

MARITIME  
MINING RECORD  
AND  
COAL AND METAL TRADES JOURNAL

Dr. R. Bell  
Geol. survey dept.

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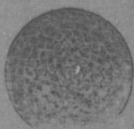
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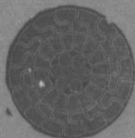
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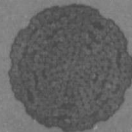
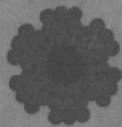
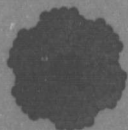
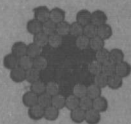
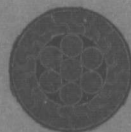
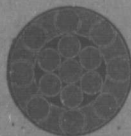
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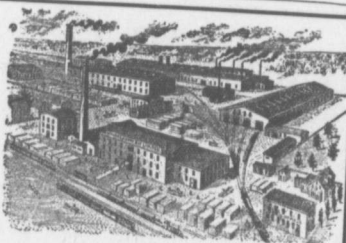
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26 Mixed from New Glasgow	8.00
67 Mixed from Pictou	10.55
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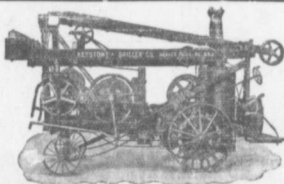
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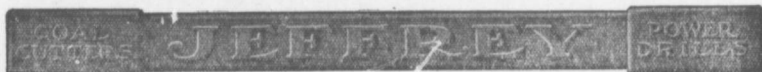
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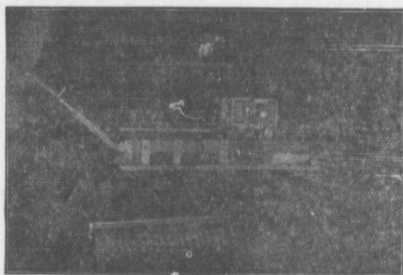
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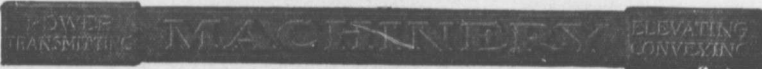
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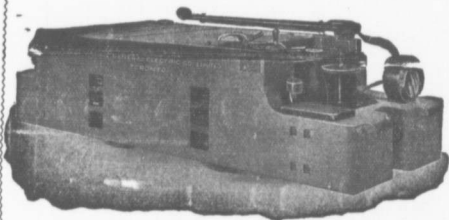
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William Hall, ex-mayor of Springhill, and ex-manager of the collieries, died Friday last. He was noticeably failing in health for some time past. He came to Springhill from the Albion Mines where he was underground manager—in the early seventies. Through his economical management he made money for the Springhill Coal Co. The deceased was well known and well liked in mining circles in Cumberland and Pictou Co.

To be....

# MARITIME MINING RECORD

Vol. 10, No. 12. Stellarton, N. S., Dec. 25th. 1907. New Series

## 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.

DEC. 25

### SCIENCE AND ART OF MINING.

#### VENTILATION.

Q.—What is practically the best—A large number of small air-ways, or a fewer number of large air-ways? State your reasons.

A.—In comparing a large number of small air-ways with a small number of large air-ways there is very little that can be said in favor of the former, and very much that can be said in favor of the latter. In fact, it seems to me that the only circumstances which can warrant the maintenance of a large number of small air-ways in a mine are those in which the air-ways, having been made through the goaf, have greatly contracted, due to the crush of the sides and roof and the upheaval of the floor of the seam.

In such circumstances, if the resources of the mine are nearing exhaustion, and there is plenty available power in the fan and fan engine, without the installation of larger plant, it may be urged that the expense of enlarging the air-ways was not warranted by the benefits that might result. Except in such extreme cases as this, however, no sensible being can recommend a large number of small air-ways as being preferable to a fewer number of large air-ways; and I cannot conceive of any colliery manager or mining engineer who chances to have the laying out of the workings of a large colliery, adopting a large number of small air-ways as the best system, from any point of view, on which to ventilate the mine under his charge. True it is, that very large air-ways are very impracticable in some mines where

the height of the seam is small and the nature of the roof tender and friable. The size of mine air-ways greatly depends upon the thickness of the seam through which they are to course, and the nature of the roof plays a great part in determining their width. It is often possible to maintain a narrow air-way without the roof breaking down when, if the air-way were made of greater width, the roof would very likely break down, and considerable expense be entailed in thereafter repairing and maintaining it.

However, even in thin seams, the air-ways ought always to be of a fair size. The roof or floor should be ripped, and the air-ways generally should be of such a size that a person can traverse them without getting down on his knees, or even full length, and performing the wriggling process which has so often to be resorted to in passing along the underground air-ways in mines.

Perhaps the greatest and most potent objection, however, which can be urged against a large number of small air-ways, is the great ventilating pressure required to force the air through them, as compared with the comparatively small power that would be absorbed in coursing the same quantity of air through a fewer number of large air-ways.

To elucidate this point so that the reader cannot fail to clearly understand it, let me assume a concrete case. Suppose we have ten small air-ways, each 2 feet high and 4 feet wide on the average, and we have also two air-ways 5 feet high and 8 feet wide, and we wish to determine the relative powers absorbed in coursing a certain quantity of air per minute through the ten small air-ways and through the two large airways respectively.

It will be noticed at the outset that the sectional area of the combined small air-ways is exactly the same as the total sectional area of the two large air-ways, and this I have arranged so that the comparative merits of the two systems may be more justly considered. Had I made the total sectional area of the small air-ways less than the sectional area of the two large air-ways, the former would have been placed at an unfair disadvantage, because the air would have had to travel at a greater velocity in the small air-ways than in the large

air-ways, and considerable additional power would have been absorbed thereby in the case of the small air-ways, and a just comparison of the respective merits of the two systems rendered, if not impossible, at least is a little more difficult and complicated. By having the sectional areas equal, the velocities are equal, and the powers absorbed in each case due to that source are also equal; we have, therefore, to consider only the total rubbing surface in each case to determine the respective merits of the two systems, and this, it seems to me, is the only fair ground for comparison.

We will assume also that both the ten small air-ways and the two large air-ways are of equal length, as to make either the one or the other the longer would again be to incur the stigma of unfairness.

The total sectional area of rubbing surface is the only fair ground on which to base a comparison. Well, let us now ascertain the total sectional area of rubbing surface in each case.

The rubbing surface in the ten small air-ways total—  
and the rubbing surface in the two large air-ways equals—

Now, the ventilating pressure necessary to produce ventilation varies directly as the rubbing surface, so that if 10 lb. of ventilating pressure per square foot were necessary in the case of the two large air-ways, no less than 23.08 pounds per square foot would be required in the case of the ten small air-ways.

This is got thus—  
 $10 \times 120$

52 equals 23.08 lbs. nearly.

Further, for the same quantity of air per minute, 2.3 times the power required in the case of the two large air-ways would be necessary in the case of the ten small air-ways.

This simply means, in practical form, that if, say, one ton of coal was sufficient to provide steam to drive the fan engine at the colliery, with two large main air-ways for 24 hours, it would take at least two tons six cwt. of the same class of coal to do the same work in the same time at the colliery having the ten small air-ways.

Again, methinks that two large main air-ways could be more easily and more cheaply kept in good condition and could be more profitably utilised (such as for haulage purposes etc.) than could the ten small air-ways, which would probably be of little use except as air-ways.

No, personally, I would certainly prefer a small number of large air-ways to a great number of small ones.

#### GEOLOGY.

Q. 11.—Describe the chief characteristics of the carboniferous strata, and of the strata overlying and underlying them in ordinary sequence.

