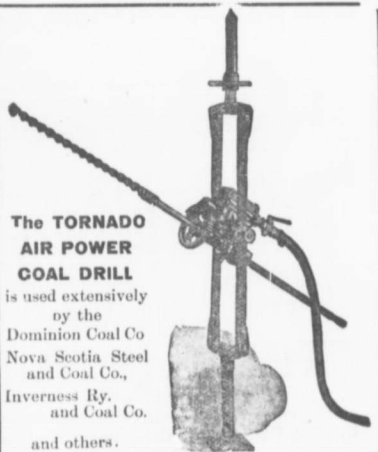
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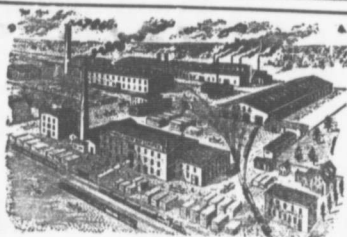
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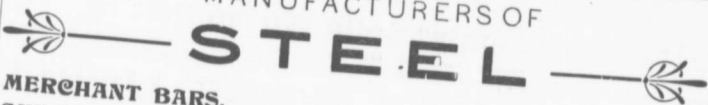
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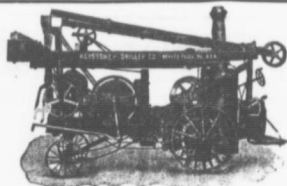
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In operation a hole is sunk to the coal with the ordinary Rock Bit. The Bit and Stem are then removed and the Coring Attachment put on in their place. It takes a 4 ft. core out of the Softest as well as the Hardest part of the vein. Avoids all delay and expense of rock water wash, diamonds, shot, and heavy operating mechanism.

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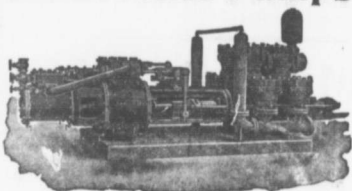
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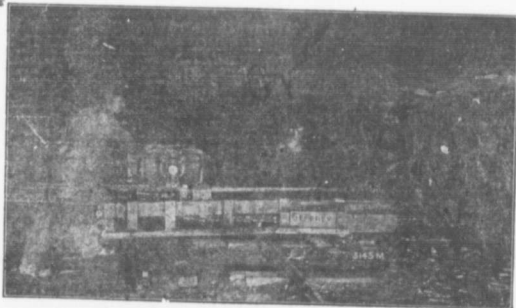
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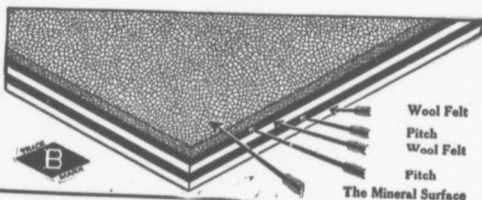
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have to penetrate a layer of felt and another layer of composition and another layer of felt before the roof would leak.

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The...  
**MARITIME MINING RECORD**

Vol. 12, No. 2. Stellarton, N. S., JULY 28 1909. New Series

NOVA SCOTIA EXAMINATIONS, 1909.

UNDERGROUND MANAGERS.

-SURVEY.-

Time—Two and a half hours.

- 1.—What precautions would you take to avoid errors through the variation of the magnetic meridian?
- 2.—In making a loose needle survey underground, what particular precautions would you take?
- 3.—The bearing of a line in N. 27 deg. 50 min. E. An angle of 82 deg. 20 min. is turned to the right, what is the bearing?
- 4.—Describe how you would book an underground survey.
- 5.—Plot the following to a scale of 1" = 100 ft., closing the plot by protractor and scale; give closing course and distance:  
 N. 31° 00' E., 120 feet.  
 S. 68° 00' E., 258 feet.  
 S. 14° 00' W., 164 feet.  
 N. 76° 00' W., 207 feet.

-VENTILATION.-

Time—Three Hours.

- 1.—A fan going at 40 revolutions per minute is producing 80,000 cubic feet of air per minute, with a water gauge of 2". If the speed of fan is increased to 60 revolutions, what will be the quantity of air, and the water gauge, after change?
- 2.—How would you proceed to increase the air current by half without altering the size of the airway? How much will the water gauge be increased to produce the above current?
- 3.—What is the H. P. of a furnace producing 180,000 cubic feet of air per minute temperature of down-cast 41° and upcast 141°, both shafts 1200 feet deep, barometer reading 31 inches midway down each shaft.
- 4.—How would you ascertain the quantity of air passing in a district?
- 5.—How would you examine a safety lamp to see that it is in perfect order? Mention all the parts which are likely to be out of order, of a lamp with which you are acquainted.
- 6.—State fully how you would proceed to examine a place for gas, CH<sub>4</sub>. What is the smallest proportion that will show a cap on safety lamp. At what proportions does it explode in a safety lamp, and at what proportion will CH<sub>4</sub> extinguish a light.  
 And what is the lowest percentage of explosive gas,

in which you deem it safe to carry on blasting.

- 7.—Plan to ventilate.
- 8.—How does the steam jet act in producing a current of air? Does it signify where the steam jets are placed in the upcast shaft?  
 How is it that the steam jet is not more frequently used in the ventilation of coal mines at the present time?

-MODES OF WORK.-

Time—Three Hours.

- 1.—State fully your experience in mines and mining, giving in detail in what occupations such experience has been gained; also in what capacities you have been employed in different countries or districts.  
 (Note.—It is important that candidates answer the above question as fully as possible.)
- 2.—Show by sketch how you would keep a line on the faces of a section of pillar workings with respect to the strike of the strata.
- 3.—What do you consider usually causes creeps in mines, and how would you proceed to lessen the effect of a creep which had started in a section of a mine pitching 1 in 10?
- 4.—What instructions would you give to an employee, unfamiliar with the work, who has been put in charge of a gravity haulage?
- 5.—What course would you pursue with new men in working faces where fire damp may be expected, and where safety lamps and explosives are used?
- 6.—Describe and sketch a main hauling road, 8 ft. by 6 ft., soft roof, hard pavement. Mark and sketch size of timbers to be used.

-SCHOLARSHIP.-

Time—Three Hours.

- 1.—What is the value of a rectangle field 80 rods long, 60 rods wide, at \$15.00 per acre?
- 2.—A man's wages is \$3 4/5 a day and his daily expenses \$1 1/4. How many days must he work to buy a suit of clothes worth \$40 1/5?
- 3.—State and explain the rule for reducing a vulgar fraction to a decimal fraction. Show sample.
- 4.—Write table of square measure.
- 5.—A, B and C buy a house for \$2500.00. A pays \$500, B \$1200, C \$800; they rent it for \$300. What is each man's share of the rent?
- 6.—A can do a piece of work in 12 hours, B can do it in 15 hours. In what time can both, working to-

gether, do it?

