MARITIME

# MINING RECORD

AND

COAL AND METAL TRADE'S JOURNAL



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

New Series Vol. 10 No. 15 February 12th, 1908 STELLARTON, N. S

## INTERCOLONIAL RAILWAY

On and after SUNDAY, OCT. 13 1907 trains run daily, Sunday excepted,) as follows :—

—TRAINS LEAVE STELLARTON—

| | | |
|---|---|---|
| No 144 | Mixed for Hopewell | 5 55 |
| No 79 | Mixed for Trenton | 6.30 |
| | Mixed for Hopewell | 6.55 |
| 78 | Mixed for Halifax, and St. John | 7.40 |
| 18 | Express for Halifax and Montreal | 7.40 |
| 21 | Mixed for Pictou Landing | * 45 |
| 62 | Mixed for Pictou | 8.30 |
| 55 | Mixed for Mulgrave | 11.10 |
| 19 | Express for Sydn y | 11.15 |
| 28 | Mixed for Pictou | 13 55 |
| 56 | Mixed for Truro | 15.25 |
| 139 | Mixed for New Glasgow | 16.50 |
| 83 | Express for the sydneys | 15.30 |
| 20 | Express for Halifax and Montreal | 15.35 |
| 140 | Mixed for Pictou | 16.45 |
| 101 | Mixed for Pictou Landing | 18.10 |
| 22 | Mixed for Ho cwell | 19.50 |
| 65 | Mixed for New G asgow | 19.50 |
| 86 | Express for Halifax and St. John | 21.30 |
| 17 | Express for New Glasgow | 21.55 |
| 66 | Express for Pictou | |

—TRAINS ARRIVE AT STELLARTON

| | | |
|---|---|---|
| 79 | Mixed from Hopewell | 6.30 |
| 78 | Mixed from Trenton | 6.55 |
| 61 | Express from Pictou | 7.30 |
| 18 | Express from New Glasgow | 7.35 |
| 21 | Mixed from Hopewell | 8.00 |
| 55 | Mixed from Truro | 10.55 |
| 28 | Mixed from New Glasgow | 10 54 |
| 57 | Mixed from Pictou | 13.35 |
| 19 | Express from Halifax and St John | 15.40 |
| 139 | Mixed from Halifax and St. John | 15.20 |
| 85 | Express from Sydney | 18.10 |
| 20 | Express from Pictou Landing | 18.44 |
| 22 | Mixed from Pictou Landing | 19.35 |
| 77 | Mixed from Hopewell | 19.40 |
| 65 | Mixed from Pictou | 21.40 |
| 86 | Express from the Sydneys | 21.46 |
| 66 | Express from New Glasgow | |
| 17 | Express from St John and Halifax | |

All trains are run by Atlantic Standard time Twenty four O'clock is mid-night Moncton, N. B. OCT 13th. 1907

Buffet Sleeping cars on trains 85 and 86 between Halifax and Sydney. Dining cars between Halifax and Mulgrave, Buffet Parlor Car on Trains 19 and 20 between Halifax and Sydney. Dining cars between Mulgrave and South River

# NOVA SCOTIA.

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## Iron, Copper, Lead, Etc.

**Titles direct from the Crown**

**At Moderate Royalties.**

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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.

## Minerals other than 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

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

FOR INFORMATION APPLY TO—

**CHRISTOPHER CHISHOLM**

Commissioner of Public Works and Mines, HALIFAX, N S.

The....
# MARITIME MINING RECORD

Vol. 10, No. 15. Stellarton, N. S., Feb. 12th. 1908. New Series

## SELECTED QUESTIONS AND ANSWERS.

### Engineering.

Q.—Name some of the chief impurities in boiler feed water. What difficulties or dangers arise from using impure water, and what precautions would you adopt where you were compelled to use it?

A.—The following are the chief impurities in feed water for boilers, viz:

1.—Carbonate of Lime.
2.—Sulphate of Lime.
3.—Carbonate of Magnesia.
4.—Phosphate of Lime.
5.—Oxide of Iron.
6.—Silica.