A.—The carboniferous formation consists largely of three kinds of rock, namely, carboniferous, or mountain limestone, shale and coal. It derives its name from the Latin word *Carbo*, which forms one of its most conspicuous features. The mountain limestone which forms the lower part of the carboniferous formation stretches from the West of Ireland eastwards for a distance of 750 miles, across England, Wales, Belgium, into Westphalia. It attains its maximum thickness in Lancashire, where it exceeds 6,000 feet. But as the limestone is traced northwards, it is found to diminish in thickness, until in Scotland it is reduced to a few beds, each only a yard or two in thickness. From this change in the character of the rocks, the inference is drawn that the land lying to the north supplied sand, mud, and drifted plants which prevented the thick limestone from extending northwards. There can be no doubt that while this mass of limestone was being built up, the wide area of deposition in Western and Central Europe was undergoing a gradual depression. This conclusion is borne out by a few considerations. The organic contents of the lower and upper parts of the limestone are uniform throughout. The sedimentary strata that replace the limestone on the northern margin are also several thousand feet thick, and from top to bottom they abound with evidence of shallow water conditions of deposition. The frequent occurrence of ripple-marked and sun-cracked surfaces, the preservation of remains of terrestrial vegetation—some of it in its position of growth—proves that the mass of sediment was laid down in shallow water not far from the margin of the land. But probably the most interesting evidence of long-continued subsidence is furnished by the history of the coal seams. In the successive strata of a coal-field we are presented with the records of a prolonged period of subsidence, probably marked by longer or shorter intervals of rest. These more stationary periods are indicated by the coal seams, and their relative duration may be inferred from the thickness of the coal. The carboniferous flora must have been abundant, consisting almost entirely of flowerless plants, and the same species and genera ranged over the whole world, for their remains are found in carboniferous strata from the Equator to the Arctic Circle. Ferns, lycopods, and equisetacea, constituted the main mass of vegetation. The most abundant kinds of fern being *Sphenopteris*, *Neuropteris*, *Pecopteris*. Among the lycopods, the most common is *Lepidodendron*. Equisetaceans abound in the carboniferous swamps, the most frequent being *Calamites*, *Sigillaria*, from the seal-like impressions of the scars, and *Stigmaria* (roots).

The carboniferous system in Europe presents at least two well-marked sub-divisions. In the lower section the strata are largely marine,  
Continued on page 18

## CONNELSVILLE COKE

The first step in the manufacture of coke is the mining of the coal. In the infancy of the industry, the mining operations were carried on somewhat aimlessly, resulting in loss of much coal, but years of experience and the increased value of the coal have brought about much better methods. The double entry system of mining is used in the region, and about eighty-six per cent. of the coal is recovered. Under this system, parallel headings or entries nine feet high are driven; the rooms twelve feet in width are turned off at right angles from these, and the ribs are drawn as the miners retreat. The coal is carried to the surface in wagons or small cars of about two tons capacity, and dumped into the bins. From these it is drawn in steel cars or larries of from six to eight ton capacity out on the ovens and dropped through the tunnel head, or opening of the crown, into the oven. In dropping into the oven the coal naturally assumes a pyramidal shape and must be leveled. This operation consists in leveling the coal to an even height all over the oven, and is performed by a man with a scraper attached to a piece of pipe about fourteen feet long. The oven door is then built up of brick and daubed with a mortar composed of loam and coke ash dust. When the oven is first put in blast the charge of coal is ignited by means of wood and hot coal or coke, but when in regular operation the charge is ignited by the heat retained in the oven from the coking of the preceding charge. When the oven is in good condition it usually requires about one-half hour for the charge to ignite. During the period of initial heat a very light bluish smoke issues from the oven which gradually increases in quantity and darkens in color until the oven goes off with a puff and the coal is burning. The amount of coal charged varies as the length of the burning period is decreased or increased. Coke which has been burned 72 hours is usually called foundry, while that burned 48 hours is called furnace coke. After the oven has been burned the requisite number of hours it is said to be burned off, the door is torn down, and the red hot mass of coke is quenched or watered by the drawer. Water is squirted into the ovens by means of a gum hose and a three-quarter inch steel pipe about eight feet long. The watering process consumes about one-half hour and about eleven hundred gallons of water per oven. The coke is then drawn by means of a scraper, similar to that used in leveling, loaded in barrows and wheeled to the cars. As in all other industries, modern mechanical devices have been adopted in the region to increase the safety of the employees, to save time, reduce labor and to overcome the evils of an insufficient labor supply. The modern steel fan with a capacity of from two to four hundred thousand cubic feet of air per minute, has replaced the old ventilating furnace; electricity and compressed air are taking the places of the mules on the mine, haulage roads and on the larry tracks;

an electric driven coke drawing machine is drawing and loading a large amount of coke each day; (by January 1st next about 40 of these machines will be in operation in the region); at the most modern plants, the waste heat from the ovens is utilized **Galley THREE**

to fire the boilers; the mine water is pumped by electrically driven pumps; concrete and steel are replacing wood in the construction of tipples, bins, and trestles, and the silica brick instead of the old fire clay, is now used universally in the construction of the crowns. The first silica brick oven in the region was built at the Valley Works of the H. C. Frick Coke Company in the spring of 1893, and to-day after fourteen years of continuous service the oven is as good as new.

## INVENTION THAT MAY TAKE PLACE OF TURBINE.

The question as to whether the turbine engine—which in recent years has revolutionized marine engineering—is about to be surpassed is suggested by an invention made by a Scotch marine engineer living in Liverpool. He has brought to perfection a "Radial" engine. This inventor, who is a chief engineer on a well-known Liverpool liner, in an interview with a press representative, said that for many years there had been a hunt for the ideal engine. Parsons tried to do it by getting right away from the reciprocating engine, but he failed to reach his ideal, because he could not get a steam-tight piston. "The idea of my radical engine," added the inventor, "came to me in the night when I was on the ocean. Giving up the idea of getting a steam-tight piston on the rotary principle, I applied myself to the problem of getting a radical piston with steam direct upon it. My idea was to get the full pressure of the steam on one piston, and no back pressure on the one following."

This is his invention, and the advantages he claims for it are the direct push around instead of the stopping and starting at each end of the stroke, as in the case of the reciprocating engine, that with its steam-tight piston the steam must do its work or remain in the boilers, and that it can take the full benefit of the steam pressure, and also the steam's velocity, whereas the turbine depends on velocity alone. Although the tests are not complete, the inventor considers his engine will be one-third better than any other engine of equal piston area, and that its expansion will considerably exceed that of the ordinary reciprocating engine. The cost would be much less than that of the turbine engine. It had the same power astern as ahead, could go at any speed, and was so simple there was hardly any possibility of anything going wrong. The engines has been inspected by many marine engineers. It has been protected in all parts of the world, and a big German firm have already made a substantial bid for the patent rights. There is no part of the engine that could not be made in a small engine shop. It needs the smallest amount

of packing and oil, and, astounding as it may seem, in its internal construction it has neither nut nor bolt.

#### THE COLLIER'S CALLING.

Although the collier's calling is a dangerous and laborious one, it is not, in the ordinary sense, unhealthy. According to the Inspector of Mines for the Liverpool district, "The occupation of the coal miner is, generally speaking, a healthy one. There are, no doubt, times and places when the atmosphere he has to labor in might be cooler and purer, mechanical ventilation there are very few mines of but with the now almost universal adoption of which he would suffer actual discomfort or risk of injury to his health. As compared with occupations above ground, where the worker is exposed to all kinds of weather, the miner's life has its compensations." It needs them.

