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New Series Vol. II No. 17 MARCH 10th. 1909 STELLARTON, N. S.

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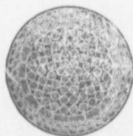
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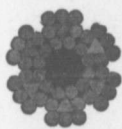
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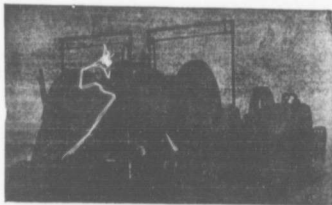
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No 79 Mixed for Trenton.....	5.56
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18 Express for Halifax, and St. John.....	7.40
21 Mixed for Pictou Landing.....	7.40
62 Mixed for Pictou.....	7.40
50 Mixed for Mulgrave.....	8.20
18 Express for Sydney.....	8.20
28 Mixed for Pictou.....	11.10
28 Mixed for Truro.....	11.10
189 Mixed for New Glasgow.....	12.15
30 Express for Halifax and Sydney.....	12.10
140 Mixed for Pictou Landing.....	12.15
401 Mixed for Pictou.....	12.20
25 Mixed for Hopewell.....	12.46
65 Mixed for New Glasgow.....	13.10
17 Express for New Glasgow.....	19.50
66 Express for Pictou.....	21.55

-TRAINS ARRIVE AT STELLARTON

79 Mixed from Hopewell.....	6.30
78 Mixed from Trenton.....	6.30
41 Express from Pictou.....	7.00
18 Express from New Glasgow.....	7.30
21 Mixed from Hopewell.....	7.35
50 Mixed from Truro.....	7.35
28 Mixed from Pictou.....	8.00
27 Mixed from Mulgrave.....	10.55
66 Mixed from Pictou.....	10.56
19 Express from Halifax and St. John.....	12.35
139 Mixed from Pictou.....	11.00
20 Express from Sydney.....	12.20
22 Mixed from Pictou Landing.....	12.40
77 Mixed from Hopewell.....	12.46
65 Mixed from Pictou.....	12.46
66 Express from New Glasgow.....	12.55
17 Express from St. John and Halifax.....	21.45

All trains are run by Atlantic Standard time Twenty-four hour notation. Twenty-four O'clock is midnight. Moncton, N. S., Dec. 21st, 1900.

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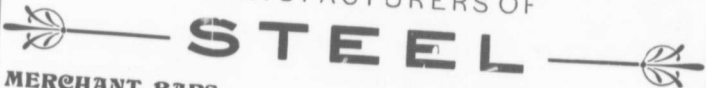
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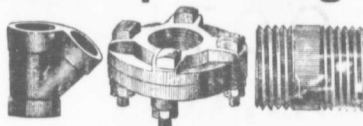
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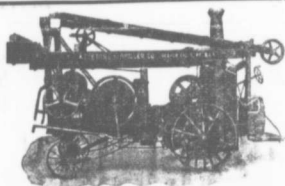
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The KEYSTONE
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It can be used in connection with any good "churn" drill, but operates best on the long stroke KEYSTONE, thus making the cheapest and quickest method of boring to be found.

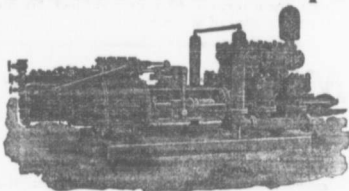
In operation a hole is sunk to the coal with the ordinary Rock Bit. The Bit and Stem are then removed and the Coring Attachment put on in their place. It takes a 4 ft. core out of the Softest as well as the Hardest part of the vein. Avoids all delay and expense of "rods" water wash, diamonds, shot, and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

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Licenses are issued for prospecting for Gold and Silver for a term of twelve months. They Comprise areas 150 by 250 feet, and any number can be obtained, at a cost of 50 cents per area. Leases of any number of areas can be obtained, at a cost of \$2.00 per area, for a term of 40 years; subject to an annual rental of 50 cents per area.

Licenses are issued to quartz mills, which make returns and pay royalty on the gold at the rate of two per cent, on milled Gold valued at \$19.00 per oz.

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Gold and Silver.

—LICENSES TO SEARCH—

over five square miles for eighteen months, cost \$30.00; leases for four renewable terms of twenty years each can be selected from them at a cost of \$50.00, and are subject to an annual rental of \$30.00

All titles, transfers, etc., are recorded free of charge by the Department. The royalty on coal is 10 cents per long ton, and on other minerals in proportion.

The Gold District covers over three thousand square miles, and the deposits of coal iron ore, etc., are practically unlimited.

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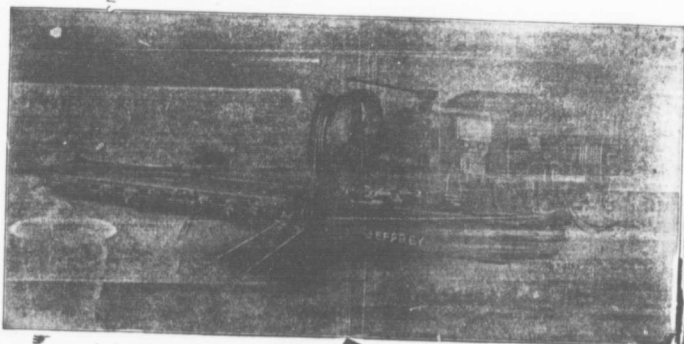
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For room and pillar work on the Longwall plan.

It cuts faster.

Consumes less power per cubic inch of coal cut.

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Is more easily controlled, operated, and handled; Is simpler and has greater strength, motor-power, and endurance than any other make of *Side Cutting Machine*. This machine is loaded, unloaded, moved to and from the coal face and in fact handled throughout by its own power. Fully described in Bulletin No 1B 14

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To do....

MARITIME MINING RECORD

Vol. 11, No. 17. Stellarton, N. S., March 10th. 1908. New Series

SELECTED QUESTIONS AND ANSWERS.

(Science and Art of Mining.)

MINE FIRES.

Q.—What causes have been assigned for the spontaneous ignition of coal in mines, and how should such fires be dealt with?

A.—The question of spontaneous ignition of coal in mines has in recent years been the cause of much discussion amongst mining engineers, many of them being at variance as to the chief cause of such ignition.

Formerly it was supposed that pyrites, present in many seams, was the cause of all spontaneous ignitions of coal. This theory is still held by many, but the majority of authorities on the subject place it in a secondary position to the theory that most fires are caused by the oxidation of the coal itself, this being based upon the fact that many seams are subject to spontaneous combustion when pyrites are entirely absent. No doubt when pyrites are present they greatly assist in the formation of the fires.