The chief difficulty or danger arising from impure water entering the boiler is the formation of scale, which is very dangerous and which considerably lessens the efficiency of the boiler. The carbonates give us temporary hardness, and can be removed by boiling, which drives off the carbonic acid and causes the carbonate of lime or magnesia to be precipitated. Permanent hardness is due to the presence of sulphates. Ordinary boiling at atmospheric pressure does not precipitate these, but they are precipitated at a temperature of 300 degrees Fah. This is often exceeded in ordinary boilers, and then the sulphate are precipitated as well as the carbonates. Some well-known waters contain as much as 30 degrees of hardness, which means that about 1 1-4 cwt. of scale would be deposited per week, assuming the boiler consuming 25 tons of coal, and evaporating 8 lb. of water per lb. of coal.

As I have said, this scale forming is extremely dangerous, as overheating of the plates is liable to occur, which would eventually end in an explosion; also corrosion is liable to take place, in the form of putting and grooving of the boiler shell.

In accordance with the most up-to-date practice, water should be properly purified before being fed into the boiler, but if this cannot be done the formation of hard scale may be somewhat prevented by the use of a boiler composition. This has not, however, the effect of eliminating the incrustation forming salts, but merely changes their character, and prevents their deposition as a hard scale. To use a boiler composition safely without running any undue risks is to have it prepared by a competent chemist, after he has made a thorough analysis of the feed water, as there are many compositions on the market at the present time, which are absolutely injurious to the iron or steel which the boiler shell is made of.

Oak, hemlock, and other barks and woods are effective as a preventive of scale forming in waters containing carbonates of lime or magnesia. Milk of lime and metallic zinc have been used with success in waters charged with bicarbonate of lime, reducing the bicarbonate to the insoluble carbonate.

Soda ash is useful in waters containing sulphate of lime by converting it into a carbonate, and so forming a soft scale and easily removable.

Petroleum has also much been used. It acts best in waters containing sulphate of lime.

By far the most satisfactory method, however, is to take out the incrustation salts, and whilest by chemical treatment and subsequent filtration this can be successfully done on a large scale, probably on a small scale, or with single boilers the least troublesome, cheapest, and most effective method of preventing sulphate and carbonate of lime entering a boiler is by heating the water to the temperature of the steam. We all know that if water is heated up to upwards of 320 degrees Fah. the carbonate of lime and magnesia and the sulphate of lime become insoluble and are thus deposited, the carbonates almost instantaneously, and the sulphates more slowly.

There are two very good processes now being used, the 'Archbutt Deeley Process," and the "Desrumaux Process." In the Archbutt Deeley Process, the purification is effected in open tanks. Its principal feature is the ingenious way in which the impurities in the water are themselves during the operation made to act as a filtering medium, and rapidly acclerate the process of precipitation.

The Desrumaux Process is a continuous one, the precipitation being effected in a closed vessel, through which the water flows in a spiral channel of conical form, and from the surfaces in which any deposit cn be quickly and effectively removed.

### Geology.

Q.—What are the principal divisions in the Carboniferous system, and in which is coal found?

A.—The great rock system which is known to the geologist and student as the carboniferous formation lies seventh upward in the classified system, and derives its name from the fact that in this formation are about nine-tenths of the seams of that

great carbon product—coal. In general the system is divided into four rock groups, given by geologists in the following order:

1.—True or Great Coal Measures.
2.—Millstone Grit.
3.—Carboniferous Limestone (Mountain Limestone.)
4.—Lower Limestone Shales.

The above formations or divisions obtain in almost every part of the world where the carboniferous system is found, but in North Staffordshire and Derby the carboniferous system seems to be somewhat singular, since it may be sub-divided into five well-marked groups which lie in the following order:

1.—True Coal Measures.
2.—Millstone Grit.
3.—Pendleside Shales.
4.—Conboniferous Limestone.
5.—Lower Limestone Shales.