#### SPARKS FROM LOCOMOTIVES.

If the latest invention for destroying sparks from locomotives be as effective as those interested in it hope, it must prove of great importance to the railway and agricultural communities. Innumerable attempts have been made to devise such a mechanism, but while many have managed to "kill" the sparks they have also had the effect of diminishing draught. The damage done by sparks in setting fire to stacks and other property along the railroad is so considerable that, according to a New Zealand paper, the Government six years ago offered a prize of 3,000 pounds for a spark arrester, so that their settlers along the railway lines might no longer have to complain of crops being fired. The prize was not won. It might still be worth enquiring about.

#### COAL MORE THAN RUBIES.

To his class in Glasgow University, Professor Latham delivered a lecture, taking as his subject, "The Rise and Progress of the Mining Industry." We give a synopsis of the lecture:

The importance of mining, he said, was shown by the fact that when we wished to divide human history into a few periods we turned to the metals as the standards by which to measure man's industrial development. A large number of mining enterprises were commercial failures, and this applied with especial force in the case of mines other than coal. There were to-day between 500 and 600 lead mines in the country, of which scarcely fifty were paying a profit, and there were 104 copper mines making returns of ore, of which he did not think more than a dozen were worked profitably. Indeed, he thought they might safely assume that the proportion of unprofitable mines under those heads was about ten to one. They would, he thought, agree with him that mining enterprise need not be the risky business it was, and that the disproportionate number of unsuccessful mines

might be considerably reduced. Many such had been opened in strata where there existed little or no prospect of success. There were also mines that owed their abandonment to want of sufficient capital; while the failure of others, on the other hand, was due to overloading the mine with unnecessary and unproductive capital. Professor Latham went on to deal especially with the mining of coal, pointing out that all other branches of the mining industry in the United Kingdom were surely diminishing in importance, while coal was ever advancing. Not only as a means of direct employment did it overshadow all the rest, but probably it was no exaggeration to say that, in point of monetary value of the raw product, coal monopolised near upon nine-tenths of the mineral products of the United Kingdom. The professor proceeded to describe the gradual growth in the appreciation of the value of coal, and said that now, if all the mines of the precious metals were closed at once—if gold and silver were no longer obtainable for our use—society, after certain evolutions and adjustments in adopting other representatives of value, would go on as at present, whereas, let civilized communities be deprived of their coal, and it was difficult to see how they would hold together as before. Dealing with the proportions used in various industries, the lecturer pointed out that 40 million tons were employed for domestic purposes, 40 million tons were exported, and 70 million tons were used in the iron and steel works. It was a fair estimate that nearly one-half of all the coal produced in the United Kingdom, representing employment for 450,000 colliery workers, was absolutely dependent upon foreign trade. That meant that if from any cause our foreign trade ceased, the means of employment for our colliery workers would be reduced by one-half. Not only would interference with foreign trade diminish employment at collieries to that alarming extent, but it would have a very much further reaching effect and would paralyse all our leading industries. Britain's productions, Britain's sales, Britain's means of employment, Britain's wage-earning and wage-spending power would be diminished nearly one-half for the whole of her people. Such a condition of things meant absolute industrial ruin. Professor Latham afterwards described and illustrated the various means employed from early times up to the present day in coal mining; and showed how the loss of life had been reduced by the introduction of improved machinery, ventilation, and efficient inspection. Addressing himself to those who were entering upon the career of a mining engineer, he said that no vocation could be more useful, more worthy, or more honourable. There was none which they could follow with more advantage to others, or with greater moral or material benefit to themselves. The cry that the profession of mining engineering was overcrowded

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## - Rubs by Rambler.

It is the bounden duty of every well-wisher of his country, of every one who desires to see the masses prosper materially, socially, and intellectually, to say or do nothing which may tend to provoke unnecessary discontent. Indeed, it lies to the heart of every patriot to do all possible to prevent conflicts, minor or major, between capital and labor. I am aware there are those who dispute such philosophy—and I am sorry. Some of these are to be found among the workmen sitting in the chief seats as leaders. Every leader of a workmen's union, alive to his opportunities and responsibilities, will, on the other hand, give ready assent. McDonald, the foremost leader the Scottish miners have had as yet, gave adhesion to similar sentiments after he had gone through his first big strike. Bell, the leader of the British Railway men, gave lately tacit assent to similar sentiments, when he would not hear tell of an open conflict until every other available resource had failed. He stood firm in the conviction that peace was preferable to strife, though many were ready to denounce him as a quitter. Bell is an ideal leader. And what is my idea of such a one? Well, Ramsay Macdonald, with all his fluency, is not one. He was annoyed that peace was arranged before a blow was struck. Who is an ideal leader? Well that is no poser. He is one who leads and who will not budge from his position, when convinced he is right, though howling hordes call upon him to alter his course. We have some little leaders, in some parts of this Province, who think it is the first duty of a leader to be continually cursing capitalists, to be fomenting strife by railing at capital and denouncing its greed, trickery and tyranny. The men who never have a kind word to say for their employees ought to be watched. Indeed, they should be cast out the workmen's synagogue for if they are not themselves selfish to the core, they are inexcusably ignorant and thoughtless. At the time of the Springhill strike a little leader is reported to have said: "Pioneer v.; bring out Mechanic Lodge." That was a very curious speech. It is to be hoped the Mechanics were not "brought," but came out without compulsion. Neither Pioneer, nor the Sub-Council, nor yet the Grand Council can "bring" out any lodge of the P. W. A. Thank goodness the walking delegate is as yet an unknown quantity in Nova Scotia—keep the rascals out

Many of our native workmen look upon Belgians, Austrians and other Europeans as being very much behind the times. They are looked at as half barbarians. It is very funny how we have got it into our heads that we are the people, the real stuff, and all the others are simply following far off. If a Yankee or an Englishman or a Nova

Scotian—a Scotchman knows better—thinks that because many poor and strange looking people come from Europe that therefore the countries they hail from are but semi-civilized, they are a little bit mistaken. Why even from Austria we in this thought to be advanced civilization can learn something. In Britain, in America and in Nova Scotia boys of twelve years are permitted to work in the pit. They cannot now employ boys in Austrian mines below sixteen. A new Ministerial ordinance decrees that no young persons (boys under sixteen and girls under eighteen) shall be employed in mining work between 8 p. m. and 5 a. m., except that where there are two day shifts youths may work till 11 p. m. To prevent overstrain, the period of rest during work shall be an hour longer than in the case of adults, and except in special cases shall be so arranged that continuous work shall not exceed four hours at a time. No overtime is to be worked except when adult labor is not available, and even then the tasks must be suited to the strength of the workers. Any young persons kept at work on Sundays must be allowed a day off during the ensuing week. Exemptions from these regulations is only permitted when a medical certificate has been obtained to show that the young person (male) will not suffer in health from the task allotted. In the case of child labor (between the ages of twelve and fourteen), the mining officials before granting permission must satisfy themselves that the work (above ground only) is of suitable character, and that the hours do not conflict with school hours. No overtime, night work, or Sunday work is allowed.

We hear a good deal these days about the Chinaman and the Jap, and occasionally a growl about the Belgian, or other foreigner. Why are the Chinaman and the Jap so much denounced? They are undesirable, we are told, because they are immoral, etc., etc. Now I'm not so sure that these are the reasons. The most forcible reason operating in the minds of the workmen is, I think, that the Jap is ready to work at all times, and at a lower wage than the white man. Well, that is a good reason, perhaps, for the workmen being opposed to an influx of Japanese, but it may not be a sufficiently strong reason for any government to keep them out. Sometimes the truth comes sputtering out. There is at least one labor leader who is candid enough to declare that he is not opposed to the sons of the Orient, because they are filthy; quite the opposite. This labor leader in the Transvaal lately gave utterance to these significant words: "It is not the vices of the Chinaman that we fear, but the virtues." What did he mean? He meant that the Chinaman was frugal, industrious, patient, painstaking, and willing to do the task allotted to him; and, above all, that he did not lose time by frequenting drinking saloons. The

Transvaal labor leader must be a brave, plain-spoken man, with the courage of his convictions. The Chinese puzzle is easy of solution in Nova Scotia, if not so easy in the other Provinces. No employers in Nova Scotia will want to employ a Chinaman as long as a white man is willing to do half right.