Such fires usually occur in soft seams that are easily broken up, these presenting a large surface to the action of the air, owing to the crushed nature of the coal. As the chemical action goes on between the carbon of the coal and the oxygen of the air, heat is generated, gases given off, and the generation of heat continues until it is so intense as to ignite the gases, which in turn ignite the coal.

The pressure of the superincumbent strata upon the coal also plays an important part in the formation of fires, especially when small ribs or pillars have been left in the goaf. The pressure itself causes a certain amount of heat to be generated, and it also causes friction between the pieces of coal; it also generates heat.

Sometimes spontaneous ignition does not actually take place in the seam itself, but in the shales which are often found above the coal.

When working a seam of coal which is liable to spontaneous ignition some special method should be used to extract the coal; the districts should not be made too large and should be separated one from another by barriers of coal. These barriers should be of sufficient thickness to withstand the roof pressures, and prevent air being drawn through the coal in the event of one district having to be sealed off.

When the above method is adopted it is an easy matter to seal one district up without affecting the other, this sealing up being done so that the gases produced by combustion may collect and

put out the fire, and to keep the air from getting to the fire and feeding it.

Sometimes when the coal lies to the dip of the shafts the long wall retreating method is adopted, and the goaf allowed to fill with water.

When fires are occurring in long wall workings they are very difficult to deal with. Wax walling has been used, but it is not much of a success owing to the cracking of the clay due to the heat.

Probably the best method in such instances is to cut around the seat of the fire, and dig it out, filling in the space with sand or fine dust.

When building dams to wall back the fire they should be made of sufficient strength to withstand the force of an explosion. The brick work should be let into the roof, sides and floor, and then backed up with sand for about 8 or 10 yards, where another brick wall may be built.

Filling the mine with carbon dioxide gas has been tried with varying success, the CO₂ being taken into the mine compressed in boxes or through pipes from the surface.

When all other means fail flooding has to be resorted to, but this is an expensive and difficult method, and should only be used in extreme cases.

In working mines liable to spontaneous ignition the pillars should be left large enough to withstand the crush, and all crushed coal should be removed as soon as possible. No ribs of coal should be left in the goaf, and a good ventilation should be maintained to keep the surface of the coal cool.

ELECTRICITY.

Q.—To what uses is electricity applied in coal mines? What are its dangers?

A.—No person has yet clearly defined what electricity is. It is only known by the effect it produces, and as a condition known to exist in different substances or bodies.

Electricity is used as a transmitter of power from one place to another in a mine for the purpose of winding, haulage, pumping, coal cutting, drilling, ventilation, lighting, signalling, shot-firing and relighting of safety lamps.

The peculiar conditions under which winding has to be done counteract against the use of electricity, because it cannot as yet be adapted to its work with the same ease and safety as steam. Starting from rest with a full load, increasing to full speed, then counteracting the resulting acceleration, and finally bringing the whole again to rest, all in a very short space of time, requires careful consideration and delicate handling, to which electricity up to the present time has hardly been brought.

Electrical haulage does not perhaps present as many difficulties and therefore does not require as careful handling as the above. This power is easily applied to both endless rope and main and tail rope haulage, and is becoming more popular.

Electrical pumping is rapidly increasing in favour. It is, indeed, highly probable that electricity has been more extensively applied to pumping in mines than to any other purpose. Electricity is specially suitable to the high speed pumps such as the Centrifugal and Kiedler.

Coal cutting by electricity in some districts is not as popular as with compressed air, but will without doubt become more extensively applied as the dangers due to its use are overcome.

Drilling by electricity has not up to the present competed successfully with compressed air owing to the difficulty of adapting it to drilling machines of the percussive class. With the rotary drill much may be said for it, and no doubt in the near future we may see it to the front with the rotary drill type of drilling machine.

The heavy, slow running, cumbersome fans are rapidly becoming displaced by the modern small running fans. Owing to the absence of gearing electricity is especially suitable to run the quick running fans of the Sirocco and Rateau type. Some excellent results have been obtained applying electricity to the above type of fans.

Electric lighting is extensively used in mines at the bottom of the downcast winding shaft, where there is hardly any danger from coal dust. This is meant for arc lamps, but where General Rule 8 of the C. M. R. A. applies, all electric lamps must be of the vacuum or enclosed type, and protected by gas tight fittings of strong glass, having no flexible cord connections. The only disadvantage of electric lighting is where a failure of the electric lighting is likely to cause danger; in order to comply with the Special Rules as to the use of electricity, safety lamps or other suitable means should be kept ready for use in case of such an event.

Signalling in winding shafts and on long lengths of haulage roads is much used, as is also the case in sinking shafts, but it is specially suitable on haulage roads with sharp turns or a number of bends.

Shot firing by electricity has many advantages, and is becoming more universal, especially in mines liable to give off fire damp. Its advantages are too well known to discuss here.

Safety lamps may be relighted underground by electricity, any length away from a lamp station, provided the battery is not in the return airway, and where there is not likely to be any accumulation of inflammable gas. This saves a great deal of time and inconvenience, and does away with the use of a naked light to relight safety lamps. Electric safety lamps have not as yet been commonly adopted, they having proved a failure, chiefly owing to the fact that gas cannot be detected when using these lamps.

After trials with five different types of re-cue apparatus for miners, British and foreign, at the Howe Bridge Rescue Station, near Atherton, the Lancashire and Cheshire Coal Owners' Association have adopted the improved Fleuss-Siebe Gorman apparatus.

THE B. GREENING WIRE CO., Limited.

"During a recent visit to this establishment, we were so much impressed with the extent of the additions made to the buildings and plant in the last eighteen months, that we are giving illustrations of them.

The new Weaving Mill, which is probably one of the best structures of its kind in Canada, is 200 ft. long x 130 ft. wide. We noticed at the end, in answer to our inquiry, it was explained that this will be removed, and further extensions made as soon as trade warrants it. The building is devoted entirely to wire weaving machinery, and it was interesting to see the ponderous looms, some of them over 15 tons in weight, making, with apt parent ease, extremely heavy smoke stack netting and the fast running smaller looms engaged in making meshes as fine as No. 70 of brass wire for sleeping car ventilators.

The other buildings shown are the Wire Mill Cleaning House which has a capacity of 50 tons per day; and the Carpenter Shop which is isolated from the other buildings, the increased yard room being used for the different kinds of lumber.

We can only make casual mention of the many other interesting features of this important industry such as Wire Rope Spinning; Wire Drawing and Galvanizing; Poultry Netting, Twisting Machines, Presses for perforating all kinds of metals for all purposes; Automatic Wire Chain Machines for making the celebrated Greening's chains, etc. These processes are carried on in the older buildings.