The intrusive Pendleside shales of the above formations are much like ordinary Coal Measure Shales, but may be distinguished therefrom by their fossiliferous contents, which are peculiar to their own rocks only, and can be found in no other system. The other sub-divisions are also marked by their own fossils, of which the Limestone is characterized by such fossils as Productus, the Spirifera and others; while the Coal Measures are characterized by many forms of fossil molusca, such as Adamsii, Phillipsii, Carbonicola Acute and Aquilina in the seams proper, and by many forms of plant life, such as Sigilaria, Stigmaria, Newropteris, Pecopteris, etc., in the adjoining rocks. Although, as I state, the Carboniferous system lies seventh upward, it may not always have its six companions below, nor does it always lie conformable upon its under neighbors, for as South Staffordshire shows us, it may lie unconformably upon the third or fourth group, for in the district mentioned the Carboniferous system lies unconformably upon the Silurian system, and in the district around Dudley they are working coal in one pit and Silurian (Wenlock) limestone in the next, and so on. As to which division of the Carboniferous formation carries the coal we only need look at the order given at the commencement of this answer, for there we see that the coal-bearing measures are situated right at the top of the system in question. In this group are contained coal seams whose total thickness is over 100 feet; hence, it is adequately named the True or Great Coal Measures. In North Staffordshire the coal seams vary in thickness from about 1 foot up to nearly 16 or 20 feet, and the best seams seem to lie the lowest, the quality of the coal seeming to deteriorate as the top of the productive measures is reached. The reason for calling this group the True Coal Measures is because a few inferior seams are found in other systems or formations; for instance, coal is worked in the Oolites and Oligocenes, but it is in the Coal Measures that the good and true coals are found. In this district the Coal Measures are again sub-divided as follows:

| | | |
|---|---|---|
| Coal Measures | Keele Series. | |
| | Newcastle Series. | Middle. |
| | Red Marls (Etruria). | Lower. |
| | Black Band (Ironstones.) | Upper. |
| | True Coal Measures. | |

From this table it will be seen that the Coal Measures are topped by Ironstones and Marls, and so the whole of the Coal Measure rocks may be turned into account in their own respective way.

## ANTHRACITE.

Mr. John Roberts, in his evidence before the Royal Commission on "Coal Supplies," said that in using the term Anthracite he referred to coals containing 88 per cent. and upwards of fixed carbon.

Although most text books mention how anthracite has been formed there seems to be too much similarity in the hypothesis given, and it is quite apparent that many of the assertions are only copies of antiquated hypothesis.

Some would have us believe that it is neither right nor wise to tamper with or question any theory, unless we can submit something better to take its place.

However, is it not safer not to have a house at all than to have one with its foundations laid in sand?

Had our scientific authors each given their own impressions on the formation of anthracite, instead of passing on obsolete theories, the result would have been more satisfactory.

With all our modern learning, we have to acknowledge that up to the present we have no satisfactory explanation as to how anthracite has been formed.

The writer had some correspondence lately with a well-known Professor in Chemistry, who is well versed and takes a deep interest in the chemistry of coal. The Professor, when referring to the subject of anthracite formation, said: "I cannot formulate any hypothesis to account for the production of anthracite to my own satisfaction."

It will be of special interest to students to have the various explanations given by various authorities:—

"Mines and Miners," translated and adapted to British mining, and edited by H. W. Bristow, F. R. S., mentions that "the oldest strata and the lowest which have undergone the greatest amount of pressure and heat, are those most productive of anthracite."

Hughes, in his excellant treatise on "Coal Mining," says:—"The formation of anthracite has probably been effected by the alteration of bituminous coals under heat and pressure."

In "Story of a Piece of Coal," by E. A. Martin, F. G. S., the author remarks: "It is a significant fact, and one which proves that the various kinds of coal which are formed are nothing but stages begotten by different degrees of disentanglement of the con-

tained gases, that where, as in some parts, a mass of basalt has come in contact with ordinary bituminous coal, the coal has assumed the character of anthracite."

Sir Archibald Geikie, in his "Text Book of Geology," referring to anthracite, mentions "that it is a coal form which the bituminous parts have been eliminated. It occurs in beds like ordinary coal, but in positions where probably it has been subjected to some change whereby its volatile constituents have been expelled. It is found largely in Scottish coal-fields, where the ordinary coal seams have been approached by intrusive masses of igenous rock.

In South Wales there is a bed of coal which produces bituminous coal in one district, and in another dsitrict the nature of the coal in the same bed has changed to anthracite. Another point of great import, and which so far has not received the attention it deserves, is that coals from the anthracite zones have generally a lower content of ash than the coal from the bituminous zone.

The same thing occurs in one of our Scotch coal-fields. From the same group of collieries anthracite and bitumisous coals are produced. The ash content of the bituminous coal is 3.67 per cent, whereas the ash percentage of the anthracite is only 1.77. These ash percentages are the opposite to what is required to support the theory which is put forward by so many scientists.

If anthracite is the result of bituminous coal losing its voliate matters by the action and effect of heat and pressure, then anthracite should, as a matter of course, contain the higher content of ash.