I am ashamed, perfectly ashamed, as folks say, at the Colonial Standard. In a late issue it said it was quite content to be called by a contemporary, "John Thomas." And why content? Oh just because John Thomas was a good Scottish name.—The Standard said Scotch, but I never "call names." No wonder there is need of a Scottish patriotic co-operation when one whose forbears came from Scotland, and from high up in Scotland too—I mean the Highlands—is so easily forgetful. John Thomas may not be a name to sneer at, but it is not Scottish. Not by a long way. I was going to say "not by a jugful," but the force of association might make some one smile. I know there are O'Leary's and McLaughlin's and O'Gorman's, claiming to be Scots, but they ain't any more than is John Thomas. Thomas as a surname is a full league from being Scottish. If I were asked to make a guess to what country it particularly belonged I would say to Roberts and Griffin's country, or in short to Wales.

A word to my brother of the Conservative press. I might address a word at the same time to my kinsmen of the Liberal press, but then these might jump to the conclusion that I was disgruntled and that something had struck me, and thence a kick. Therefore, so that my good intentions may not be illily spoken of, I select my Tory brethren, and ask them to sit still while I give them a very short exhortation. I ask them if they think it is dignified or attractive journalism to be continually referring to Liberal papers as "pap fed," solely because they receive from the government a few odd jobs of printing for which I make no doubt they are paid no more than the jobs are worth. Surely the Conservative press do not think the publishers of these papers are liberal for the pap they get, and for no other reason. Why the patronage that the Sydney Record, or the Eastern Chronicle and other Liberal papers get from the government would not do, make them up or down. Some Liberal papers insist on getting a share of the government printing to satisfy their pride as it were, or so that they may be able to say they are not being passed by as nobodies. To me this pap fed cry of certain papers suggests "sour grapes."

#### SPONTANEOUS IGNITION OF COAL.

The old hypothesis suggested by Liebig, according to which the spontaneous inflammation of coal is due to the oxidation of the pyrites, can no longer be maintained. Spontaneous ignition, ac-

ording to the German scientist, Dr. Heideprim, would seem rather to be attributable to a direct oxidation of the carbon. In fact, carbon when heated has been found eagerly to absorb oxygen from the air, and this heating effect can be increased until ignition occurs. The part played by moisture in the process has not yet been determined. The physical condition of the carbon (hardness, size, etc.) are other factors influencing the process. In connection with a recent investigation of 300 cases of self-ignition, all kinds of mineral coal apart from anthracite were examined. In most cases the ignited coal was ordinary coal, and less frequently nut coal or coal dust. The higher the layers, the more readily will self-ignition take place. An efficient ventilation by channels in the coal layers and the thermometrical recording of temperatures by long thermometers inserted in the coal have been found to be good preventive measures, while the only available means of extinguishing such fires has been found to be a transfer of the coal and simultaneous flooding.—The Steamship.

#### A PECULIAR STRIKE.

Men are curious animals. They do indeed do strange things. From this charge Trade Unionists are not exempt. They frequently kick without knowing the cause. They are intensely careful and jealous of the dignity the prerogative of the Union. They profess to smil a rat when there is no rodent within a league or two. The following from a British paper shows how cranky some Unionists are:

An extraordinary dispute has arisen at Darnley Motor Works in Coventry. Tinsmiths employed there having struck work because the company insisted on paying them too much money. All workmen are paid on the bonus system, under which they receive bonuses in addition to their regular wages. This appears to be against the principles of trade unionism, though the arrangement worked out so well for the men that, with the exception of the tinsmiths, the unions did not object. The Tinsmiths' Union remained true to its principles, and did not allow its members to accept the bonuses. The firm meanwhile continued to credit the men with the bonuses to which they were entitled, and went so far as to open a separate bank account for each, so that the men could have the money at any time if permitted by the Union. At last, says the "Autocar," the accumulated funds presented too strong a temptation, and two-thirds of the men decided to have their portion regardless of consequences. They were at once expelled from the union, and the rest of the tinsmiths called out of the works. The men who took the bonus, however, started a little union of their own, and are now finding good tinsmiths to replace those who have preferred to stick to the union and refuse the extra money.

## AROUND THE COLLIERIES.

Springhill is doing well; there has been no trouble for a month and a half.

Affairs are running smoothly in Springhill, the 'Tribune' man to the contrary notwithstanding.

The lodgements east and west of No. 2 slope, Springhill, are finished and are capable of containing 8 days water, or the drainage of No. 1 and No. 2 seams for that period.

Springhill is to have another Board of Arbitration. That, with the Nickleites and other Xmas frivolities should furnish sufficient amusement for the people, for this merry season.

Banking has already commenced at Bridgeport. A C. B. paper says 1,000,000 tons will be banked there. That is rather a big contract. Probably 100,000 tons are meant.

During the past few weeks there has been a series of mine explosions in the United States, causing fearful loss of life. The exact number killed in the three big mine explosions cannot be much short of 750.

The North Atlantic Collieries Co'y are looking for a steamer suitable for coasting purposes. Notwithstanding the much noise about Norwegian vessels destroying the coasting trade it is impossible to get schooners when they are wanted.

The government night school also the preparatory and technical schools in Springhill, are going full swing. No young man need go through life, without a good, common school education in this Province, and certainly Springhill has all the facilities for acquiring it.

The Gd. Council of the P. W. A. meets in New Glasgow this week. The matter to come up for discussion is the request of the D. C. Co'y for a renewal of the 3 yrs. contract. The company is willing to advance the low price men, but wants a reduction on pillar work and an increased price for coal supplied workmen.

In a note from Mr. H. S. Poole, who is presently in Cheshire, England, the Record is requested to give his native towns-men Mr Poole's best wishes of the season. Mr. Poole expresses the hope that Stellarton will continue to prosper. Making one job of it, the Record wishes all its friends and patrons a Merry Xmas and a happy New Year. To wish a man a happy new year has breadth and meaning to it. A man can't be really happy who fails to pay the printer. So in wishing our patrons happiness we may not be wholly unselfish.

The Dominion Iron and Steel Co. are testing the Cowans areas at Port Morien. Two drills will be set to work. The object of the boring is to discover the outcrop on the southern or south western side. This, the officials of the Steel Co. think, can be best done by finding the basin of the top or overlying seam.

The Acadia Coal Co. is putting down a bore hole near Potter's brook. The object is to ascertain the nature and thickness of the metals in the vicinity. It may also have for an object the testing of Dr. Ami's theory that the main seam extends in a more northerly direction than formerly supposed.

The Drummond sixteenth level is now in eight hundred feet further westerly than the level in the lift above. The coal as the level proceeds is turning southerly and the face of the level is now further to the deep than the face of the 'sump,' thus proving that the fault will once more have to be shifted on the map. This 'fault' is a heart break to the geologists. It won't stay still in one spot, but is continually descending.

The Dep't of Labor has nominated Mr. Hiram Donkin as arbitrator for the Cumb. Ry. & Coal Co. in the matter of the men's latest application. The Record is sure Mr. Donkin did not seek this appointment, and the Record thinks, seeing Mr. Donkin is an official of the local government that he were better out of the scrape. The Record's advices from Springhill are to the effect that the better class of men want no more strife at the present time. A conciliation board was never meant to arbitrate on something that might happen in the future. Somebody, and in this instance it is not Mr. Cowans is making a bad mess of the whole business.