7.—How many gallons will a pump throw at a stroke when the plunger is 15" in diameter and the stroke 9 feet?

8.— $V \frac{1}{4}$ .

9.—Divide .7834 by .03.

### OVERMAN.

#### —VENTILATION.—

Time—Three Hours.

1.—What amount of air per minute should be in circulation in a mine employing 350 men?

2.—If the quantity of air circulating in a mine is 30,000 cubic ft. and pressure is 8 lbs., what is the water gauge?

3.—Describe how natural ventilation may occur in a mine, and how would you start a current of air moving in two shafts of equal depths, density of air in the two shafts being the same.

4.—State what you know about fire damp, and method of detecting its presence.

5.—Describe an anemometer, and explain what it is used for showing by a sketch, or example, your explanation.

6.—How would you examine a safety lamp, to ascertain its safety before entering a place likely to contain fire damp.

7.—Is the pressure or the velocity of an air current the most important factor in mine ventilation?

8.—Ventilate. Place.

9.—What do you mean by the area of the section of an airway and what is the rubbing surface per sq. foot of section of an airway 7 ft. high 11 ft. wide and 64.72 ft. long?

#### —MODES OF WORK.—

Time—Three Hours.

1.—State fully your experience in mines and mining, giving in detail in what occupations such experience has been gained; also in what capacities you have been employed in different countries and districts.  
(Note.—It is important that candidates answer the above question as fully as possible.)

2.—What are the duties of an overman?

3.—When would you consider that a working face is properly mined where explosives are used in winning the coal?

4.—If you have had no actual experience, give your impressions as to how gob fires can be dealt with?

5.—In a seam pitching twenty (20) degrees from the horizontal, what instructions would you give as to roof, strong shales, and bottom, hard?

(a)—In workings on strike.

(b)—In workings on dip.

6.—What course would you pursue if you found miners at work in a place where fire-damp had developed after Examiners had reported 'safe'?

7.—What examination would you make in a place approaching abandoned workings where noxious gases or water might be encountered?

8.—In your daily rounds, what are the things with respect to output which should receive your attention?

9.—Give in detail the mode you would adopt in shooting coal from the face of a narrow heading. Describe appliances used?

10. (a)—Describe how you would put up running or collar booms, and their use?

(b)—If the weight on a row of timber became too heavy, how would you proceed to trim the timber in order to let in the roof, in workmanlike manner?

#### —SURVEYING.—

1.—What instruments are generally used in mine surveys?

2.—What are the purposes of—

(a) Mine surveys?

(b) Mine maps?

3.—Measuring on the slope of a seam pitching 20 degrees from the horizontal, are any corrections necessary before plotting?

4.—What influences are magnetic needles generally subjected to in surveys of coal mines?

5.—What kind of lamp would you use in making—

(a) Loo e needle survey?

(b) Fast needle survey?

#### —SCHOLARSHIP.—

1.—Multiply .56 x 234.

2.—A man bought a quantity of coal for \$2.50 and by retailing it at \$3.75 a ton he gained \$37.00, how many tons did he buy?

3.—Add  $1 \frac{1}{2}$ ,  $1 \frac{1}{4}$ ,  $1 \frac{1}{6}$ ,  $3 \frac{1}{4}$ .

4.—If a man travels 7 miles 139 rods 3 yards in one day, how far will he travel in 30 days?

5.—A place is full of water, it is 125 feet long, 15 feet wide, 8 feet deep, what weight of water does it contain, say a cubic ft. of water weighs 62½ lbs.

6.—Reduce 288/864 to its lowest term.

7.—How many long tons in a pillar of coal 125 feet long, 6½ feet high and 30 feet wide, say one cubic ft. of solid coal weighs 80 lb.

8.—If 25 men can do a piece of work in 40 days, in how many days can 13 men do the same work?

#### —MINES ACT.—

1.—State the law respecting the working of submarine areas.

2.—What are the manager's duties?

3.—What is the law on the subject of outlet for miners?

4.—What machines and signals are required for travelling planes worked by machinery?

5.—State the matters that the Inspector must be notified of.

6.—State and define the object of the special rules and their power.

7.—Give a general outline of the duties of underground managers, overmen, shot firers and examiners.

8.—What examinations are required when it is necessary to work a mine with safety lamps?

9.—State what the general rules require as to ventilation.

## 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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Subscription \$1.00 a year. Single Copies 5 cents

R. DRUMMOND, PUBLISHER.

STELLARTON, N. S.

July 28

## THE POST AND UNITED LABOR.

In the contract between the Dom. Coal and Dom. Steel Co there was a strike clause; in the contract now being negotiated there will be a similar clause.

We wonder.

The Post has at last found its feet—on the C. B. labor question.

Whatever the inspection, and however late of coming, the Post is to be congratulated.

Still there may be excuses for those who wonder how the Post could have remained so long in a somnolent state.

The Post having spoken out it will be wholly unnecessary for the Record to make further defence of its attitude towards the two labor societies. Every patriotic paper should have shown the U. M. W.'s scant courtesy, if 'no quarter' might have been too drastic.

If the Post was waiting on the Record, and the Record on the Post, then the latter gets the medal as being the first to take its courage in both hands.

In the following article the Post talks sense. The matter is as clearly and as forcibly—if not quite with so much fire—as the Mining Record could have put it. This is equivalent to saying the article is worth reproduction and worth reading:—

"The present labor situation in Cape Breton has unfortunately reached a point where it is being watched by the public with a feeling of uneasiness and apprehension.

The immediate cause of trouble is the variance between a branch of organized labor and the Dom. Coal Coy., but the radical trouble lies in the division and hostility that exists in the ranks of labor and which has finally culminated in the establishment of two organizations which are entirely out of joint and out of harmony with each other.

It is too late in the day to call in question the benefits or the utility of unionism. It is conceded by all whose opinions are worth considering that organized labor is in the interest of the workman and in the interest of capital. It has brought both within reach of mutual co-operation recognition of their several rights and obligations.

To be effective labor must be united. It is quite clear that to attain the aims and objects for which unionism stands among the miners of Cape Breton there must be no division in the ranks.

The question of how much strength has been developed by affiliation of a part of the miners of Cape Breton with the United Mine Workers is open for discussion. While there has been and still is a large and free intercourse between the people of the United States and Canada there has been ever maintained by the Republic an intense commercial hostility towards this country which was never more marked and accentuated than it has been during the present revision of the tariff. The question is, can two countries each extremely commercially and industrially hostile to each other co-operate to mutual advantage? Canada has grown up and become strong in spite of the exclusion policy of the United States and our commercial and industrial future does not look to the Republic for any assistance because none will be sought.