## BOILER FEED WATER.

Feed-water purification may or may not be essential, but feed-water heating is important. Many engineers have an erroneous opinion as to the detrimental effects of scale in boilers. While scale does not materially reduce the efficiency of a boiler, it may increase the wear and reduce its life. The steam-making power of a boiler-plate depends not on its conducting powers, but on its receiving and transmitting powers. An iron plate can conduct 12 times as much heat as it can absorb from the fire or give up to the water, and it is quite possible that a thin coat of scale on the metal in the water and a deposit of soot on the metal in the heated gases may be a benefit rather than a detriment. The nature of the scale, is, of course, important, and unless it is many times as bad a conductor as the iron, the same amount of heat will pass, so that the question resolves itself into its ability of handing over the heat received to the water. A thin scale is preferred by many experienced enginers, who hold that this scale not only stops corrosion and pitting, but makes the boiler steam better. If, however, much scale-forming material is present in the water, this should be removed before the water is fed to the boilers. In every case where water is treated, the treatment should be done external to the boiler, since it is the function of the boiler to raise steam and not to act as a purifier.

When the engineer has checked all the leakages in the brick-work, has affixed guages to the stack so as to record the amount of carbon dioxide present, and has done all that possibly can be foreseen to effect economy, the problem then must naturally rest with the fireman. The latter should be instructed in the proper method of firing the particular fuel used, and so much has been written on this subject that it would appear that advantage could be taken of the abundant material available.

By means of superheated steam, a saving of from 10 per cent. to 20 per cent. may be effected in the fuel expense, the greater saving being realized when the engines are working under uneconomical conditions, or where the steam pipe lines are very long. While a superheater may reduce the efficiency of a boiler somewhat, the saving in steam more than offsets this loss of efficiency; so that if superheated steam requires 10 per cent. additional heat and reduces the engine losses by 20 per cent, a material saving is affected.

The station with a large output and high-load factor naturally shows better economy as to fuel consumption. If the output of a station is below normal, the conditions are not conducive to economy. If the load factor is such as to require banked fires in the boiler room, an effort should be made to improve the load factor. The effect of a bad load factor is more pronounced in the boiler room than in the engine room, since a standing engine does not waste coal, but a banked fire does. The number of boilers under steam should, therefore, be kept down to a minimum and some method of increasing the draft installed to help out at peak loads.

Radiation from all sources should be reduced by covering all heat-radiating surfaces with nonconductors. Nearly all stations have their live steampipes enclosed in some steam pipe covering, but not all heat-radiating surfaces are covered, so that economy in this direction is only partinally obtained.—Electrical Age.

## THE U. S. LAGS BEHIND.

In spite of all the natural conditions tending to reduce the number of mine accidents in the U. S. to a low figure, the statistics for the last 15 years show directly contrary results. Coal mining is other countries has been made safer by the adoption and enforcement of stringent regulations for the mines, but in this country it has become increasingly dangerous each year. Considered in regard to the number of men employed in coal mines, the U. S. occupies a less favorable position than any other coal-producing country, more than three times as many men out of each 1,000 employed being killed as in some European countries that are less favored by natural conditions. In regard to deaths per 1,000,000 tons of coal mined, the U. S. not only

occupies a position worse than that of most European countries, but is also showing an increase in the rate, whereas every other country is showing a decrease. The increase both in the number and seriousness of mine explosions in the U. S. shown in the past may be expected to continue unless most energetic measures are taken to counteract the prevailing tendency. With the depletion of the thicker and more favorably situated seams of coal, thinner and less regular seams must be worked. This factor will undoubtedly be of the greatest importance within a comparatively few years and the natural result will be to increase greatly the death rate. The rising price of timber will have the effect of decreasing the number of props used and thus increasing the chances of accidents from falls of roof and coal, which were the direct cause of 50 per cent. of the deaths in mines in 1906. The varied nationality of the miners is also a factor to be reckoned with. The reckless disregard shown by some of the inexperienced men for their own safety and that of others can be restrained only by rigidly enforced laws.

The successful results which have attended efforts made in European countries to reduce the dangers of coal mining and the means by which these results have been achieved are described by the authors in some detail. By the compulsory use of tested safety lamps, by regulations for the use of explosives, and by various admirable precautions for combating unfavorable conditions, the chief coal-producing countries of the old world have greatly reduced the dangers and risks attending mining, and it is evident that similar measures should be adopted in the U. S.—Mining Science.