The first needle manufactory in France was started by an Englishman, named Christopher Greening, at Saint Omer, and the town is this year celebrating the four hundredth anniversary of the establishment of the industry.

About 1600 A. D., it is recorded that at Tintern Abbey on the Wye, pins and needles were manufactured by a Mr. Greening.

In the year 1630, a proclamation was issued by Charles I. to the effect that the home industry had made such advancement that further imports of wire were prohibited.

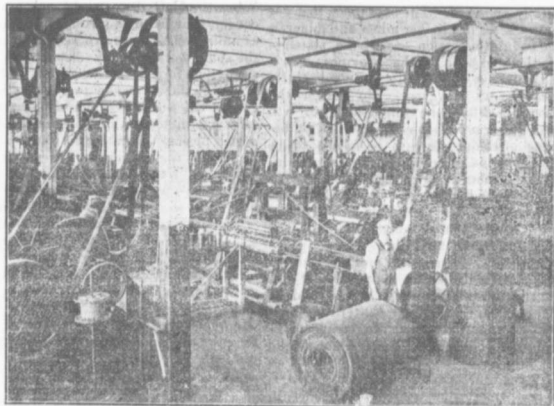
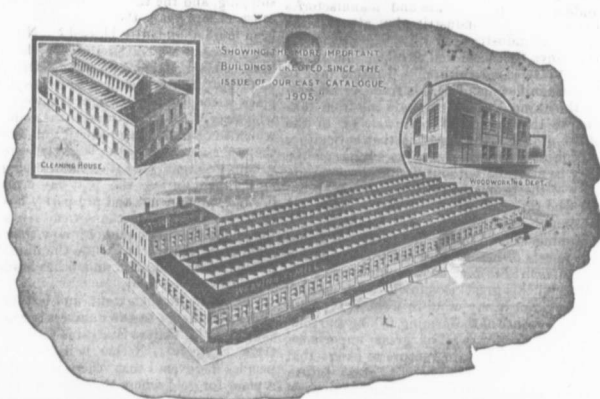
About the year 1799, Nathanael Greening, who came from Tintern Abbey, commenced the manufacture of wire at Warrington. A few years later the firm of Greening & Rylands was established, and carried on business until the year 1840, when the partnership was dissolved. Mr. Greening taking his sons into business, and establishing the firm of N. Greening & Sons; Mr. Rylands' sons continuing under the firm name of Rylands Bros.

It was the firm of Greening & Rylands that the late Benjamin Greening, second son of N. Greening of the firm in question, served a seven years apprenticeship as a wire drawer; then, commencing business for himself, continued until 1858, when he removed to Canada, and became one of the pioneers of the wire industry here.

Under the firm name of B. Greening & Co. he commenced the drawing of wire, wire weaving and rope making, and for many years carried on a successful and steadily increasing business until his death, in 1877, when he was succeeded by his son, S. O. Greening, who built new works and

added many new lines to their already extensive business. Owen Greening as president, since which time important additions have been made to their buildings and machinery.

In 1889, The B. Greening Wire Co. was incorporated as a joint stock company, with Samuel



FIGHTING FIRES WITH SAND.

Sand has been successfully used to fight culm bank fires. Sand obtained as a waste product is loaded on tipping trucks, and hauled to the top of the heap by an endless rope. The distributing plant, which can be removed from place to place, as required, consists of a metal scaffolding, provided with an electrically operated bucket elevator, which carries the sand up to a height of about 20 feet. At this elevation it is discharged into a hopper and mixed with a strong flushing current of water; the mixture is then carried

down a delivery pipe about 100 yards in length, to that part of the heap which is to be covered with sand. The space in question should have been previously surrounded by a low bank of earth to compel the water to run down into the heap and leave the sand on the surface. This method has given remarkable results. At one colliery a culm pile 12 acres in extent has been covered and now gives off only slight traces of smoke. The cost of the plant was £350, and during 18 months, the 12 acres were covered at an expense of £200 per acre for labour and water, the sand having been obtained for nothing.

THE MINE AND THE FARM.

Said the head of the Agricultural College, a few weeks ago, "We may talk of mines and manufactories and fisheries as important industries, but, after all, the solid foundation of industries, on which the permanent prosperity of Nova Scotia, as well as other countries of the world must rest, is agriculture." I rather take to the man who magnifies his office, his trade, or his profession, but the liking does not preclude one from taking exception to the method of bestowal, or to the measure of the praise. The assertion that agriculture is the base of prosperity, and is the backbone of the province may be accepted without hesitation, perhaps, by a majority of the people as correct, and yet I am one of those who think that it is neither, wholly. I am, notwithstanding all the praise that has been bestowed on farming, still of the opinion that not to her farms, or her forests or her fisheries must Nova Scotia turn if ever she aspires to this great and prosperous province of this great Dominion. In making this assertion it is not in my mind to weaken the faith of any in the importance of the farming, fishing and lumbering industries. These are all of great importance, yet, while admitting it, I again venture to assert that if Nova Scotia is to have a grand and a great future,—as yet incalculable—mineral wealth with which she has been so bountifully endowed. The statement that our province's greatest asset lies in her mines and minerals is met with the counter assertion—as I have stated—that farming is the backbone of the province. In a sense, of course, it is true, but it is not the whole truth, in the sense meant to be conveyed. No matter the consistency of ones backbone, he cannot hope to win out, if he be short of arm or feeble of limb. If by being the 'backbone' of the province it is meant to be conveyed that farming is and must remain its mainstay, I am inclined to demur. I venture the prediction that the time is coming quickly, when if, in Nova Scotia, farming can claim its thousands, mining and manufactures will claim their tens of thousands. The stars of farming, and forestry and fishing may not wane, most assuredly shall wax the star of mining; and if we are patriotic, if we really desire the welfare of our province, we cannot wish it otherwise. We speak of the civilized Western, and benighted Eastern nations. When did the Western nations leave the darkness behind and emerge into the light? When they awoke to the fact that there were more far reaching purposes in the life than peaceful pastoral pursuits. Why is it that Europe and America are greatly in advance, in civilization, of Asia and Africa? Is it not because the two last named continents rest almost wholly on an agricultural basis? Of the nations of Europe how is it that Spain and Portugal, Denmark and Holland and even Italy play so unimportant a part in international politics? For a similar reason. Why is it that, in spite of emigration, Britain has, in a comparatively short period of time, added twenty millions to her population? Solely on account of industrial activity following on mineral development.