On the other hand a labor union Canadian in origin and sentiment offers the highest possibilities of effective usefulness for the miners of this province. In order to effect such a condition it will be necessary to remove the causes that have led to the disruption of labor unionism in this island. There are plenty of men who have the intelligence, firmness and business ability to promote a solid all-Canadian union which would be more powerful and effective for good to all concerned than the present divided condition of the labor forces. The culmination of the present difficulty in either the victory or defeat of the United Mine Workers or the P. W. A. will not settle the question. There will be days beyond those that are being counted in this passing year and there is an industrial future to this island that requires the intelligence and sympathetic co-operation of both capital and labor. In the process of reconstruction there are some men who should realize that their retirement is in the interest of the restoration of pacific conditions. Feelings, however warm, are of a transitory nature, but a settled policy supported and lived up to will bring forth good results."

## CONCERNING COAL ROYALTIES.

The Halifax Herald being 'agin' the government, is for that reason, so it considers, bound in season and out of season, to find fault with anything and everything it ever has done, or even thought of doing. Recently, in the increased royalty on coal, as compared with what the royalty was when the conservatives were in power, it has found a new cause for complaint. It is now vehement in its denunciation of the local government for having increased the royalty on coal in 1892, and previously and subsequently. It is scarcely to be expected that the Herald would be quite candid if candour won't fit in with its argument then candour must go. Its statement as to the increase in royalties is not a full statement. Why was there, as it alleges, no royalty on slack. On what coal is royalty paid, on the coal raised to the surface or on the coal sent from the colliery? Why did the conservatives not raise the royalty between 1878 and 1882, and why did the liberals wait until 1885 (was it not actually 1886) before increasing the royalty. Was there not a question as to the validity of an increase in

view of the wording of some of the leases. The Herald, regardless of consistency accuses the Liberal government for having increased the royalty in 1893 to the Dominion Coal Co. to 12 1-2c., an increase it says of 60 per cent—robbery and extortion. Whereas in 1893 it denounced the government for having made large concessions to the coal company for a miserable 12 1-2c. per ton.

In the article referred to the Herald sapiently, yet superfluously says:—"It is also universally known that every dollar of this increased taxation through increased coal royalties has fallen upon the people of this Province, and been taken out of their own pockets.

This is a fact that must never be lost sight of in considering this matter of coal Royalties and the increase therein."

The Herald has made an important discovery—that of a mare's nest. Will the Herald please run through the entire catalogue, and point out in either federal or local affairs, a single item of income that does not come directly or indirectly out of the pockets of the people. The Herald has surely seen the picture of the soldier, the bishop and the workingman—representing the people at large, with the legends written underneath, "I fight for all," "I pray for all," "I PAY for all."

It is a little surprising that the Herald, claiming to be endowed with a little intelligence should have been carried away by the false doctrine of the Free Coal League, and other, equally ill informed, of its correspondents. Says the Herald:

"It is true that all the coal upon which the new rates Royalty are paid is not consumed in this Province, and, hence it might, with some show of reason, be contended that part of the Coal Royalties are ultimately paid by the consumers of this coal abroad, in other Provinces or countries.

But the contention would be false, because it is an indisputable fact that the coal that is exported to other Provinces or countries is sold at such low prices as to afford no profit worth speaking of, or so little profit that, practically, all the Royalties paid by our coal companies have to be paid out of the profits taken by them out of the pockets of the people of this Province."

Such language is utter foolishness. The coal exported by the Dominion Coal Co., and by the Nova Scotia Steel and Coal Co., to name no others, is incomparably more profitable trade than that done by them in the provinces. One of the railways is taking from the Dom. Coal Co this year the large quantity of 350,000 tons. The price is, of course much less than a Halifax contract of 5000 tons would be, but the Herald can be assured of this, that if it can produce a customer in Halifax, take quick delivery—that is within six months, he will not only get his coal as cheap as the railways, but cheaper.

The Herald, having a job office, ought to know something of the part quantity plays in fixing prices. For instance for 100 dodges it would charge at the least fifty cents, whereas for a thousand it would not charge more than two fifty or twenty five cents a hundred, a difference of fifty per cent.

The Herald caps the climax in the following paragraph:—"The prevailing high prices is due to

the increased taxation, about which the Government organ has the folly to boast, and monopoly or trust rates due to that Government having favored the creation of one Coal Company sufficiently powerful to dictate terms to all others.

It need hardly be mentioned that one of the serious results of the high price of coal in this Province, through the Liberal Government's legislation increasing taxation and favoring monopoly, is the heavy handicap it places on all manner of manufacturing industry in the Province."

It is quite possible had the liberal government known the far reaching effects the increased royalty was to have over all the world they would have paused. In every coal producing country in Europe the cost of coal has increased, all traceable, no doubt to the increase in royalty. In very few countries indeed, perhaps we might say only in the U.S. do manufacturing industries get cheaper coal than in N.S., and yet Germany with its dearer coal, and Britain too, yes, and the province of Quebec are making rapid industrial progress. Will the Herald say how the province would have raised revenue for roads, bridges, agriculture, education, railway, steamship and other services, but for increased royalty. The only other way would have been by increased taxation, and if the royalty makes the Herald ill, direct taxation would be the sure death of it.

## - Rubs by Rambler.

Every man, woman and child, almost, is at heart a free trader. That is as much as to say that if there are two million grown up people in Canada, one million nine hundred and ninety thousand have a desire to smuggle. By hook and by crook they try to dodge the customs officials and evade customs duties. There is scarcely a passenger entering a United States port who does not make the declaration 'Nothing for duty.' There is scarcely a passenger entering Canada but tries to smuggle something in, and for that purpose resorts to every imaginable device. The tariff is responsible for infinitely more perjury than a prohibitory liquor law, the desire is to smuggle,—in plain English—and yet the law against smuggling is very stringent. Seeing that law does not prevent smuggling, seeing it leads to an awful amount of perjury, should it not be abrogated. Very few will be rash enough to say that it should. Do you say the cases are not parallel, well, the subject in matters affecting the welfare of the community. A person with a contagious disease and the persons living in a house where there is an infected person have the desire to roam about, but the law prohibits them. They are restrained for the good of the community. And is not liquor selling a worse moral yes and physical pestilence than a small pox. Not to follow this phrase of the subject further it may be said that all law is restraint.

'Are you not right' No you silly body you are not. Did not one know you to be an inoffensive temperance man he would almost be justified in concluding that

the article had been written by a practical anti-prohibitionist who had arrived at that state suggested in the lines:

"Kings may be blest, but Rab was glorious  
O'er a the illa of life victorious."

Let me see what you say, Oh yes, you say that many persons believe that "the mills of God grind slowly". Well I never, never did meet any such person nor did you. God is no grinder. Have you never read "For our God is a consuming fire" or "The bruised reed he shall not break". A grinder; not at all. But for the capital G, I might have concluded that the error in the quotation was the compositor's, but he would not bother reaching up for a cap g with a lower case g handier. Is'nt the quotation more correctly written "The mills of the gods grind slowly, but they grind very fine."

"To put into force by law prohibition." What are you giving us? Kindly explain the kind of prohibition that can be enforced without law. You cannot successfully prohibit without a penalty, and the enactment of a penalty needs law, therefore there are not two kinds of prohibition. You see, don't you.