## THE PLEASANT ROMANCE OF POCAHONTAS.

The name Pocahontas is widely known in the trade. The coal field bearing that designation, situated in Virginia and West Virginia., is one of the greatest coal-producing sections of the country and the fuel mined there is second to no Bituminous coal as regards quality. For this reason a sketch of the personality and achievements of the Indian Princess who originally possessed the name may be of interest. The subject is particularly timely at present because the site of the Jamestown Exposition is near the spot where many of the events transpired in which Pocahontas figured. In fact, as is, of course, generally known, the exposition was planned to commemorate the three-hundredth anniversary of the founding of Jamestown by Captain John Smith, whose memory is so closely associated with that of Pocahontas. The story of these two historical characters was recently told by a writer in the New York Herald, who says that, although Captain Smith's veracity has been questioned of late years since the unearthing of the manuscripts of his various contemporaries, probably jealous of his daring prowess, his compelling qualities and incredible success in forcing food and concessions from hostile tribes, the story of his salvation by the fearless child of 12 is too momentous and thrilling to erase from the annals of our countrys history. Besides, we have the authority of no less a historian than John Fiske for accepting the story as substantially true.

As Smith paints the picture for us in his "Generale Historie of Virginia" (1624), we can see in our mind's eye the pomp and state with which Powhatan, father of Pocahontas, sought to impress the hated whites, already encroaching upon his hereditary territory at Werowocomoco. There the luckless prisoner Smith beheld the chief in a magnificent robe of raccoon skins, hung with strings of pearls, and seated upon a large divan of mats covered with leather pillows embroidered with beads of many colors.

Powhatan's presence, loomed majestic before the adventurer. It was commanding, disdainful and pregnant with the subtle menace that the power of life and death gives to a man. On either side of him sat his two latest favorites, pearl pendant streaming from ears to waist, while his 20 wives disposed themselves about the council chamber behind a double row of silent, mighty warriors, bedizened with scarlet paint and savage ornaments. The prisoner was treated with the greatest formality and show of consideration; He was feasted and attended by beautiful women while the council was being held to decide his fate. Suddenly, in the midst of this display of amity, he was seized upon and dragged to the feet of Powhatan, his head forced upon two flat stones, and a pair of fierce men, with clubs awaited the signal to beat out his brains. Into this wild, pitiless scene rushed the darling of the camp, "the king's dearest daughter," a lithe, alert being, who "not only for feature, countenance and proportion much exceeded any of Powhatan's people, but for wit and spirit the only nonpareil of his country." Her vivid imagination was undoubtedly made captive by this adventurous spirit, this hero of a hundred romances.—Coast Trade Journel.

## ANCIENT GOLD MINING.

A mining centre of the ancient world—probably worked as early as 2,500 B. C.—was between the Red Sea and the Nile in the Eastern Desert of Egypt. In an account of the recent successful search for the long-lost mines, Mr. C. J. Alford, states that the remains consist of irregular stone huts, usually containing about 50 to 100 square feet, and these are grouped in some places in twos and threes, and in others in towns large enough for 1,000 men and having outside walls. The ancient workings are buried in sand. The only vestiges of the mining appliances are numerous circular quartz mills and elliptical rubbing stones, the latter having been evidently used with stone rolling pins for reducing the rock to coarse powder, while the circular mills—with an upper and a lower stone—finished the grinding to the necessary fineness. The gold was then washed out.

**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. FEB 12.

HAPPY NOVA SCOTIA.