Why has Germany, in recent years, forged so rapidly to the front? Why is it that her emigration has decreased from 200,000 to about 30,000 persons a year? Why is it that in Germany wages have increased, in a short time, 25 per cent, while in some other Europ-

ean countries they are stationary, almost? Why has Germany become the second most important country as regards textile manufactures; the second as regards shipping, and the third in ship-building? Is it because, of late years, the labors of her husbandmen have been more abundantly blessed? No, but because, in the matter of mineral production she is no longer a back bencher; because in the matter of mineral, or to be precise, iron production, she has leaped to second place among the nations of the world. Will those, who assert that agriculture is the solid foundation on which the permanent prosperity of Nova Scotia and of the other countries of the world must rest, explain how it happens that notwithstanding the great decline in agriculture during the past half century Germany's prestige, prominence and prosperity has vastly increased? Fifty years ago the agriculturists comprised half the population of Germany; now they number about a fourth of the whole, while the numbers engaged in mining, manufactures and other industries comprise two-fifths of the total.

Is it due to the extent and fertility of her wheat and cotton fields, to the numbers engaged in tilling the soil, that the United States is to-day so great a country? Scarcely. Rather is it due to the fact that her peoples discovered that "there is a mine for silver and a place for gold where they find it; that iron is taken out of the rock and copper is molten out of stone". When the U. S. discovered, and profited by the discovery, that nature's gifts, hidden in the ground, were as unlimited as those exposed on the surface, then did she shake herself, as a strong man awakening from sleep, then forged she to the front with amazing bounds.

When Japan awoke to a realization of the significance of the words 'Western civilization' her people became dominated with big desires and ardent longings, which pushed the nation forward, in one generation, beyond all the advances made in thousands of years. Not until Japan had familiarized herself with the white man's ways, and mastered the white man's methods did she really discover that mining and manufactures played the leading part in transforming a semi-barbaric horde into an energetic and civilized community.

In answer to the question "What is Nova Scotia's greatest need"? there have been given as answers 'More confidence in her resources'; 'More capital'; 'More intensive farming' and 'More population'. At the present time I will refer to the last answer—"population".

A writer in a Halifax paper, declared lately: "Population is the keynote of the situation What Nova Scotia needs most of all is population, and indirectly that will benefit other unsatisfactory conditions. If there were 750,000 to 1,000,000 people in Nova Scotia, there would be better roads, more traffic for the railways, more trade for the business men. . . . Contractors, builders, farmers and machinists of all kinds require more population." The statement, I think, is essentially correct, though in some minor aspects, it may be open to discussion. While some of the older countries could at times, especially in such times as the present, dispense, with profit, perhaps, with numbers of their population, there is no gaining, saying the statement that it is essential to the prosperity of a young country to have an ever increasing population. That being conceded the question to be answered.

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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.

MAR. 10

It seems that J. D. McLennan and Peter Patterson of the U. M. W. have applied to the Minister of Labor for a board of conciliation to adjust the grievances which have arisen between the Dominion Coal Co. and the workmen. In the petition the number affected is said to be 3,000. A declaration that a strike will be ordered, unless the grievances are removed accompanies the application. The foregoing is the Herald's version of the story, and as the Herald sympathises with every movement which is against constituted authority, what it says may be taken as correct. It is doubtful if the Minister of Labor can grant a board on the grounds presented. There is no difference between the Dominion Coal Co. and its employees as to rate of wages or hours of labor. There are no grievances. The only grievance is on the part of a committee of the U. M. W. who called upon Mr. Duggan and were not received. The calling had nothing to do with grievances. The committee simply wished to be recognized. The refusal of the manager to recognize a man or a body of men, when there is no business to be transacted between them does not come within the purview of the Lemieux Act. The threat accompanying the application that a strike will follow unless the grievances are removed may be cause why no board be granted. The Minister may say "These men are applying for a board to have certain grievances removed, they take it for granted that the board will order their removal for they say they will strike if not removed." That style of doing business may work all right in the U. S., but it is scarcely suited to Canadian soil.

The U. M. W's. have cut out the work for the conciliation board and have laid down the lines on which its findings are to run. The board is to say to the Dominion Coal Co. that it is not to interfere in "a fight between the rival organizations" but that the men should be left to settle the dispute "without sides being taken by the company". That certainly is cool. Why should not the Dom. Coal Co. have the right to prefer one labor organization to another and give expression to its preference. Why should the Dominion Coal Co. be denied the right of showing a preference for an organization with which it has a contract, and refusing to trade with another with which it has no contract.

"If the Dominion Coal Co. do not abide by the award of the board of conciliation we shall have only one recourse open to us" said a U. M. W. representative, "we shall spend a million dollars

if necessary to protect the rights of our men." Poof—a million dollars, is that all. Why, any one can pick up that sum at any odd corner. A million dollars, why not call it ten. The one sum is as likely to be spent as the other. Does any one take this talk as anything else but a poor attempt at bluster. If the U. M. W's. have a million dollars to bring in order to bring the Dominion Coal Co. to recognize the foreign order then it is safe to say it is not U. M. W. money. If the statement that a million dollars will be spent is a little more than an idle threat, then those who have asserted that the U. M. W's. in their attempts to capture the Nova Scotia miners are being backed by the United States coal operators will have their belief strengthened. A million dollars would have saved Alabama to the U. M. W., but as such sum was available. A million dollars would bring in a hundred thousand non unionists in the United States into union allowing the organizer the princely sum of ten dollars for every one initiated. What is it that makes the miners of Nova Scotia so precious to this foreign order that it is willing to spend a million dollars to have those of them who joined the U. M. W. locals 'recognized'. What is calling forth all this generosity on the part of the U. M. W. for the N. S. miners, causing the foreign society to remit the initiation fees, and to declare that the value it places on each and every one of the three thousand Nova Scotia miners it claims to have gathered in, is three hundred and thirty-three dollars, thirty-three and one-third cents? At the annual convention of the U. M. W. the funds on hand fell far short of a million dollars. Where is it to come from if the Dom. Coal Co. fail to toe the U. M. W. mark? Let the people answer.

Not by outsiders but by people within the U. S. borders it is claimed that the lessened death rate in all the European coal producing countries is due to the wider and better mining legislation looking to the safe-guarding and protection of the lives of the workmen. The inference to be drawn is that the United States lags behind in the matter of such legislation. The record of the United States for the past seventeen years is very bad in the matter of fatal accidents. In that time some 24,000 lives have been lost in the mines. And the pity of it is that the yearly toll seems to be steadily increasing. In European countries it is different; year by year the output goes on increasing, the number of deaths continue to decrease. For every thousand persons employed in the mines in France, the average of killed is .91; in Belgium it is 1.00; in Great Britain 1.28, while in the United States it is 3.39. Bad as these figures make the case for the United States, it is even worse when one considers the very favorable conditions for mining in that country. Had the miners of the United States been wisely led, had they through their labor organizations attended a little more to securing everlasting and safe conditions in the mine, instead of everlastingly seeking to obtain higher rates for cutting, it might have been better. Protection to life and limb should be the first consideration.