The Steel—Coal suit excited considerable interest in Halifax last week. As in Sydney the sympathy of a majority seemed to be with Steel. The lawyers who were in court seemed to think that Coal had at least as much of the argument as Steel. The audience in the court room thought at first coal had a good case, then it thought after Nesbit had finished his argument that Steel was strong, and then when Ritchie replied for Coal, it did not know what to think. They sympathized with both. Judge Longley did not sit on the bench when the Coal side was being argued, but he sat next Judge Russel when Nesbit had the floor. The Herald says Mr. Nesbit has a musical voice. Perhaps so, judged by what the select few calls finished music. His voice is not round—so it must be the other thing. Ritchie for the Coal Co'y made a fair show, but he needs a Westinghouse.

for they include the carboniferous limestones; in the upper part they consist mainly of sandstones, shales, fireclays and coal seams. The lower section, or marine type, consists of Millstone Grit, flagstones, sandstones, and shales, with thin seams of coal and bands containing marine fossils. Thickness, 400-1,000 feet to 5,500 feet in Lancashire. Carboniferous Limestone, consisting of massive marine limestones and shales. Thickness in South Wales 500 feet, increasing northwards to more than 4,000 feet in Derbyshire and to about 6,000 feet in Lancashire, but diminishing northwards again into Scotland. The base of the carboniferous limestone series passes down conformably into the Upper Old Red Sandstone. The Upper Section or Lagoon type contains the Coal Measures, with red and grey sandstones, clays, and thin limestone, resting upon a great thickness of white, grey and yellow sandstones, clays, shales, and fireclays, with numerous workable coal seams. Thickness in South Wales, 12,000 feet; South Lancashire, 8,000 feet; Central Scotland, 3,000. The total thickness of the carboniferous rocks reaches sometimes to 20,000 feet.

The strata overlying the carboniferous are the Permian from the Russian Province of Perm, where they are well developed. They consist of the upper red sandstones, clays and gypsum, 50 to 100 feet thick in the East of England, but swelling out west of the Pennine Chain to 600 feet thick. Magnesian Limestone—a mass of dolomite ranging to 600 feet in thickness, and the chief repository of the Permian fossils. Marlstone, a hard brown shale with occasional limestone bands. Lower red and variegated sandstones with conglomerates. This division attains to 3,000 feet thick in Cumberland, but is hardly represented in the East of England. The sandstones of the Permian system are usually bright brick-red in colour, owing to the presence of earthy peroxide of iron, which serves to cement the particles of sand together, and for this reason is generally unfossiliferous. In Britain the Permian rests unconformably on the carboniferous system.

The strata underlying the carboniferous system are the Devonian, named by Sedgwick and Murchison after the county of Devon where they studied its details. It occurs in two distinct types, which bring before us the records of two very different conditions in the geography of these regions during the period when the rocks composing the system were being deposited. The ordinary type which is called Devonian represents the tracts that were covered by the sea, and has preserved the remains of many forms of the marine life of the period.

The less frequent type is characterised by thick accumulations of sandstones, flagstones, and conglomerates that were laid down in lakes

and inland seas. This type is known by the name of Old Red Sandstone.

As the science of geology is a vast subject, and one that requires years of study to acquire an elementary knowledge of, it is impossible to give other than a brief outline of the subject.

### CO-OPERATION AND MINES.

The President of the North of England Institute of Mining and Mechanical Engineers, in his address at the recent annual meeting, said it would be interesting and useful to consider the direction they were likely to travel in the future. One or another of two paths they would, he believed, follow, the one leading to Socialism—the ownership and exploitation of the mines by the State—and the other towards co-operation—the ownership and exploitation of the mines by the workmen engaged in them. The first, he believed, would lead to disaster, the latter, to the advantage of capital and labor alike, and, through them, to the country generally. He believed that the object the Socialist thought could be obtained through the State could be obtained more satisfactorily by co-operation. The working man, however, had hardly reached the stage in social evolution that would enable him to conduct successfully colliery enterprises. He was ignorant of the elements of political economy as applied to coal-mining, commerce, and business generally. It was evident that there was a very prevalent belief amongst the miners as a body that, to quote one of their leaders, a county councillor, "In future wages should not be ruled by prices, but prices by wages." Until miners realised that that was impossible it would be hopeless for them to undertake to run a colliery of their own. Besides being better versed in political economy and commerce, the miners must learn to put more confidence in their leaders, before they could hope to manage a colliery successfully. He did not believe that a co-operative colliery could not tide over a few years of bad trade. From a careful examination of the results of trading during bad years he found that the receipts would be sufficient to pay a so-called living wage, and so long as the men got that, they could wait for the prosperous years, for high wages, and for interest upon their capital. Moreover, after a few years, a reserve fund would have been set aside sufficient to pay good wages and interest on capital during the bad years. A difficulty that was sometimes mentioned in connection with co-operative collieries was the want of capital amongst working miners. That, if it existed, was, in his opinion, due to the want of a little self-denial on the part of young men. Young men should postpone marriage until 27 or 28 years of age, instead of marrying soon after they came of age. Moreover, it would

give the girls the opportunity of learning some of the duties of wifehood and motherhood, and also of acquiring more physical strength. A miner made as much again at 24 or 25 years of age as he did at any time of his life, and, the support of a wife and four or five young children being fairly put at about 20s. per week, it followed that the unmarried miner of 25 could make 20s. per week. By the time he was 27 therefore, he could have saved £300, and other classes of labour a smaller sum in proportion. It would not be necessary, moreover, that the whole of the capital should be held by the workmen interested; some could, and no doubt would, be supplied, as at present, by the general public. In distributive co-operative societies alone he estimated that the miners of Northumberland and Durham had £2,000,000 invested. Productive co-operation, however, had not been a success so far as mines were concerned. The speaker instanced a large number of cases in which ventures of this kind had proved failures, and proceeding said that, great as the advances were that the miners had made since the foundation of the institute, they required further education in commercial knowledge, thrift, confidence in their fellowmen, before they would be capable of carrying on with success an undertaking so uncertain as a colliery and subject to such fluctuations in value. It was the lean years that would try co-operative collieries, and reserve funds must be set aside in the fat years to meet that. But he was afraid that, whatever hopes they might have for the future, and hopes he certainly had, in the present state of education amongst the miners, not even such a leader as Joseph himself would induce them to make so necessary a provision.

As the first aid movement is one of the most

modern and at the same time one of the most unique methods of rendering help in times of serious emergency, and as its popularity is daily growing more manifest, it is only proper that reference should be made to it in this report.

The first organization of the kind in Pennsylvania, and probably in the United States, was the First Aid Society organized at the Jermyon colliery of the Delaware and Hudson Co., in February, 1900, by Dr. M. J. Shields, a practicing physician and surgeon in the Anthracite region. The society consisted of about 25 men divided into squads of five men each; each squad had its captain, and was provided with a small box containing first aid appliances, such as cotton, a rubber tourniquet, flexible splints, olive oil, lime water, aromatic spirits of ammonia, a small glass and a spoon. There was also a folding stretcher kept along each gangway, and each member of a first-aid squad carried a pocket first-aid packet. This plan of organization provided for one first-aid corps along each gangway, and aimed to have the men so distributed that there would be one first-aid student to at least every 16 men employed in the colliery. The society as a whole, met twice a month, and at each meeting Dr. Shields, or some other physician, gave a short talk on physiology, anatomy, or first-aid, and also supervised a drill and demonstration of first-aid methods. As a text-book the "First Aid Manual," of the Saint John's Ambulance Association, of England, was used, but Dr. Shields has since written a small pamphlet to take the place of that book.