The Bituminous coal trade in the United States is at present very slack. Many mines have shut down and few are running on full time. In Pa. a large number of men in connection with many trades are faring badly. Not only are the mines affected, but also the railways. Under date of Feb. 2nd. there is a letter on our desk which says: "The Railway shops are on four days a week; manufacturing plants are closing their doors everywhere and the outlook is very gloomy". This is a darker picture than given in the press. Perhaps it is too dark. while the press pictures are too bright. The Buffalo correspondent of the Coal Trade Journal says that so many miners are idle everywhere that it will be easy to suit the production to the demand. The operators in the U. S. speak of enforcing a reduction in mining rates, while the miners unions talk of asking an increase. It seems to be the general opinion that neither side will try to enforce its demands, as the trade will not permit this year of any experiments. It is held that a strike this year would be fruitless so far as the mine workers are concerned And if there is any desire in Nova Scotia among the miners to strike for higher wages they better suppress it. The trade will not stand an increase. It was thought a while ago that the operators might be in a position to demand higher rates from some of their big consumers. It is now thought that might be risky, as it might lose to them part of the St. Lawrence business, and they cannot afford that. Our miners, particularly those in C. B. may think that Nova Scotia has the St. Lawrence trade solid. It is only ours if we nurse it. Last year notwithstanding the fact that wages were high in Britain no less a quantity than 150,000 tons of British coal found its way to the St. Lawrence. That is ten per cent. at least of the total quantity necessary for that market; we can stand the loss of that without great harm, but if increased to 20 per cent. the matter might become serious. And then the Americans are building boats for the Lake—St. Lawrence trade. These may not hurt the run-o-mine trade directly, but cheap slack may lead to a disvse of run-o-mine. The miners in Nova Scotia—in both the Mainland and the Island—are doing better, making better time and drawing higher wages, at the present than are miners anywhere, and it is their plain duty to see that any action of theirs will not so disturb trade that a reduction will inevitably follow.

There is a table in the Coal Trade Journal of Feb'y. 5th. from which one gleans that British North America received from the U. S. in 1907, 2,-648,769 tons of anthracite and 7,194,546 tons, no less, of bituminous coals, making a total 9,840,000 odd tons, or double the production of Nova Scotia, And yet there are some who are not content that Nova Scotia, one of the provinces of the Dominion should find a market within her borders for 50% of the quantity imported from the U. S. If any industry has reason to shout 'Canada for he Canadians' it may be the coal industry.

Pittsburgh mine operators, says the Coal Trade Journal, representing an annual output of 30,000-000 tons have decided that coal miners must accept a reduction of ten cents a ton, or be locked out. It is understood that the operators of tht Pittsburg district are not willing even to accept a proposition that has been talked of in the West, that of signing a scale at the present rate providing the miners would sign for a term of years.' Here some operators are desirous that the miners should sign for three years, while the operatives are opposed to any scale.

The prospects for the Provincial Steel trade are brightening. The Nova Scotia Steel and Coal Co. have received sufficient orders to keep them going for some time, and as orders are beginning to drop in at recurring shorter intervals, the management have assumed the optimistic smile they wore twelve months ago. Though business was not over abundant in Nov. and Dec., the business done in 1907 so far as net proceeds go will compare favorably with those of the preceding year, with which there was much satisfaction. The 'common' shareholders will be gratified at the prospect of continuous dividends. Another most hopeful sign for the trade is the placing with the Dominion Iron & Steel Co., by the Dominion Wire Works of an order for the large quantity of 6000 tons of wire rods, the first order the big company has had for rods for four months. The Nova Scotia Steel and Coal Co'ys plants, both Steel and Coal are in splendid shape, and development work is going on quickly if quietly. The prospects at Wabana are brightening every day, if that be possible. Sinking to the submarine areas of the Nova Scotia Steel & Coal Co. is progressing most favorably. In a distance of 800 feet not a fault has been encountered. The ore bed continues of surprising thickness and the quality leaves nothing to be longed for.

The first month of the year has done well for the coal trade. The open weather has been favorable to shipments both by water and by rail. January shipments are the highest for any Jany. in the history of the trade. The Increase in shipments over Jan'y of last year is 70,000 tons from the six principal shippers.

## Rubs by Rambler.

From Annapolis to Victoria Counties the press of the Province keep dinning into our ears in never ending stentorian tones that they are heart and soul with the workingmen, The papers one and all declare that they are on the workingmen's side, and will never leave them nor be driven away from them. They say, and would like the workmen to believe it all: "Intreat us not to m following after thee; whither thou goest we go; where thou lodgest we will lodge; whatever you say we will echo; your demands will be our demands; your aspirations our aspirations; your ideals our ideals and your gods our gods." The workingmen and the rest of us hear all this; and if we are quick sighted we will see something—we will see those who have in such terms sworn fealty, turn their backs and mutter—until after the next election. To me it appears—to use the language not of the Presbyterian Witness—devilish strange that the same papers that express a friendliness, that cannot well be put in words, for the workingmen, or let me say the miners, lose no opportunity for giving the coal operators a back slap or a side wipe, forgetful that the hurt of the operators is the hurt of the men. Witness the size of the headlines announcing the withdrawal of coasting privileges from Norwegian vessels? The papers hailed it as a god send regardless of how it effected the coal trade. The cancelling of the privilege may through time prove an excellent thing for Canada. That wholly depends, however, on the way Canadians set to work to fill the gap which the order will make. It would have been wiser that the order should not take effect for two or three years, so as to give the coal operators time to carry out the contracts they had made with the Norwegian vessel owners—at least one company has contracted for three years, and to give Canadians an opportunity to build or buy vessels suitable for the trade. How did it come about that Norwegian vessels got into the coal and ore trade? For the simple reason that they built a class of vessels, with big hatches, specially designed for them. And further British vessels of the right size are difficult to procure. The colliers as a rule are too small carriers for our trade under present conditions.