Prospects look good for steady work during the summer at Sydney Mines.

AROUND THE COLLIERIES.

The number of fatal accidents at the mines last year was above the average. This is due to the fatality at Port Hood which is responsible for over a fourth of the total of fatalities.

Mr. C. J. Coll, General Manager of the Acadia Coal Co., gave an intellectual talk on dam building underground in a restricted space, before the Nova Scotia Mining Society last week.

If the refinancing plan of the directors of the Nova Scotia Steel & Coal Co. is successful the Co. will obtain sufficient funds to carry out large extensions without any increase in fixed charges.

The trouble at the Strathcona mine has been settled. The government were thanked for the assistance rendered by getting men to keep the mine from flooding during the stoppage of coal production. The government was not informed of the terms of settlement of the dispute.

Rumors of a strike come from Cape Breton. Rumors only, as a conciliation board has been applied for. It is said the men idle at Dom. No. 6 C. B. men take all they can get out of the alien society for it is not likely they will get it long.

A lodge of the P. W. A., a hundred strong has been organized at the Allan Shafis. This is the place that the U. M. W. expected to make their headquarters in Pictou Co. If Cumberland is sold for the U. M. W. then Pictou is sold for the P. W. A., and by and bye Cape Breton will be sold too.

Borings at the back of Port Morien have proved that there are at least four excellent seams of coal on what are known as the Cowan's areas, viz. one of 8 feet, one of 3½ feet, one of 4 feet and one of five feet. Another seam of 5 feet is reported as having been struck at a distance of 650 feet or so from the surface.

Some of the Nova Scotia mines are assuming great depths, for instance the length of the deeps in Dom. No. 2 is over 7,250 feet; the total distance of the main deep in the French slope, Reserve, is 11,500 feet; the total distance of the main level in International colliery is 7,250 feet, and greatest of all, the pitch of the seam taken into consideration, the length of the hoisting slope in the Drummond colliery is close upon 8,000 feet.

It is stated that the Eastern Coal Co. operating at Maclean, which some time ago lost the coal time and money succeeded in recovering it. The Record hopes the report rests on a solid foundation. The company has expended a very large amount of money, and in the interests of Nova Scotia it would have been a tremendous pity had it turned out to have been wasted.

Sydney No. 1 uses about a ton of powder per month. Sydney No. 3 uses 1½ tons per month.

A man named McDougall working in No. 1 colliery, Sydney Mines, was killed by a heavy stone falling from the roof on March 1st.

It is reported that Dom. No. 2 and Dom. No. 9 worked from the one shaft are to be closed down for a couple of months for repairs and improvements.

During the month of February over one hundred young men joined Drummond Lodge, P. W. A. Sydney Mines. Drummond Lodge is stronger now than it has been for a long time.

All members of Roberts Lodge, P. W. A. were true to their obligation, not one of them having joined the U. M. W. The highest praise is due Robert's Lodge for standing by their colours.

Mr. Milner, sole proprietor of the Free Coal League, is out again in last Saturday's Herald, with a long effusion on coal. Mr. Milner is becoming more and more philosophical, therefore more obtrusive and less interesting.

Drummond Lodge, P. W. A. is holding very good meetings lately. The house is full every meeting night. A large number of P. W. A. men who joined the U. M. W. have come back to Drummond Lodge. About fifteen have been expelled from the P. W. A. and there are a few more to go on the black books later.

It is stated that 'Tommy' in his capacity as Irishman is 'head centre' for the U. M. W.'s at Victoria. The 'meeting place' of the malcontents is a little hucksters store. Tommy meets out Irish justice when the offender is supposed to be inoffensive. He has a black hawthorn stick; sometimes however, he miscalculates, all over the face. He tries many cases as he was foolishly made a J. P. The Murray government gets all the odium of his findings. Tommy's chief characteristic is still the knifeing of former friends.

One of the objectors to the P. W. A. on the ground that it was far too expensive a society, has been appointed Sec'y. Treas. of the U. M. W.'s in Nova Scotia at the princely salary of \$80.00 per month. It is not hinted that he protested in the name of economy. The president, D. McDougall gets a salary of \$50.00 per month. The salary of the organizer is not stated but it should be worth \$75.00 per month. We have then \$90.00 \$1080.00, and \$900.00 or a total of \$2,940 for three officers. If the per capita tax of the Grand Lodge be put at 6 cents per month the same as paid to Grand Council, the salaries of the three officers alone will run away with the tax of 4,023 members. Will the Sec'y-Treas. of the U. M. W.'s give an anxious public some reasons for his change of views. The rank and file will by and bye have to pay sweetly in order that the several officers of the 'District' local be enabled to maintain themselves in state. As one of their number put it 'No twenty five cents a months dues for the U. M. W.' No indeed.

d is:—"How can the country secure population?" History, the experiences of other countries, furnish a prompt and reliable answer. The most powerful magnet, in attracting population to a country, is Mining.

Let us step across the border line, and survey the U. S. What do we find? Just this, that the greatest and the wealthiest, and the most populous States of the Republic are not the purely agricultural ones, but those where mining and the industries, that crowd in its wake, are most actively carried on. The four greatest States, according to wealth and population, are New York, Pennsylvania, Illinois and Ohio. These four have within their borders, if I remember rightly, one fourth of the entire population of the greatest of republics. And, note well, these four greatest states owe their prominence not nearly so much to the farming as to the mining industry. Some members, of even a mining society, while knowing that Pennsylvania, Illinois, and Ohio, are great coal mining states may not have looked upon New York as, in any great degree, indebted to minerals for her prosperity. Will it surprise such when told that this state, unregarded as a mineral producer, takes no back place in mining, or if further told that the value of the minerals, metallic and non metallic, of the state of New York alone, equalled, a year ago, the total of the production of all the minerals in the Dominion? How many have associated the state of New Jersey with mining, and yet that little state produces twice and a half times as much wealth, by mining, as does Nova Scotia, a province deemed to be underlaid, from end to end, with minerals. And, again, note well, that success in mining was not attendant on progressive farming. It was almost all the other way. The United States practically owes the country west of the Mississippi to mining. It was the silver and gold of Colorado and California that led to the inception of a transcontinental railway, and carried it successfully through wilderness and desert, and through and up and over mountains. But for the incentive, supplied by the presence of minerals, it is doubtful if there would yet be a transcontinental line. Indeed, it may be asserted, without fear of successful contradiction, that no industry opens up, and develops, a country to the same extent, as mining. It, too, is a basal industry, and where there is mining there are dozens of dependant industries, and therefore it is that mining determines the chief centres of population. While the great Comstock lode was in operation, a modern city flourished in the centre of the Nevada desert; when mining stopped, there was again a desert; mining having again started, again is the desert being peopled.