"To put into force, by law, prohibition while the desire and the demand exist seems rather like a dream of the age". Poetical? perhaps, Philosophical? not at all.

Glancing over a New Glasgow paper a short time ago I chanced upon the following:

"To a very practical person who has a firm belief that the mills of God grind slowly the proposal to put into force by law prohibition, while the desire and the demand exist, sounds rather like a dream of the age, which is putting speed and veneer before everything else. Even if prohibition could be carried out it is regarded as an impossible reform for the Anglican body, and by a large thinking number in other denominations as being inconsistent with the principles of Christian liberty for which Christ stood and which Paul preached. The Presbyterians stand, or ought to, for the sovereignty of God. . . . Therefore there is no room for ecclesiastical domination. Spiritual independence and civil liberty being the foundation of our Church, and a vindication of the right of every man to use his own private judgement. Now then is not prohibition a compulsion against this doctrine."

I was about casting the paper aside with the remark foolish, or another like suggestive exclamation when I was arrested by the closing words of the article 'Are we not right?' When one it asked a question, no matter how silly it is, common politeness bids him answer it. One's courtesy being challenged he hates to seem foolish, then I in answer to the question reply: Decidedly not; you are wholly wrong. Why, man, a reading of your article would lead any one to the conclusion that your mind was still in its infancy, or that, for want of refreshing showers, its growth had been stunted. You say prohibition "is regarded as an impossible reform for the Anglican body". You may be correct but I never should have imagined they were as bad as all that. Further you say that "The Presbyterians ought to stand for the sovereignty of God". True and probably that is the reason they go in so strongly for the prohibition of the liquor traffic. In the United Kingdom the supremacy, the sovereignty of 'the trade' was exemplified by the defeat of the licensing bill. In the United States, 'the trade' decides the elections. It is responsible for Tamany. Should the sixth commandment be abrogated and the seventh

and the eighth and the ninth? These are all prohibitory; the desire to commit the offenses mentioned in them prevail. Are not the several prohibitions a compulsion against the doctrine of "the right of every man to use his own private judgement"? Well I rather think they are.

As a specimen of what I consider good leader writing, call it an essay if you will, I give the following from the Christian World's correspondent, I. B., who writes on every conceivable subject and writes well. After referring to the defeat of the British licensing bill, and suggesting that a way to secure popularity with certain people would be to provide free liquor, at the nation's expense, two nights a week, he thus discourses on politics in general:

"It is well to recollect that our world of to-day is so much better than the best of yesterday. One of the most effectual antidotes to discontent with the present is to read a little history. We see there how, despite the fluctuations of parties, the line of progress stretches ever on and up. It is curious how each generation despairs of itself. What a pathetic cry is that of Southey in his time: 'Oh Christ' says he in a letter to Landor, 'that this England, this noble country should have a face all leprosy, and a head fit for nothing but the vermin that burrow in it!' Yet, while patriots despair, the country goes on improving. We drink too much, but our fathers drank more. A Temperance Bill is thrown out, but we are temperance itself compared with two generations ago. The Creevey Papers, the Greville Memoirs show us peers of highest distinction staggering drunk from their clubs; Brougham rising to speak in the House so intoxicated that his first sentences are a mere gurgle; King George on his visit to Ireland drunk as he lands at Kingstown. We are beyond that level. And we know to-day pretty fairly the limits of possible reaction. Its worst form will never carry us back to the old factory system, the old criminal system, to the old slaveries and persecutions. The balance of power swings this way and that, but it cannot stop the march. There are certain steps forward which will not be retraced. Deeds have been done in our history which are not to be undone; they are indestructible, inalienable additions to the sum of national well-being.

Let us remember also how much of the progress of the race depends on causes quite outside politics. While parties are declaiming and fighting, some lonely Coenarians in his cell, or Newton under his apple tree, remote from the uproar, is solving some world problem and setting men on a new path of enlightenment. A Stevenson gives us railways, a Curie discovers radium, Marconi finds a new medium in the air. In remote solitudes of unmapped regions pioneers are probing, searching, and may come any day upon new resources, unnamed powers. A single nature's hint striking upon some receptive brain may any day revolutionize life. It is in the silence and not amid the noises of conventions that the great things are done, the real advances made. The new invention is of no politics. Like the sun it rises upon the just and the unjust. The real progressives are the world's best brains, face to face with nature, listening to her whispers, wringing from her her guarded secrets.

It is indeed rarely that the politician, as such, brings about the great forward movements. Parliaments are not manufactories. They are merely the ex-



change for products made elsewhere. In the eighteenth century Wesley and his preachers had little to say about the party issues of their time. Yet what is true of her American Colonies, the conquest of India, the French revolutionary outbreak which shook all the thrones of Europe. In the midst of the turmoil Wesley and his helpers kept to their preaching pouring into the masses a red hot message not of time but of eternity. And who shall measure the political effect of that entirely non-political work.

Considerations of this kind seem to show us the true temper in which to face our political setbacks. It is one not of despondency, not of indifference, not of cynicism; but one of cheerfulness, of courage, and of love all of hard work. The finest thing in the situation is that good work is never lost; it always tells. The material may seem hopelessly unpromising, but it is not really so. The human improvement carried on that. Our poor England even, so stupid as it seems at times, yet somehow blunders on. Our Carlyle, who found its fools so preponderant, yet believed in its essential soundness, yes, in its greatness. Did ever a nation get a better character than this, and every word of the bulk and strength of the; thy epic, unsung in words, is written in huge characters on the face of this planet; sea moles, cotton trades, railways, fleets and cities, Indian empires, Americas, New Hollands, legible through the solar system!

The true way for us as politicians is to be always deeper and higher than politics. They are worth nothing except as a form of the world's spiritual improvement. The man who pursues them for personal and mercenary ends will find nothing in that arid region but dust and ashes. The triumphs are of a day; the defeats have no compensations in their bitterness. It is only when we have made our politics a part of our religion that amid reverses and discouragements we can preserve an even mind."