The Delaware, Lackawanna and Western Co. also began the methodical and systematic instructions of first-aid corps in 1900.

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## More Miners Wanted

Wanted by the Maritime Coal Railway and  
Power Co., Limited, at CHIGNECTO, N. S.

**50 Miners and Helpers.**

Apply to **JOHN A. ROY**, Mine Manager

Continued from page fourteen.

was only partially true, true inasmuch as it applied to the lazy, and unqualified engineer. There was no room for such as he, either at home or elsewhere, but on the other hand the qualified, able engineer had possibly more opportunities of advancement to-day than during any part of the whole history of the mining industry.

The following notice has been posted on a Durham pit head:

"The owners of this colliery are not in sympathy with such of their workmen as ought properly to contribute to the funds of the Durham Miners' Association, and yet refuse to do so. The owners are themselves, voluntary members of the Durham Coalowners' Association, and there can be no doubt that the present high rate of wages, in which all workmen participate is largely due to the early deliberations of these two associations."

*Priestleys*

**Mohairs**

— and —

**Lustres**

Have Excellent  
Wearing Qualities,

WILL NOT COCKLE  
== WITH RAIN ==

Best for —

**SPRING AND SUMMER  
SHIRT WAIST SUITS.**

All Ladies who wish to look well  
wear **Priestleys Dress Goods.**  
Greenshields Limited, Sole Agents.  
Montreal, Canada



**The TORNADO  
AIR POWER  
COAL DRILL**

is used extensively  
by the  
Dominion Coal Co  
Nova Scotia Steel  
and Coal Co.,  
Inverness Ry.  
and Coal Co.  
and others.

**Herzler & Henninger Mach. Works**  
Manufacturers of  
**H. & H. Coal Cutters & Tornado Coal Drills.**  
Belleville, ILL., U. S. A.



# CURTIS'S & HARVEY, LTD.

Manufacturers of all Descriptions of

# ...EXPLOSIVES...

BEST QUALITY ONLY.

Blasting Powder and Compressed Pellets, Dynamite,

Gelignite, Gelatine Dynamite and Blasting Gelatine.

**PERMITTED EXPLOSIVES.**

For use in Cascaes mines. suitable for all kinds of Work.

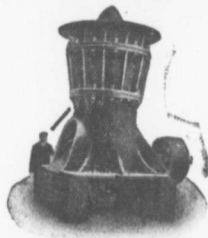
Bobbinite, Curtisite, Excellite, Kolax, Rippite, &c., &c.

**CURTIS'S & HARVEY, LTD.** HEAD OFFICE  
3 Gracechurch St. London, E.C.

AGENTS FOR NOVA SCOTIA

AUSTEN BROS. HALIFAX.

# HADFIELD'S STEEL Foundry Co., Limited. SHEFFIELD



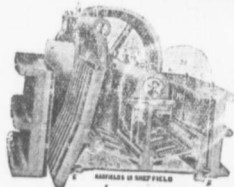
PERFECT GRATORY  
STONE CRUSHER.



CAST STEEL  
BRONZE BUSHED.  
SELF OILING

## WHEELS & AXLES

WE MANUFACTURE  
CRUSHING ROLLS,  
ELEVATORS,  
and Gold Mining Requisite



HADFIELD'S PATENT  
**JAW CRUSHER**

(Solid Steel Construction.)

The Parts that are subject to Excessive Wear are made of  
Hadfield's Patent 'Era' Manganese Steel and other Patented  
STEELS.

Sole Representatives of the Hadfield Steel Foundry Company, Limited, Sheffield, for Canada

**PEACOCK BROTHERS, Canada Life Building, MONTREAL.**

# CHAINS. CHAINS.

(All Sizes in Stock.)

## "EDGES" BEST SPECIAL CRANE CHAINS.

Can not be Excelled for **HIGH CLASS QUALITY** and **WORKMANSHIP**  
They are made of the very best brands of English Bar Iron and by Selected Workmen.

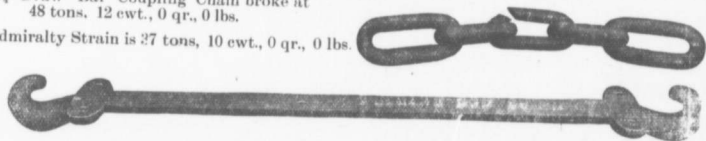
**Makers of every description of Chains**  
for Mining and all Engineering Purposes,

**Coupling Chains and Solid Forged Draw Bars**

**For Mine Cars, A SPECIALTY.**

This 1½" Draw Bar Coupling Chain broke at  
48 tons, 12 cwt., 0 qr., 0 lbs.

The Admiralty Strain is 27 tons, 10 cwt., 0 qr., 0 lbs.



**Edge & Sons, Limited,**  
**SHIFNAL, England.**

Draw Bar for Coal Car.

Tel. address "Edge" Shifnal.  
"Codes" A. B. C. and Bedford McNeills"

# The EMERSON Steam Pump,

**PULSOMETER TYPE,**

is exactly adapted to

**Coal and Ore Washing.**



It will handle water containing large percentages of coal dust, mud, sand or gravel without injury or interruption. There are no stuffing boxes or packing glands to cause trouble or expense. Well adapted for use underground. There is no exhaust steam and for lifts up to 150 it is unsurpassed. Will work with air in the suction. Hang the Pump by a rope and connect it up with the boiler and that is all there is to it. Write for Catalogue.

**The Canadian Fairbanks Co., Ltd.**  
**Montreal, Toronto, Winnipeg, Vancouver.**



Synopsis of Canadian North-West.

Homestead Regulations.

ANY even numbered section of Dominion Lands in Manitoba, Saskatchewan and Alberta, excepting 8 and 36, not reserved, may be homesteaded by any person the sole head of a family, or male over 16 years of age, to the extent of one quarter section, of 160 acres, more or less.

Application for entry must be made in person by the applicant at a Dominion Lands Agency or Sub-agency for the district in which the land is situated by the father, mother, son, daughter, brother or sister of an intending homesteader.

The homesteader is required to perform the homestead duties under one of the following plans:—

(1) At least six months' residence upon and cultivation of the land in each year during the term of three years.

(2) A homesteader may, if he so desires, perform the required residence duties by living on farming land owned solely by him, not less than eighty (80) acres in extent, in the vicinity of his homestead. Joint ownership in land will not meet this requirement.

(3) If the father (or mother, if the father is deceased) of a homesteader has permanent residence on farming land owned solely by him, not less than eighty (80) acres in extent, in the vicinity of the homestead or upon a homestead resident duties by living with the father (or mother).

(4) The term "vicinity" in the two preceding paragraphs is defined as meaning not more than nine miles in a direct line, exclusive of the width of road allowances crossed in the measurement.

(5) A homesteader intending to perform his resident duties in accordance with the above while living with parents or on farming land owned by himself, must notify the Agent for the district of such intention. Six months' notice in writing must be given to the Commissioner of Dominion Lands at Ottawa, of intention to apply for Patent.

W. W. CORY,

SYNOPSIS OF CANADIAN NORTH-WEST MINING REGULATIONS.

COAL. Coal lands may be purchased at \$10 per acre for soft coal and \$20 for anthracite. Not more than 320 acres can be acquired by one individual or acted on the gross output.

QUARTZ. A free miner's certificate is granted upon payment in advance of \$2 per annum for an initial, and from \$30 to \$100 per annum for a company according to capital.

A free-miner, having discovered mineral in place, may locate a claim 1500 x 1500 feet.

The fee for recording a claim is \$5. At least \$100 must be expended on the claim each year or paid to the mining recorder in lieu thereof. When \$500 has been expended or paid, the locators may, upon having a survey made, and upon complying with other requirements, purchase the land at \$1 per acre.