It was the local market, and transportation facilities called forth by mining, that attracted agriculturists to Arizona and New Mexico and which has given them a living while they have been learning the science of dry farming, and turning waste places into fruitful farms. It was mining and the market it furnished, that prompted the idea of irrigating the dry belt of the west, and made possible the transforming of barren ground into productive gardens. Surely it was mining that opened up the mountain fastnesses of British Columbia, in whose valleys now are to be found a population, rapidly increasing, and industries rapidly expanding. Where, not so many years ago, were recognized nothing but rocks, are now to be seen some

of the finest orchards, probably, in the world, and a fruit industry springing up which gives promise of becoming a leading factor in the future of that province.

For years, for a decade at least, the Ontario government made heroic attempts to induce population to settle on the clay belt at the head of Lake Temiskaming, in Northern Ontario. These efforts—including the inducements of transportation facilities—were all but fruitless until a time came when silver was discovered in that region, and the discovery of that mineral did more for Northern Ontario in a year than had been accomplished in all the years preceding. Cobalt settled the clay belt. To illustrate further the important part that mineral exploitation plays, in attracting population, let me instance a few cases. New Jersey doubled in population between 1870 and 1900; Illinois nearly did so, Ohio increased from two and a half to four millions; Pa. from 3½ to 6 millions, and New York from 4 to 7 millions. Massachusetts, the most important of the non metallic states has \$907,000,000 worth of manufactures, against 1,871,906,000 for N. York, and 1,649,000,000 for Pa. From 1870 to 1900 were the years most prosperous in the life of the U. S. To what was the prosperity due? Primarily to the astonishing development of her mineral resources. While from 1870 to 1900 the corn crop increased from 1090 millions to 2900 million bushels, and wheat from 235 millions to 506 million bushels, increases, respectively of 100 and 125 per cent., the production of coal increased, during the same period, 800 per cent.; pig iron also increased 800 per cent., and mineral oil 1200 per cent. These figures prove that to attract population, and to promote material prosperity, nothing serves so well as the development of a country's minerals.

History bears me out in the assertion that without mineral production, industrial development is of slow growth, and without industrial development there is not, as a rule, any rapid growth of population. Without mineral production, industrial development, and a corresponding increase in population no nation can assume prominence or become a financial or a political power. The three greatest nations in the world are the three greatest coal producers, and the greatest iron manufacturers. These are Britain, the United States, and Germany. Without coal and iron these three nations would not enjoy the distinction of being the foremost on the earth. To coal is due their industrial development and their commercial supremacy, and with all due deference, to those who extol farming as the basis of Nova Scotia's future, I say, 'nay,' her future, if it is to be one worthy of her endowments, lies in the development of her minerals. In the future farming must occupy a secondary place; nature has decided that.

One who looks upon farming in Nova Scotia as the sine que non said:—"The people living in the agricultural countries have peace and contentment and happiness, but wherever these industrial concerns—coal mining and allied industries are—the contrary is the case. The people in these towns live in an atmosphere of uncertainty; the people in agricultural districts live happily." Live happily! Perhaps so, happiness being an elastic, or a relative term, yet, if one ventured the statement that there have been more heart burnings and heart breaks, more ill wishes and ill words, over line fence suits, involving a foot or two of ground,

than over the big Steel-Coal case, he might not be very far astray. If peace and contentment, if a primitive life, is the ideal one then certainly let all rush to the farm, and try to live without thought for the world beyond the fence. If peace and quiet are the true ideals, let us reinstate the spinning wheel, and rehabilitate the family boom; let us throw out electricity and gas, and go back to the candle dip or the cruce or the rush light, and discard the locomotive and the tram car, and return to the post chaise and the stage coach.

Quoting again, from my text "... the solid foundation on which the permanent prosperity of Nova Scotia depends is agriculture".

Andrew Carnegie has said that capital, labor and brains may be compared to a three legged stool; take away one leg and the stool tumbles. Were one inclined to be conciliatory, rather than correct, he might be willing to say of farming, mining and manufacturing, that they are the three legs of a stool, the one valueless for its purpose without the other. But I cannot truthfully say so, with Britain before me to confound the illustration. Britain is a great country but not a great agricultural country. Granted that the loss of the little agriculture she has might cripple her, it would not crush her. Britain imports, in one year, five times in value the amount of food stuffs that she raises. Can it, then, be said that agriculture is the basis of her prosperity? And so I believe it will be with Nova Scotia. Farming must play a part; mining and manufactures the leading parts. Even if forced to admit that farming is the basis, the question remains "and what of the base without the pillars that support the commercial edifice?" The base is essential; the pillars "And Samson said unto the lad that held him by the hand, Suffer me said that I may feel the pillars whereupon the house standeth, that I may lean upon them. . . . And Samson took hold of the two middle pillars on which the house stood AND ON WHICH IT WAS BORNE UP, of the one with his right hand, and of the other with his left. . . . And he bowed himself with all his might and the house fell upon the lords, and upon all the people". The depression of the lords meant disaster to the people; and I hold that any depression,—set back—to mining and manufactures, the pillars of our trade, irrespective of the fact that the base remains—will bring disaster to the commercial prospects of our province. For a century prior to 1895 we had the alleged, base of prosperity here with us in N. S., but the base of itself did not prevent our young men, and fair maidens, leaving the old home and heading to the new land. For the lack of population there was no home market, and for lack of a market the base became moss covered. We may talk of farming as the basis, and the back-bone, but without mining the base is of small value. In order to make good this point, viz., that mining and manufactures are the pillars of prosperity, let the appeal again be made to history, not that of other countries now, but of our own.