The British Budget proposes to tax ungotton minerals. I have had no opportunity to read the clause relating to this point, so cannot say, exactly, how it is to be effected. I presume the tax will be on the land, and not so much per ton on any assumed quantity of mineral that may be supposed to be under particular lands. Ground supposed to contain minerals will be taxed at a higher rate than lands barren of them. Perhaps from the British Budget the local government may learn a wrinkle. The Halifax Herald professes to be scandalized at the action of the local government to be scandalized at the action of the local government in increasing some time ago the royalty on coal, and berated the government for such action. The Herald is scarcely even practical. Had it perception enough, and did it, in truth, wish to make a point, it might have queered or grieved the government over the fact that royalties, except on coal and gold, were in much of a mix up. We all know what the royalty on coal is, also on gold. But what is the royalty on iron? Some one may say 'Oh, that is easy, it was fixed long ago. Perhaps, and yet the royalty on iron ore is in an anomalous position. When grants of land were given out years ago, with lavish generosity, the government reserved, as the peoples, coal, gold, silver and precious stones. Just what the then governments meant in reserving precious stones, — seeing the most popular gems we have yet found in Nova

Scotia are lime crystals, — it is hard to imagine. In office I found a grant in which the Crown had reserved even coal, but probably there are few such. In some of the grants iron is reserved to the Crown; in others it is not. Now suppose A and B have farms adjoining each other on which iron ore has been found. The ore on A's land has been reserved; on B's land the ore belongs to the soil. The ore from A's area, then, is subject to royalty, while that on his neighbor's is not. In Guysborough County prospectors have been put to great annoyance and inconvenience. They have been given rights of search, and have done work, only to discover, later, that some other persons had found out that the ore had not been reserved, and had made a bargain with the land owner. They say there is iron in Guysborough. Should it, by and bye, be worked, will it be fair to enact a royalty on some ore, and not on other?

Fire-clay has been, by the government, in answer to a question, declared to be a mineral. No royalty has been enacted as yet, probably from a desire, on the part of the government, to put no burden on an industry as yet in its experimental stages; but suppose in the future the fire-clay business assumes some proportions, what will the government do about royalty, seeing the clay is in some cases reserved and in others not? On the East side of the East River, Pictou County, there is a tract of fire clay land, extending over half a dozen farms. From North to South let the farms be numbered 1 to 6. On farms Nos. 1 and 2 and 5 and 6 the clay has not been reserved, while on the two centre farms, 3 and 4, all be worked some day. It is possible this fire-clay will for those working the clay in Nos. 3 and 4, if they think they are being unjustly treated.

Then there is the matter of shale. Is shale coal, and is it subject to royalty? Is it a mineral different from coal, and if so has it been reserved? There must be uncertainty on this point. Some two months, or more, ago, there was a rush for oil shale lands in Antigonish County. The ground had been fully covered with leases, and rights of search for coal. Some parties believed these rights did not cover shale and made bargains with the proprietors of the land. That the rights of search indicated by the fact that their titles unimpeachable is evaded by the fact that as soon as they heard that other parties were taking options on properties they immediately set about doing a similar thing. If shale is coal, the holders of the rights of search are on top; if it is not, the other fellows are masters of the situation. To determine whether or not shale is coal, the law courts of Scotland had to be invoked, and the legal battle was a sharply contested and expensive one.

I read in the papers a while ago a glowing account of the opening up of an arsenic mine in the province. Is arsenic a mineral; what is the royalty, if so? There are those who are against all royalties on the ground that they are a tax upon enterprise. Be that as it may, it is too late in the day to discuss their equity or unequity. Without royalties the affairs of the province cannot be carried on, the royalties are, it may be said, all that are left to us. I am of opinion that the government should adopt a new and a bold policy, in reference to royalties. All minerals of an appreciable economic value should be called upon to pay royalty, and that regardless of the land grants, as to reservations, and that the government has the power to do such a thing. The question is 'would it be fair'? Well is it fair to tax iron ore on some lands, in some counties, and let it go free on some lands in other counties? These grantees who



are called upon to pay royalty paid as much for their grants, as those permitted to mine ore free. By the imposition of a royalty on all mineral, wherever gotten, a few might be disadvantaged, but to the profit of the many. In some cases compensation might justly require to be given—in cases where operations may have been commenced on the assumption that the ore or mineral belonged to the soil—but these cases where bona fide operations had really begun would likely turn out to be surprisingly few.

#### THE EVOLUTION OF THE "PLUCK ME"

From time "immemorial" well on into the nineties, the coal company's store on the north side of Sydney harbor was familiarly styled the pluck me. By whatever name the store may have been designated in the company's book—whatever its official cognomen, colloquially among the workers it ever and always was referred to as the pluck me. The title did not extend easily to the company stores on the south side of the Harbor. If one wished to use the title here, he was expected to put the word surrounded by quotation marks, whereas on the north side all such embellishments were considered unnecessary as if the nickname was indigenous to the locality. That, it was not, however, but a transplantation from across the seas. In former years the appellation may not have been inappropriate, but of late years it has lost any significance it may have had as applied to the stores of the coal companies. Wonderful to say the stores which were designated, in the reddest angle saxon, as a bane, are now considered as a boon, if not actually a blessing without a blessing. Why do we say "wonderful." Because it is a wonder that that which was violently denounced a dozen years ago is now applauded.

In 1897 there was a fierce outcry against the company's stores on the south side of Sydney Harbor, or to be exact in the Glace Bay district. The then Secretary of the P. W. A. was by a faction denounced as an abettor of the stores and therefore a betrayer of the workmen. Though the stores were used as a cry more against the P. W. A. secretary than against the company, the latter who had been losing hand over fist by the stores, declared they would give them up if a majority of the workmen so desired. A ballot was taken. The non contents childishly took umbrage at some supposed informality in giving notice of the ballot and refrained from voting, by their action making the majority in favor of the stores larger than otherwise it might have been. The Dom. Coal Co. had then twice the number of stores it has now, which has opened the eyes of the men to the fact, that they may not, after all, be great money makers. There is now no outcry against Company stores in Cape Breton; the sentiment is indeed the other way. There is a demand that the companies should take part in reducing the cost of living. How are they supposed to be able to do this. There can be one answer only; 'go into the supply business.'

Some years ago a paper published in Glace Bay was very active in its opposition to, and bitter against company stores. It declared them to be a nuisance, carrying on a trade against legiti-

mate dealers. It almost went the length of saying, in fact it did say—that the measure of the prosperity of a community was the number of its stores. The party mainly responsible at that time for the outcry in the press against company stores, has veered round evidently, at least he is on a different tack. In a paper now published in Glace Bay, of which the party referred to is one of the proprietors, we find the following:—"If the wages paid their employees appear just and reasonable, the employers ought to apply themselves to the lessening of the cost of living to their help." Just so. And how are they to do it? We are not given the least suggestion as to any line of procedure the employers might adopt to bring about the desired aid. Probably the writer of the article from which the extract is taken could only make bald and not practical suggestions. We will relate an incident which carries with it a very plain moral:—

A committee of the workmen at Sydney Mines waited upon Manager Tom Brown in reference to wages. The men complained that living was so high that they could save nothing. A zealous member of the committee in course of the conversation exclaimed, "Look at the price of meat, eighteen cents a pound; cannot the company do something for us in the way of cheaper meat."

'Would you like me to do something,' Mr. Brown asked.

'Of course we would' was the unanimous reply.

'What,' asked Mr. Brown, 'would you have the company go into the meat business as well as the grocery and dry goods business. If I did I would have the three or four butchers and all their friends in the community down upon me.'