The patent provides for the payment of a royalty of 2 1/2 per cent on the sales.

Placer mining claims generally are 100 feet square; entry fee \$5 renewable yearly.

A free miner may obtain two leases to dredge for gold of five miles each for a term of twenty years, renewable at the discretion of the Minister of the Interior.

The lessee shall have a dredge in operation within one season from the date of the lease for each five miles. Rental \$10 per annum for each mile of river leased. Royalty at the rate of 2 1/2 per cent collected on the output after it exceeds \$1000.

W. W. CORY,  
Deputy of the Minister of the Interior.

Intercolonial Railway.

XMAS AND NEW YEAR.

Will sell round trip Tickets at First Class One Way Fare between all Stations on the Railway and to points beyond St. John to Montreal Going Dec. 21 to Jan. 1, Returning Jan. 3, 1908. To points beyond Montreal, Going Dec. 24, 25, Returning Dec. 26, 1907, Going Dec. 31, Jan. 1, Returning Jan. 2, 1908.

First Class One Way Fares, to Montreal, added to First Class One Way Fare and One Third from Montreal, to Detroit, Mich.; Port Huron, Mich.; Sand St. Marie, Mich.; Port Arthur Ont., and Stations east. Going Dec. 21, 22, 23, 24, 25, 26, 29, 30, 31, Jan. 1. Returning Jan. 3, 1908.

Miners Wanted  
To Chew  
**BULL DOG TOBACCO,**

Because it is the only Tobacco which does not excite Thirst for Water after using

TRY IT!

The St. Lawrence Tobacco Co., Ltd.

—Montreal—

—W. B. Reynolds, Halifax Representative—

Brick! Brick!

The Westlair Terra Cotta Company

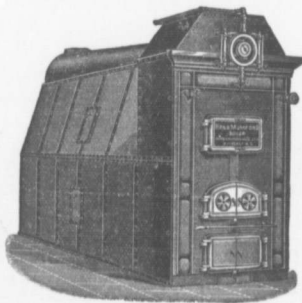
having taken over the business of the Stellarton Brick and Tile Co'y, and having installed more powerful and modern machinery, WILL BE PLEASED TO HAVE ENQUIRIES AS TO PRICE AND QUALITY.

Works—SYLVESTER

Head Office—STELLARTON.

GEO. E. MUNRO, SEC'Y, WESTVILLE, N. S.

Save Money by Buying a Robb-Mumford Internally Fired Boilers.



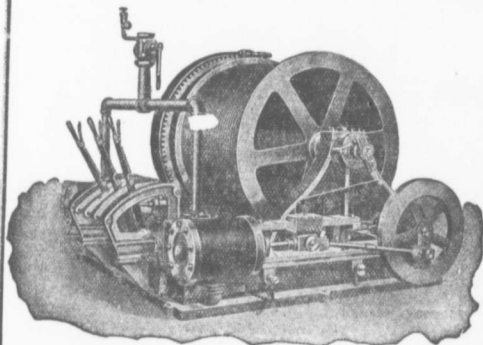
LOW FIRST COST.

SAVING IN FUEL.

DURABLE, SAFE.

Robb Engineering Co., Limited,  
AMHERST, N. S.

## "Lidgerwood" Hoisting Engines.



This is a view of our combined friction driven and brake and reversible link motion hoisting engine. The most economical, for mining purposes ever built.

We are the exclusive builders in Canada of the "Lidgerwood" Hoisting Engines, the standard of the world for mining and general contracting.

**Works, Montreal.**

**Branch Office, New Glasgow**

# Allis-Chalmers-Bullock, L't'd.

Contractors to Admiralty and War Office, also Colonial Governments.

## ALLAN, WHYTE & C'O'Y.

### Clyde Patent Wire Rope Works,

Cablegrams: "Ropery Rutherglen," **Rutherglen, Glasgow, Scotland.**

Coles, A. R. C. (111) & 114  
A. L. Liebersand Private.

# Wire Ropes

for  
Winding & Haulage  
in  
Collieries and Mines.

Aerial Ropeways, Suspension Bridges, etc. Specially flexible for Ore & Coal Discharging Cranes, Winches, etc.

The Nova Scotia Steel & Coal Co., Ltd., who use our Ropes largely, write that one of our Haulage Ropes at Wabana Mines has been in service for over 5 years, drawing over 1,750,000 tons in that time and is still good for further considerable service.

Agents in Nova Scotia:—**Wm. Stairs, Son & Morrow, Ltd., Halifax.**

Agents in New Brunswick:—**W. H. Thorne & Co., Ltd., Saint John.**

—Different Sizes and Qualities kept in Stock—

# CAPE BRETON COLLIERY.

NEW CAMPBELTON CAPE BRETON N. S.

SUPERIOR

## STEAM AND DOMESTIC COAL

SAFE AND CONVENIENT SHIPPING PORT

The Nearest Coal Port to Newfoundland

Just Inside Entrance Great Bras d'Or.

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

**J. T. Burchell Manager.**

## INVERNESS IMPERIAL COAL

INVERNESS RAILWAY and COAL COY.  
Inverness, Cape Breton.

Miners and Shippers of INVERNESS (BROAD COVE)

**Screened, Run-of-Mine Slack.**

—First Class both for Domestic and Steam Purposes.—

**BUNKER COAL** Shipping facilities of the most modern type at Port Hastings, C. B. for prompt loading of all classes and sizes of Steamers and sailing vessels.

Apply to Inverness Railway and Coal Company, Inverness, Cape Breton; Wm. Petrie, Agent, Port Hasting, C. B.

### INVERNESS RY. & COAL CO'Y

Time Table No. 23, Taking effect at 1 a.m. OCT 13 th. 1907.

EASTBOUND		STATIONS.	WESTBOUND	
Read Down	No. 54		Read Up	No. 51
a. m.	p. m.		a. m.	p. m.
L 10 55	L 2 50	P. TUFFER JUNCTION	A 10 55	A 3 25
S 11 01	S 3 55	PORT HAWKESBURY	S 10 45	S 3 27
A 11 20	A 4 15	PORT HASTINGS	A 10 27	A 3 10
P 4 25	P 5 25	TROY	P 10 17	P 3 05
S 4 28	S 5 28	GREGGINSI	S 10 05	S 2 55
P 4 20	P 5 20	JUDIQUE	P 9 55	P 2 45
S 4 05	S 5 05	CRAIGMOIR	S 9 35	S 2 30
P 2 15	P 3 15	CATHERINES POND	P 9 10	P 2 05
A 5 32	A 6 32	PORT HOOD	A 9 00	A 1 55
L 5 28	L 6 28	GLENCOE	L 8 55	L 1 50
S 5 22	S 6 22	MABOU	S 8 45	S 1 45
S 6 16	S 7 16	GLENDYRE	S 8 35	S 1 35
S 6 25	S 7 25	BLACK RIVER	S 8 25	S 1 25
S 6 48	S 7 48	STRATHLOREN	S 8 15	S 1 15
A 7 15	A 8 15	INVERNESS	A 8 05	A 1 05
p. m.			L 8 00	L 1 00

Trains make close connections at Pt. Tupper Jet with I. C. R. passenger trains, excepting the Maritime Express.

## MABOU & GULF COAL COMPANY, L'T'D.

Miners of the

### MABOU DIAMOND COAL.

Burns and Works like Bituminous;

Looks and Lasts Like Anthracite;

—IT HAS NO EQUAL.—

Mines, Piers and General Offices

**MABOU. CAPE BRETON.**

# North Atlantic Collieries, LIMITED.

Mines and Loading Piers, Port Morien, C. B.  
Miners and Shippers of **Cow Bay Basin Coals.**

EXCELLENT FUEL FOR  
**Domestic, Steamship  
and Railway Use.**

Recent analysis of the coals in several of the seams in this Basin—which will be persistently developed—show them to be remarkably low in ash and sulphur.