The local government, as you are aware, has inaugurated an immigration policy, which we probably all join in commending, while still we wonder, if the government fully realizes that the best and surest plan of retarding emigration, and, at the same time, stimulating immigration, of the kind most desirable,—people to settle on the land—is to promote and foster mineral production, and give all encouragement to the establishment of industries. We have been complaining of the

number of vacant farms, in nearly every county of the province. When, let us ask, did the depopulation of the farming districts show most activity, and what were the chief causes of the exodus? Emigration from the farms was most active from say 1860 to 1885, a period when mineral production was in high a stagnant condition in Nova Scotia, and was becoming very active in the U. S. The reasons for this emigration were that employment at the mines was precarious, and there was a lack of population and consequently little or no home market, at anything like remunerative prices. For these reasons thousands upon thousands of her brawniest sons left Nova Scotia for the States, where they could obtain steadier work and higher remuneration. And had there been no growth in mineral production since 1885 it is hard to estimate how many more vacant farms might have been added to the list in the counties East of Colchester. This emigration from the farms, to the States, was checked as soon as cast off its swaddling clothes. It should not be a matter for surprise that farms were deserted in the sixties, seventies and eighties. The husbandman got no adequate return for his long and grinding hours of labor. At home there was an insufficient market; while the market abroad was unprofitable. It is scarcely to be wondered at that men turned their backs on the farm, when eggs had to be exported to the States, netting eight cents a dozen, and when butter did well if it fetched 12 cents a pound. All farm stuffs sold at unprofitable prices. To an inadequate home market, bandy. With the rapid development in coal mining since 1890, a very different tale is to be told. The home market to-day cannot nearly be supplied from the home farms. Instead of sending the produce of the farms to Boston at unprofitable prices Nova Scotia is to-day, on a very considerable scale, an importer of farm products, at fancy prices. The change in conditions in the farming districts since 1890 has been simply wonderful, and farming now, if ever, in N. S. should pay. It may be asked: Has there been no vacating of farms since 1885 or 1890? Surely, to some extent, but the movement has been in a different direction. Previous to 1890 it was from the farms to the U. S.; since that year it has been, chiefly, from the farm to the mine, or to some industrial centre. The reason that there is still a movement is the fascination of seeing a goodly sum of money in hand, at regular recurring intervals. The activity in mining, of late years, has checked, not stopped, emigration from the province to the U. S. No policy of corporations, or of governments may be able to effect a complete stoppage for many a long day. There is an attraction nigh irresistible drawing our young men from the hum drum of the farm, to the din and bustle of the cities; from the peace and quiet of the country side to the activities of industrial centres; from the certainty of a modest competency on the farm, to the possibilities in a richer and of life full of life, will continue still to cast their spell over our young men and maidens. The flow has been, as stated, checked, and it will continue to diminish with increased mineral development.

So that the importance of the coal trade to the province may be readily grasped, I present a few figures which may serve that end. The table shows the amount paid out in wages, and for supplies in the four

coal mining counties, and the number of employees, etc.:

PICTOU CO.

NAME OF COMPANY	Amount paid in Wages.	Total Supplies.	Total wages and Supplies.	No. of Employe's	Number depend't on Employee's	Depend-ant on Coal Mining	Pop. of Towns	Popul. Appreci-ably Benefit'td
Acadia Coal Company..	\$ 702 000			1 445	6 000	7 000		
Intercolonial Coal Co.,	490 681			970	3 000	4 000		
Marsh Colliery	60 000			90	250	250		
Totals	1 252 816	319 466	1 571 282	2 505	9 250	11 250	14 000	20 000

CUMB. CO.

Cumb. Ry. & Coal Co.	\$84 000.			1 600	5 000	6 500	6 500	18 000
Mar. C. R. & P. Co.	166 000.			450	1 500	2 500	3 000	3 500
Minudia Company								
Strathcona and others								
Totals	1 050 000	167 000	1 217 000	2 050	6 500	9 000	9 500	21 500

C. B. COUNTY.

Dominion Coal Coy	\$ 750 000			8 300	21 000	25 000	40 000	40 000
Nova Scotia S & C Co.	1 050 000			2 300	11 000	15 000	20 000	20 000
Other Collieries	150 000			350	1 200	1 500	2 000	2 000
Totals	4 950 000	1 358 000	6 308 000	10 950	33 200	41 500	62 000	62 000

INVERNESS CO.

Inverness Coal Coy.	464 000			908	1500	3000	5 000	22 000
Other Collieries	150 000			350	900	1200		
Totals	614 000	194 500	808 000	1258	2400	4200		
New Collieries	24 000	75 000	99 000					

GRAND TOTAL.

Wages.....	\$ 7,800,000
Wages and Supplies.....	10,003,000
No. of Employees.....	16,750
Dependants on Employees.....	57,350
Dependant on Coal Mining.....	125,000
Population appreciably benefited.....	175,000

In Cumberland County the amount paid out in wages is equal to \$29.00 per head of the population as at last census, or taking wages and supplies \$34.00 per head.

Pictou County \$37.00 and \$45.00 respectively.

Cape Breton \$100.00 and \$128.00 respectively.

Inverness Co. \$25.00 and \$33.00 respectively.

Taking the population of the four mining counties at 143,000 and the wages paid at \$7,500,000 we have an amount, paid out in wages alone, equal to \$53.00 a head. Taking the population at 500,000 and the amount disbursed by the coal companies for wages and supplies at \$10,000,000 we have twenty dollars for every man woman and child in the province.

The subject permits of variety and extent of treatment.

There are many phases of it that I have skipped over lest I should weary you. I think however that I have said sufficient to convince our legislators that the best way to settle our vacant farms, induce population, and supply a profitable market is to forward in every possible legitimate way, the exploitation of the grand mineral resources of the province.

The Dom. Iron. & Steel Co. is sparing for time while the Dom. Coal Co. is eager for action.

President Coll impressed upon the members of the mining society the advisability of increasing the membership and extending the scope of the usefulness of the society. The suggestion led to an interesting discussion, the outcome of which may be the establishment of branch societies in the larger of the colliery or other mining districts. The fee chargeable to members of the branches will be less than that at present. It is suggested that the "allied industries" should have a larger representation in the society. A special session of the society will be held during the summer to discuss this matter.

A prominent Socialist seriously described the other evening at a public hall how the future Utopia intends to deal with the un-employable class. The "work shy" is to be placed in cell with a machine of some kind. By this it is hoped that his labor will be turned to some account—when he feels inclined to work. Facing him will be an appetising dinner and "the wherewithal to wash it down," all duty protected by an iron grille. A register will mark time on the volume of work done, and when the four hours' minimum is reached the grille opens automatically and, well, there you have it!

Hume Saw Mill
Fairfield, Me.



Amatite Roofing,

Why Use Paint to Protect Your Roof ?

Why not get a roofing in the beginning that will protect itself—that needs no painting ?

All smooth surfaced ready roofings require a coat of paint or or some other liquid every year or so. The roofing itself merely acts as a base for the paint. If you fail to put it on, your roof doesn't last very long.

Amatite Roofing requires no paint of any kind. It gives protection from the moment you lay it until it is worn out, without spending another cent for extras.

Its Real Mineral Surface makes this possible,

What you spend merely for paint and repairs on other roofs will in a few years pay entirely for an Amatite roof

For Farm Buildings it is especially satisfactory and economical

Anyone can lay Amatite. It requires no skilled labor. Nails and liquid cement for laps are furnished free with each roll.

Write for FREE SAMPLE and Booklet and investigate its merits for yourself.