The answer of the committee man was quick, emphatic, and almost startling:—"To —, the bottom of No. 1, with the butchers and their friends in the community." Mr. Brown laid the committee's suggestion before Mr. Cantley; he approved and the result is that the workmen are getting prime beef at less cost than the workmen in the other mining localities. The writer a short time since went through the store of the N. S. S. & C. Coy. at Sydney Mines, the store that formerly went by the name of pluck me, and was surprised at the variety of articles exhibited and the trade done. In the meat department there were 200 or so neatly and cleanly done up parcels of fresh beef ready for distribution by the three—sometimes four—delivery waggons the store has for the purpose. There is also a fresh fish department. The meat and fish department is fitted with a refrigerator. Those serving at the meat tables had clean white aprons, the floors were well sprinkled with sawdust and the air was pure. Taken as a whole this 'Company' store will compare favorably as to quality and price with any in the province. It is suggested by the Glace Bay paper that the Dominion Coal Co. extend its stores business in order to reduce and keep down prices.

The workmen do not now regard the Dominion Coal Co.'s stores as an evil. Under the management of Mr. McCann the stores do only a legitimate business. No man is asked to deal with the company, and no credit is given. The large cash sales testify to the fact that there is now no ex-

tortion if ever there was. If the company's stores were in former years extortioners; if it was compulsory to deal in them or be discriminated against when work was slack, then certainly there has been evolution as none of these things are now chargeable against them. On the contrary they are in high favor.

#### THE SYDNEY MINES HOSPITAL.

The management of the Nova Scotia Steel & Coal Co., the employees of the company and the community of Sydney Mines are, and may well be, proud of the excellent hospital in that locality.

It is not twenty years since the men of Cape Breton county refused to have anything to do with an hospital. Somehow they had strong prejudices against such institutions and looked upon them as sort of slaughter houses. They imagined that hospital patients did not get proper attention, or the sympathetic treatment they would get at home. So strong was the prejudice against hospitals fifteen, or less years ago, that the offer of a hospital by Pres. Whitney, of the Dominion Coal Co., was rejected. Since then education has been at work, and has been successful in overcoming prejudice, and substituting therefor kindly feelings towards such institutions. Because of the greater facilities for proper treatment, for skillful nursing and for freedom from distracting surroundings, the workmen at Sydney Mines are all now ready to approve of and uphold their hospital.

The institution is, surprising and gratifying to say, self sustaining. The workmen really must believe in their hospital, and the proof is that every boy and man in the employ of the Nova Scotia Steel & Coal Co., at Sydney Mines, contributes what may well be called the generous sum of three dollars per year towards its support. This means not less than \$7000 per annum, possibly \$9000.

Every employee of the company, every contributor is entitled to free admission and treatment. Of course if patients desire private wards there is a charge, but only the nominal sum of three dollars per week, as against the six dollars in some other institutions.

The building is situated on a hill less than a mile from No. 1 colliery. The situation is healthy and in every way suitable. Looking out from the windows, on the first floor, one is able to feast his eyes on birch and spruce groves, and from the main entrance inhale the perfume of the pines. From the second story, and looking over the tree tops, the ocean lies beyond to the left, and opposite, the Victoria shores of Sydney Harbor.

The internal arrangements are in keeping with the surroundings. There has been no attempt at elaboration, while every effort has been put forth to secure comfort and cleanliness. The bedsteads are of polished brass, and the linen spotlessly white. The word 'linen' must be used in its wide sense; any cloth that can't be beaten for whiteness the writer easily classes as linen. The surgical appliances are the latest inventions of science. The operating room is void of objects suggestive of the guillotine, and beyond the plate glass table there is nothing visible to work on the

nerves of a patient.

There is accommodation for twenty four patients. At the time of our visit fourteen cots were occupied. Miss Manson, is the efficient matron, a kindly, gentlewoman of much experience in hospital work. She has under her direction a staff of seven nurses, two, or perhaps three, of whom are in their novitiate.

The building cost \$20,000, of which \$5000 is still unpaid. The management of the hospital, are not going to worry over this debt, so there are no proposals for pic-nics, parlor teas or tag days. Good as the hospital is, it is not all the promoters could wish it to be. There is, it is claimed, great need for a maternity hospital at Sydney Mines. Mr. T. J. Brown, whose opinion should carry weight, favors an addition to the hospital to serve the purpose named, so the likelihood is it will be undertaken at no distant day.

#### REPORT ON THE IRON ORES OF NOVA SCOTIA.

The Mines Branch of the Department of Mines, Ottawa, which was organized for the purpose of devoting special attention to the economic features of Canada's mineral resources, has just issued a comprehensive report on the iron deposits of Nova Scotia prepared by Dr. J. E. Woodman, until recently Professor of Geology at Dalhousie University, Halifax.

This report, which covers very thoroughly the more important iron deposits of the province, consists of 222 pages of text, 63 illustrative photographs, diagrams and maps, and a copious index. The scope and economic importance of the work may be judged from the detailed instructions given to the author, who was requested to give special attention to:

1. Localities of iron ore deposits so far discovered, and names and addresses of owners;
2. History of development of mines and companies (if any);
3. Geological description;
4. Analysis of ores;
5. In cases of mines which have been worked, output and statistics;
6. Transportation facilities;
7. Limestone in neighbourhood of deposits;
8. State in general terms character of forest in neighbourhood, i. e., whether the supply is sufficient for mining purposes and for the production of charcoal in the event of the introduction of electric smelting;
9. Maps of mines (and drill holes, if any).

The Report itself is divided into two main parts: Part 1 deals with the geographic relations of the deposits, their mineralogy and geology, and questions relating to mining policy, bounties and mining laws. Part 2 is entitled "Details of Iron Districts," and covers more particularly the ores of the Clementsport and Colchester counties, the deposits of Hants and Colchester counties, the ores of the Western Cobequid mountains and of Arisaig, and the ores of Cape Breton, and is replete with analysis of ores, records of bore holes and geological sections, and other statistical data.

A second volume covering iron ore deposits not referred to in Volume 1, and devoting special attention to limestones of value for metallurgical purposes will shortly be issued.

In view of the present condition of the iron ore industry of Canada and particularly Nova Scotia, where

so much imported iron ore is being used, this report should be of special value to mining engineers, investors and others interested in the development of the iron resources of this province.

Copies may be obtained on application to Dr. Haanel, Director of Mines, Ottawa.

#### PEAT FUEL INDUSTRY IN CANADA.

The importance of the peat fuel industry to the central portion of Canada, where coal fuel is non-existent and its importation so comparatively costly, requires no demonstration.

The Mines Branch of the Department of Mines, Ottawa issued a year ago a report on "Peat and Lignite, their Manufacture and Uses in Europe," with the object of giving to Canadians as complete a review as possible of this industry in those countries in which it has been most successfully carried on.