The provincial papers are under the impression that to the clamor they helped to raise is due the issuing of the Order in Council. It may have helped just a little but the order was issued under pressure from Ontario. Norwegian vessels last year found their way into the lakes and that must be prevented. Why? Because there are three shipbuilding works on the lakes ready to supply any sort of vessel that may be be needed.

In Nova Scotia there are no steel ship building yards, and the demand for steamers cannot be supplied here. The Order may cause transfers to British registry, but just how that will help the coasters I cannot imagine. If Canadians wish to secure the ore and the coal carrying trade the sooner they start shipbuilding yards the better. It is said the next move of the coasting captains is to secure the passing of an order that all vessels be loaded in turn. Foster the other day told Fielding that going into supply was one thing and getting supply another and a different thing, so it may be that it will be found that the getting of an order passed is a different thing from getting it fulfilled. If a coal company says to a would be purchaser, captain of schooner or ship; "We have sold all our product up till the end of October" what could he do about it? If the Order helps the captains and does not hinder the coal companies all will be satisfied.

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The success of an industrial enterprise depends almost wholly on the management; the success and the good name of a labor union depends to a large degree on the leader. Above everything else a labor leader should have back bone so that he will not be afraid to make proper disposition of unthinking and turbulent spirits. President Roosevelt lately sent a Commission to Goldfield, Nevada, to investigate the necessity for the call for federal troops. The Commissioners do not spare the Mine Owners Association, and they have a word or two of advice for the Union leaders. The Commission expresses itself as satisfied that throughout the Miners Union there are not over a few hundred men of dangerous type, while the great majority—probably three-forths of the membership, were conceded to be men of law abiding tendencies. By permitting their organization to be managed and controlled by men of violent tendencies the Union as a body has thus laid itself open to the reproach of being a vicious organization. The Western Federation of Miners as a Union is a bad stick, no matter if a majority of its members are inclined to be law abiding. To have three hundred vicious men in twelve hundred is a very large proportion, and is a number quite sufficient to bring the whole fabric into disrepute more especially as in this instance the vicious tail rules and wags the staid dogs. The people of Nevada wanted back bone in not being able of themselves to subdue all attempts at lawlessness, and the leaders of the Union are equally lacking in stamina when they do not deny the privileges of their order to the law breakers. It is true in Nova Scotia as in Nevada that the unruly spirits largely control many of the Unions. The sober minded men take too little interest in the proceedings. These unruly spirits have a way of hinting to the better thinking men that if they do not fall into line they will be classed as cowards or manager's men, and strange to say at this hint the back bone of the better disposed men shrivels up. What cowards we be—all of us more or less, mostly more.

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Taken up with other matters I have been unable to make reference to several subjects provocative of comment. Some time ago I read in a local paper a sermon delivered in B. C., by a former Pictonian. The one remark in the sermon that fixed itself most firmly on my mind was the announcement by the reverend gentleman that he had lately become a convert to socialism. I thought that a peculiar statement, as I was under the impression that unconverted ministers did not generally make public confession, when a change came. It was a frank confession certainly, equivalent to saying he had not been, until lately, what he had professed to be, which is a very hard thing for an expounder of the truth. Every Christian