All modern appliances for Screening and picking, so that this coal can be shipped more than "reasonably free from stone and shale."

**Loading Piers at Port Morien C. B. Quick Dispatch.**  
Head Office, Halifax, N. S. Mines Office, Port Morien, C. B.

## Users of Steam

IF YOU WANT TO SAVE FUEL, Use

**B. & W BOILERS,** Over 6,000,000 H. P. in use.  
**Patent Steam Superheaters,**  
2,000,000 H. P. in Use.

Mechanical Stokers, Coal Conveyors, Electric Cranes.

—Circulars and full information on application.—

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LIMITED.

Rule and Print Special Blank Forms for Mining and other Industrial Corporations. BLANK BOOKS ruled to pattern and made in any Style of BINDING.

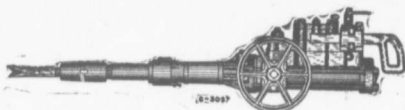
Loss leaf supplies of all kinds made to order.

135 to 137 GRANVILLE STREET.

### HALIFAX, N. S.

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





## HARRISON COAL MACHINE.

The first GOAL CUTTER to be put on the Market.

The valve is entirely independent of the action of the piston.

Therefore machine will not crowd back on the Runner.

If the Pick should stick in the coal, machine will not travel back against operator.

Machine is simple, rugged and has very few parts.

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## Sullivan Rock Drills.

Costs less for Maintenance,

and drill faster than any

other Drill on the Market.

May we tell you why?

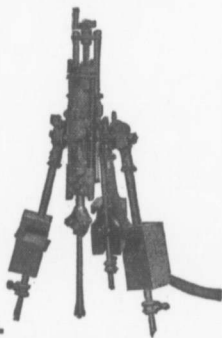
CATALOGUE 51

### Sullivan Machinery Company.

I. Matheson & Co. Limited, Agents. New Glasgow, N. S.

Claremont, N. H.

Chicago, Ill.



## RUBBER HOSE for Air Drills Pneumatic Tools, Steam, Suction, etc.

## "REDSTONE SHEET PACKING,

For highest pressures with Steam, Hot or Cold Water and Air.

The most durable and satisfactory Packing on the Market.

## RUBBER BELTING For Transmitting, Conveying and Elevating.

Unequaled for Durability and Power Transmitting Qualities.

— MANUFACTURED BY—

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Branches at Montreal, Winnipeg and Vancouver

Head offices, 47 Yonge Street, Toronto

MINING RECORD

# Acadia Coal Company, Limited.

STELLARTON, NOVA SCOTIA.

Miners and Shippers of the

CELEBRATED

## ACADIA COAL.

*Unexcelled for Steam, Domestic and General Purposes.*

**DELIVERED BY RAIL OR WATER.**

**SHIPPING PORT: PICTOU LANDING.**

Quotations Furnished Promptly on Application.

### MARITIME COAL, RAILWAY & POWER CO. Ltd.

Miners and Shippers of

## **CHIGNECTO HIGH GRADE COAL.** Steam AND Domestic

**Unexcelled for General Use.**

Shipments to all points reached by the  
Intercolonial Railway.

Offices and Colliery - - - Chignecto, N. S.

DAVID MITCHELL, General Manager.

# The BROWN MACHINE COY.,

New Glasgow, Nova Scotia.

## Coal and Gold Mining Machinery a specialty

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

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

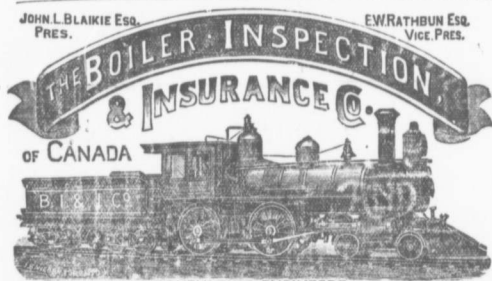
Screening plants are now in operation at Sydney, Springhill, Broad Cove, Port Hood and Westville Mines

Estimates cheerfully given

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CONSULTING ENGINEERS  
G.C. ROBB CHIEF ENGINEER HEAD OFFICE TORONTO

WHEN WERE YOUR  
.. BOILERS ..  
... LAST INSPECTED I ...

WRITE TO

G. W. JONES, Agent,

Halifax, N. S.

-OR TO-

A. BONNYAN, INSPECTOR

Amherst N. S.

## SCREENS.



Perforated Steel, Steel Wire. For miners and every other use  
Write for Special Catalogue.

**THE B. GREENING WIRE COMPANY, LIMITED.**  
HAMILTON, ONT. MONTREAL, QUE

# DRUMMOND COAL.

INTERCOLONIAL COAL MINING CO., Limited,  
WESTVILLE, NOVA SCOTIA.

MANUFACTURERS AND MERCHANTS SHOULD ADVERTISE IN THE  
MARITIME MINING RECORD Rates Moderate.

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

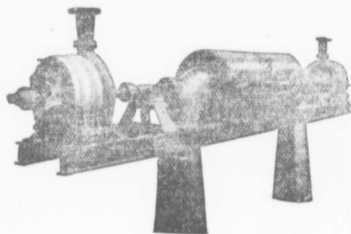
**BRIDGES**

TURNABLES, ROOF TRUSSES  
STEEL BUILDINGS  
ELECTRIC & HAND POWER CRANES  
Structural METAL WORK of all kinds

BEAMS, CHANNELS, ANGLES, PLATES, ETC., IN STOCK

**The JOHN McDOUGALL  
Caledonian Iron Works Co., Ltd.  
Montreal Que.**

**BOILERS:** All Sizes and all Pressures.



Two Worthington 3 stage Turbines and McCormick Water Wheels, built for Port Arthur, Ontario, Water Works. Combined capacity 1440 gall " per minute against 350 head.

**PUMPS**

Worthington Pumps for  
Water Works and Mines.

**Water Wheels**

Doble Water Wheels for high heads.

**Mill Machinery**

**Etc. Etc.**

**Head Office and Works : MONTREAL.**

District Offices:—MONTREAL, 82 Sovereign Bank Building.  
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# 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

Mines

SPRINGHILL

Mined in the Province.

N. S.

Head Office

MONTREAL

# Dominion Coal Company, Ltd.

✎ Miners of ✎

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

—Yearly output 3,500,000 tons.—

## ANALYSES.

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

	STEAM COAL	GAS COAL
CARBON.....	80 18 per. cent.	77 51 per. cent
HYDROGEN.....	5 11 " "	5 22 " "
OXYGEN.....	7 34 " "	6 72 " "
NITROGEN.....	1 16 " "	1 27 " "
SULPHUR.....	0 56 " "	3 07 " "
ASH.....	2 30 " "	4 10 " "
WATER.....	3 35 " "	2 11 " "
	100 00	100 00

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

Shipping facilities at Sydney, and Louisburg,  
G. B., of most modern type. Steamers carrying  
—6000 tons loaded in 24 hours.—

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

## :: BUNKER COAL ::

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

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

Prices. Terms, etc. may be obtained at the Offices or the Company.

**ALEXANDER DICK Genl. Sales Agent, Glace Bay, N. S., Can.**

DOMINION COAL COMPANY, LIMITED,  
DOMINION COAL COMPANY, LIMITED,  
DOMINION COAL COMPANY, LIMITED,

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171 Lower Water St., Halifax, N. S.  
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—and from the following agents—

R. P. and W. F. Starr, St. John, N. B.  
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Hull Blyth & Co., 4 Fenchurch Avenue, London, E. C.

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**G. H. DUGGAN.**

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