This report is now followed by a bulletin entitled "The Investigation of the Peat Bogs and Peat Industry of Canada, during the season of 1908-09," by Erik Nyström, M. E., Peat Expert. This bulletin comprises 25 pages of text, and includes 6 large scale maps of the following peat bogs:

- 1.—Mer Bleue, near Ottawa.
- 2.—The Alfred Peat Bog, about 40 miles from Ottawa.
- 3.—The Welland Peat Bog, about 6 miles north of Welland.
- 4.—The Newington Bog, on the New York & Ottawa Ry., and about 40 miles from Ottawa.
- 5.—The Perth Bog, a mile and a half from Perth.
- 6.—The Victoria Road Bog, about a mile from Victoria Road station on the Midland division of the Gd. Trunk Ry.

The Bulletin contains a descriptive report of each bog, showing the location, area and structure, and giving an estimate of the available supply of peat fuel with records of analysis, calorific values, etc., and should be of particular interest to those engaged in, or connected with, the development of Canadian peat resources.

A fuel testing plant is now being erected at Ottawa, in which the value of peat for the production of power gas will be demonstrated, and the Department proposes to carry on a very thorough investigation of this subject.

Copies of the above Bulletin and report on peat may be had on application to Dr. Haanel, Director of Mines, Ottawa.

Mr. S. B. Belden has been promoted to the position of Sales Manager in the Mining Machinery Department of The Jeffrey Mfg. Co., with headquarters at Columbus, Ohio. Mr. Belden who has for a great many years been Manager of the Pittsburgh Office of the Jeffrey Company, succeeds in this position Mr. R. G. Hutchins, Vice President, whose resignation has recently been accepted.

Glance Bay, C. B., July 23.—Dominion No. 1 is now producing about as much coal as at any previous time in its history. The total figures for to-day from this mine were close on 2,200 tons and Manager Maxwell is now getting within two hundred tons of this colliery's record. The Company have now formed somewhat different opin-

ions of the amount of coal a man is capable of producing a day. The men now at work are doing their best and tales of men making ten, twelve and fifteen dollars a day are in circulation which do not make any too pleasant reading to the man who is living on two dollars a week strike allowance.—Gazette.

#### COAL MINE DANGERS.

The following is a portion of a lecture delivered before the Royal Institution, Britain, by Sir Henry Cunningham, on 'Advances in saving life in mines':—

"In the year 1844, after the Haswell Colliery Disaster, Faraday and Lyell, who were sent to report upon it, suggested that coal dust had much to do with the explosion. This new theory that coal dust played a part in mine explosions did not receive much attention in England, but in France, M. Souich and others attributed explosions in part to dust, until in 1875 Mr. Vital made a series of experiments on a small laboratory scale, from which he concluded that dust might of itself alone give rise to disasters. In 1872 the first Coal Mines Regulation Act was passed in Great Britain, and Mr. Galloway, one of the newly appointed inspectors, at once turned his attention to coal dust. In 1876 he presented a paper to the Royal Society in which, while admitting that explosions were usually originated by gas, he argued that they could be continued by coal dust alone, and that if the dust were only fine enough an explosion begun in a confined space might be propagated through a mine. Several commissions in Great Britain and in Germany then experimented upon the subject. Still, however, the mining world was not convinced, and even in 1885 a Royal Commission reported adversely to coal dust as the principal cause of explosions in mines.

In 1886 Mr. N. W. Atkinson and J. A. Atkinson, inspectors of mines, produced an excellent treatise on the dangers of coal dust. Their work was written from practical observation of various explosions. In 1887 a Royal Commission on coal dust was appointed, which employed Mr. Henry Hall—one of the present inspectors of mines and one of the earliest to adopt the coal dust theory—to conduct some experiments, which were conclusive. The dangers of coal dust were now fully recognized. Though gas might cause small explosions in parts of the mine, general explosions were due to coal dust ignited either by a small gas explosion or else by a 'blown out' shot. To avoid the dangers of coal dust three different methods had been proposed. The first was dusting and sweeping. The difficulty of this was that it was impossible effectively to remove the dust by means of brooms and such-like implements, for a very little dust was enough to cause an explosion. A vacuum cleaner had been used in some places with a certain measure of success. The most effective method was by means of hose and sprays to wet any portion of the dusty main roads. The disadvantages of this plan were that in many places water caused the coal to disintegrate and the roof and sides to fall, and it was, therefore, dangerous. Another plan was to have zones of wet in the roadways. For it was believed that explosions of dust could be stopped if they met a wet place, and in very many cases it had been observed that explosions stopped at wet places.

Great as the change of opinion has been with regard to coal dust, British views had had to undergo a transformation almost equally radical with regard to the

causes of death after an explosion. When gas was burned thoroughly they had, roughly speaking, one volume of fire-damp mixed with two volumes of oxygen, which yields one volume of carbonic acid gas and two volumes of steam; the seven volumes of nitrogen sent remaining unchanged. Therefore after nitrogen pre-dominates the mine ought to be full of steam, carbonic acid, and nitrogen, all the oxygen having disappeared. But in practice this never happens. For in gas explosions there was always an excess of oxygen present. But there were no such things as gas explosions on a large scale—even if there was any gas present to begin the explosion. The main result was always due to dust, and in that case, instead of black damp or carbonic acid, they had the products of imperfectly combusted coal, that was to say, after damp, or carbonic oxide. When ever coal was imperfectly burnt there not only was carbonic acid formed, but likewise carbonic oxide.

It was reserved for Dr. Haldane, of Oxford, to demonstrate to the mining world what a part this poison played in coal mine disasters. He thought that he might, to some extent, claim the credit of having first recognised the ability and devotion of Dr. Haldane in this work, and of having secured his services to help in the investigations of mine explosions. The period at which the importance of carbonic oxide was most im-pressed on them was at the Tylorstown explosion, in 1896, at which 57 men were killed, 33 being brought out alive.

Dr. Haldane, in company with Dr. Morris, undertook and carried out the task of examining 45 of the bodies after they were recovered. The object was to discover the cause of death. When death had been caused by carbonic oxide the blood of the dead man exhibited characteristic symptoms. The bodies were covered with an adhering layer of charred coal dust, but in only five cases was the death due to the violence of the explosion.

In all the other cases death had been due to carbonic oxide, showing that the men must have lived and breathed perhaps for hours after the explosion. Of the rescued men, a number had been rendered unconscious also by the after-damp. The death was quite painless one, the only symptoms were a slight smarting of the eyes and throat, and then, though the lamps were burning well and there was plenty of air to breathe, the person affected felt weak and dropped down unconscious, never to recover consciousness again. He asked Dr. Haldane whether it would be possible to invent a machine capable of detecting carbon monoxide, so that rescue parties going down into a mine would be warned when there was danger. Shortly afterwards he pointed out that nature had provided us with a machine of the greatest delicacy, namely, mouse. So rapid is the circulation of these little creatures that an atmosphere which would take 30 minutes to affect a man would cause a mouse to become helpless in about three minutes. Inasmuch as most dry coal dust was to be found in the roadways of the mine, there would be found in a hurry to get out after an explosion, but to retire into the recesses of the mine away from the large roads, and re-pletion, in which 56 men were lost, all might have been saved if they had remained in their working places. The case of Roderick Williams deserves notice. He was a fireman at the Tylorstown explosion. Finding his road blocked by after-damp, he retired to some old workings, where he remained an hour till he was rescued. On a previous occasion he saved the lives of a whole company of men by forcibly preventing them getting past him to

the shaft. They were saved; but one man, who was too strong for him, got past, and was afterwards found dead into a mine after an explosion could not be over-rated. But intelligence must be exercised so as not to drive poisonous air into places where men may be in refuge.