PATTERSON MFG. CO., Limited,

Toronto, Montreal, Winnipeg, Vancouver, ST. JOHN, N. B., HALIFAX, N. S.

In his address to the Mining Society, President C. J. Coll touched on several points having practical significance. For instance he recommended that the government should be asked to make enquiry into the character of the explosives used in mines, and designate the kinds that might be used. This is following out the old country plan of "permitted explosives." A permitted explosive as we understand it can be used in any mine no matter what the character or the reputation of the mine may be. And herein lies a danger. We think we are safe in saying that as yet there has not been discovered an absolutely safe explosive, one that will not, no matter what the conditions in the mine may be, emit the spark which leads up to an explosion. If we are correct in this conclusion then it seems to us that it might be better to have permitted mines instead of permitted explosives. Let a record of every mine in the province be taken for a given time. If a mine is a free gas producer, or is very dusty then it should be put in the dangerous class; if it is neither extra gaseous nor dusty then it could be placed in the non dangerous list. In the former class of mines explosives should be absolutely prohibited, and in the latter permitted explosives only. Of course the surest and safest thing to do would be to abandon explosives altogether, but that is probably impracticable at the present time. We have heard it said that a powder may be quite safe to-day and dangerous to-morrow—the same brand of powder. It is asserted, owing to some cause or other that the same class or brand of powder does not always produce the same effect. If this is a fact then it would appear that before being used each new lot of powder should be analysed. The safety of those engaged in mining is a subject worthy of the best consideration of the provincial government as well as of coal mining men.

Large deposits of sheelite from which tungsten is obtained, have been discovered near Waverley, Halifax Co, and also in Hants Co. The opinion is expressed that there is a lot of this mineral in the province. Hitherto it has been passed over, unrecognized as of value. The property at Waverley is under option, and it is possible development work will soon follow.

Though the Drummond slope is down some 7,900 feet, and supposed by some to have reached a point beyond where the McCullochs Brook fault is marked on the map in use, there are others who say that Poole's map properly worked out shows that the fault lies beyond the point reached by the slope. Surely it is possible to indicate the exact spot at which the fault should be encountered. Again it is asserted that the fault may be dipping away from the face of the slope, and that though from the dip on the surface the fault should have been struck ere this, owing to this supposed dip it is further off than calculated upon, but is still there to be encountered. Those who cling to the fault theory ought certainly to end suspense by giving us definite measurements

The Nova Scotia Steel & Coal Co., Sydney Mines, have recently ordered from the Robb Engineering Co., of Amherst, N. S., a 54' Double Inlet Sirocco Mine Ventilating Fan, also a 125 horse power Robb-Armstrong Automatic Engine for driving the fan.

Priestleys
Mohairs
 — and —
Lustres
 Have Excellent
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 WILL NOT COOKE
 :: WITH RAIN ::
 Best for —
**SPRING AND SUMMER
 SHIRT WAIST SUITS.**

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 wear **Priestleys Dress Goods.**
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BULL DOG TOBACCO,

Because it is the only Tobacco
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TRY IT!

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—Montreal—

—W. B. Reynolds, Halifax Representative—

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The Westellar Terra Cotta Company

having taken over the business of the Stellartor
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 PLEASED TO HAVE ENQUIRIES AS TO
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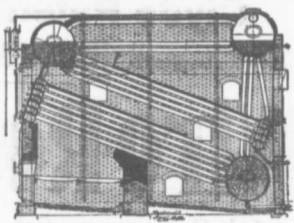
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Head office — STELLARTON,

GEO. E. MUNRO, Sec'y, WESTVILLE, N. S.

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PROMPT DELIVERIES.
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 HALF THE USUAL NUMBER OF HANDHOLES.

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 AMHERST, N. S.

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Wire Ropes for Winding & Haulage
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Aerial Ropeways, Suspension Bridges, etc. Specially
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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 1,700,000 tons in that time, and is still good for further considerable service.

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INVERNESS RAILWAY and COAL COY.
Inverness, Cape Breton.

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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. 26, Taking effect at 1 a. m. OCT 11TH., 1908.

EASTBOUND			STATIONS.	WESTBOUND		
Read Down				Read Up		
No. 52	No. 54			No. 51	No. 53	
a. m.	p. m.			p. m.	a. m.	
T 10 45	T 9 50		C. TUPPER JUNCTION	A 10 35A	A 3 30	
R 10 41	R 9 50		PORT HASTINGS	S 10 27B	S 3 27	
A 11 10	A 4 08		PORT HASTINGS	L 10 47	L 3 10	
	L 4 15			A 9 52		
	F 4 6		TROY	S 30		
	S 4 38		CREIGNISH	S 30		
	F 4 41		JUDIQUE	P 9 22		
	S 5 06		CHALKMORE	S 9		
	F 5		ATHERINES FOND	F 8 48		
	A 5 33			L 8 22		
	S 5 38		PORT HOOD	A 8 27		
	S 5 57			S 8 10		
	S 6 16		GLESCOE	S 7 47		
	S 6 35		MAROT	S 7 31		
	S 6 54		GLEN DYRE	S 7 15		
	S 7 13		BLACK RIVER	S 7 03		
	A 7 15		STRATHLORE	L 6 45		
	p. m.		INVERNESS	A 6 1		

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MABOU DIAMOND COAL.

Burns and Works like Bituminous;

Looks and Lasts Like Anthracite;

IT HAS NO EQUAL.

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Miners and Shippers of **Cow Bay Basin Coals.**

EXCELLENT FUEL FOR

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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."

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Over 7,000,000 H. P. in use, Fired with all kinds of Fuel

Steam Superheaters, Feed Water Heaters, Mechanical
Stokers, Coal Conveyors, Steel Chimneys, Water
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*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
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**Air Compressors, Rock Drills,
Imperial Pneumatic Tools,
Air Appliances, Coal Cutters,
"EVERYTHING IN AIR MACHINERY."**

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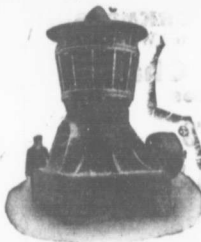
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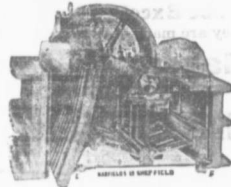
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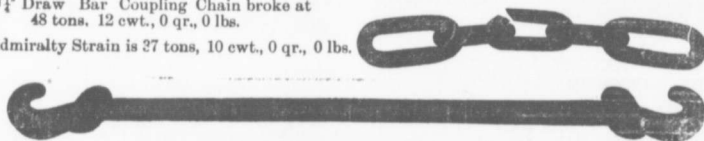
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Fixed Carbon.....	75.29 %	67.47 %	64.69 %
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	100.00	100.00	100.00
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