The idea of a contrivance which would enable a man to breathe in a poisonous atmosphere was of old date. But the first practical form of apparatus was the design of Mr. Fleuss, who was still living, and had more than once risked his life in trying experiments with it. Stat-ions were being established all over the country at which men could be trained in its use. It could hardly be said to be perfect even yet, and a good many men had perished through accidents with its use, but there was no doubt that these difficulties would be overcome. Reference was made to the aerolith, which consists of a sack containing liquid air absorbed in loosely packed asbestos, and was one of the latest applications in a practical way of the work done by Sir James Dewar. There was one apparatus he had great hopes of. It consisted of a bag containing sodium, potassium-peroxide, and this extraordinary chemical seemed as though expressly designed for breathing apparatus, for when damped it exhaled oxygen, leaving caustic soda and potash behind, which in their turn absorbed carbonic acid. It would be perfect were it not that the chemical was very inflammable, and two men, one in Germany, and one in London, had been injured by its use."

#### THE SITUATION AT SYDNEY MINES.

"Personally I do not think that there will be any Grand strike in Sydney Mines," said S. B. McNeil, Grand Master of the P. W. A. to the Morning Chronicle. "The U. M. W. A. to the Morning there; in fact they likely will for not to do so would be an admission that they have been so badly worsted in their fight with the P. W. A. at the mines of the Dominion Coal Co. and Inverness further. But at Sydney Mines the strike may great strength. Only at Florence has the U. M. W. got any foothold at all, and if they bring their men out there they will be even more badly beaten than they have been at Glace Bay and Inverness."

Glace Bay, July 26.—The fourth week of the struggle between the U. M. W. of A. and the Dominion Coal Co., which opens to-morrow may be the decisive one. Claiming that they will have an out-conditions by next Tuesday, the Company are apparently embarking on an aggressive policy. Working on the assumption that the majority of the strikers are not prepared to live on two dollars a week for any considerable time in order to win recognition for the U. M. W. they are seemingly embarking on a decisive course of action with the object of creating a break in the U. M. W. ranks. This is what some of the strike leaders admit they have feared more than any other contingency.—Hx. Chronicle.

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**BULL DOG TOBACCO,**

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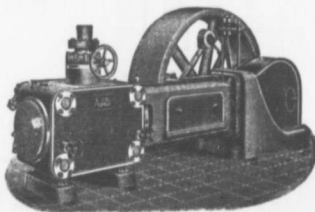
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Time Table No. 26, Taking effect at 1 a. m. OCT 11TH., 1908

EASTBOUND		STATIONS.	WESTBOUND	
Read Down	No. 52 No. 51 p. m.		Read Up	No. 53 No. 52 p. m.
L 10 45	L 3 30	TUPPER JUNCTION	A 10 3	A 3 55
S 10 51	S 3 36	PORT HASTINGS RY	S 10 27	S 3 57
A 11 10	A 4 06	PORT HASTINGS	A 10 02	L 3 10
	L 4 13	TROY	F 9 52	
	F 4 5	CHERISH	S 9 38	
	S 4 55	JETIQUE	F 9 32	
	F 4 59	CRAIGMORE	S 9 18	
	S 5 06	ATHERTONS FOND	F 9 47	
	F 5	PORT HOOD	L 8 32	
	A 5 33	GLENCOE	A 8 27	
	S 6	MABOT	S 8 14	
	S 5 53	GLENDYVE	S 7 57	
	S 6 16	BLACK RIVER	F 7 43	
	S 6 25	STRATHLORNE	S 7 27	
	6 43	INVERNESS	L 6 43	
	S 7 29			
	A 7 15			
	p. m.			

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Natural gas was produced in the counties of Welland, Haldimand, Norfolk, Kent, Essex and Bruce, in Ontario and at Medicine Hat, Alberta; the sales from the Ontario fields constituting over 95 per cent. of the total. The total receipts from gas sold in 1908 show an increase of about 24 per cent. over the receipts of 1907 and are now larger than at any time since the gas was first used.

Complete statistics of cement production in 1908 have been received from twenty three operating plants. The total quantity of cement made was 3,495,961 barrels as compared with a total 2,491,513 barrels made in 1907, showing an increase of 1,004,448 barrels or over 40 p. c.

The total sales were 2,665,289 barrels as compared with 2,436,093 barrels in 1907, an increase of 229,196 barrels or over 7 per cent. The total daily capacity of the 23 plants was about 27,500 barrels as compared with an operating capacity of 14,300 barrels in 1907. The operating plants were distributed as follows:—One each in Nova Scotia, British Columbia and Manitoba, the latter manufacturing a natural Portland, two in Alberta, three in Quebec province and 15 in Ontario. Of the 23 operating plants, 12 use marl and clay, ten use limestone and clay, and one blast furnace slag.



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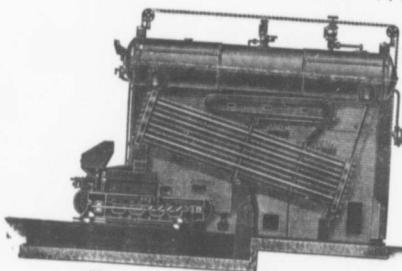
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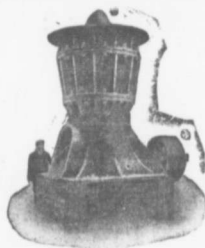
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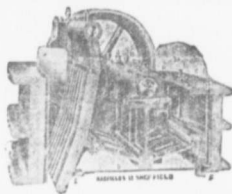
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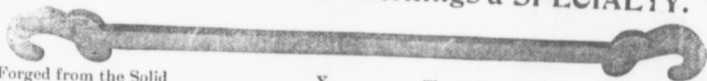
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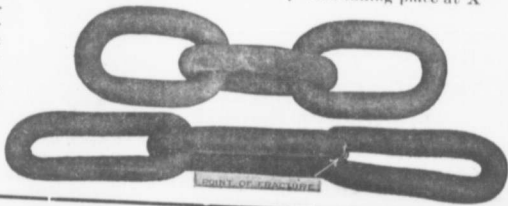
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**Alexander Dick,**

General Sales Agent.

GENERAL OFFICES, GLACE BAY, NOVA SCOTIA, CANADA.

# CUMBERLAND

## 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

Mined in the Province.

Mines

SPRINGHILL

N. S.

Head Office

MONTREAL