is or ought to be a true socialist. The preacher I refer to told us what socialism was not. He said is was not lawlessness nor robbery, nor any species of confiscation, it was not even a desire for a fair 'divvy'. He did'nt say it in so many words but he left the impression that the socialism to which he had become a convert was ' favors to none, justice to all'. Well thats about the size of the socialism to which I became a convert long ago, indeed into which I was born, and every Christian should be a socialist of that sort. But that is not socialism as its loudest advocates expound it. These shout at us the meaningless cry: 'Labor is entitled to all it produces' and 'Labor has created all capital', therefore labor is entitled to all wealth. But the weak point about the latter battle shout is that it is'nt true. Labor, mere manual, physical labor, did not create all capital. If we admit for the sake of argument that capital to-day is labor's master, there is something else that is master of both, that can command the commander, and that is skill, or, put in another form, brains. It is not capital, it is not labour, correctly speaking that is setting and keeping in motion all the big wheels, and gigantic forces that these days are doing marvellous things. It is not capital or labor that is giving us fruits unknown to our forefathers, and promises at an early day to convert the prickly cactus into a fodder far more profitable than hay, or oats or beans. It is skill; it is brains, that is doing all this. Brains to day are the master of, and can command both capital and labor. The socialists who propogate the dogma that unskilled labor is the source of wealth are doing injury and not good to the cause of labor. Instead of bawling the prefervid socialists should work with the Christian reformers, who are endeavoring to give every boy and girl, every man and woman a chance to acquire that skill which alone is the creator of capital. An Amherst writer in the Herald, earnest evidently on behalf of the workingmen, judges rightly when he says that the socialist propaganda is injurious to the realization of the hopes of honest, industrious, right thinking workingmen.

There should be sufficient reasons for the establishment of a modified form of old age pensions without the resort to arguments which apply very remotely if at all to the subject. As an argument in favor of old age pensions to workmen we hear it advanced:—"Pensions are given to soldiers and sailors, and why not to workmen who in many cases are exposed to as great if not greater risks." Well, there is scarcely a comparison between a workman as we know him to day, and a soldier, even though a man like Sir C. Furness makes one. He says 'soldiers, sailors etc.get pensions, why not workmen Certainly workmen could demand pensions equally with soldiers, if they were placed under the same restrictions, and their employment had similar limitations. The workman can put his thumb to his nose, or perform some other like athletic feet, in the presence of and to show his independence or contempt for the boss, and the latter is helpless. The soldier who would perform a like evolution in the face of his colonel would be put on a diet of bread and water for a given period, if a worse thing did not befall him. If a miner is asked to come from his place to another part of the mine a few yards distant, he goes or goes not as it comes up his back. The soldier is not asked but bidden to go from Britain to Cawnpore, Lahaor, thousands of miles distant, and whether he likes it or likes it not off he goes, and not for two dollars a day but for a fraction over a quarter of a dollar. Tommy Atkins has to come to work every day, holidays and holy-days, or else give reason why. The workman takes as many days off as it suits him, and thinks it nobodys business. Tommy touches his hat to the lieutenant; the workmen condescends at times to acknowledge the bow of the foreman. Tommy has to take a march of ten miles with his kit on his back, and his implements in his hands, while the miner gets his kit sent down in the box and gets a ride down the slope instead of walking. Tommy gets regulation fare, the workman gets what he likes best. Tommy has to be in barracks at bugle call, while the workman goes home at the call of fancy. Few socialists would care to go out to India, or to an unhealthy climate when bidden. They might have no objections if they could go like Keir Hardie in prince fashion. Tommy's is not after all a pension. What he gets after a term of service is the pay he ought to have got when he was hard at work. His is properly not a pension, but deferred pay.

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### COAL IN AN ACRE.

Just how much coal there is in an acre, the thickness of the seam being given, admits of various answers. The quantity in tons depends largely of course on the specific gravity of the coal. A rough way of calculating in Nova Scotia is to allow ten thousand tons per foot per acre. Some sellers however would like to put it much in excess of these figures. How far this calculation is out may be judged from the following. One of the New Zealand collieries, after thirty six years work has become exhausted. The property contained 450 acres and the coal varied in thickness from 7 to 11 feet. Let us strike an average of 9 feet. The quantity of coal produced from start to finish was 2,167,231 tons. This quantity divided by 450 gives 4810 tons per acre, roughly speaking. If this be divided by 9 we have about 550 tons. The angle of the seam was 14, and the specific gravity 1,311, therefor the total weight of the coal in the area ought to have been 6,640,000 tons. To get 2,167,000 tons from the area shows that about two thirds of the coal was lost in some way or other. Evidently there is a mighty difference between the quantity of coal in an acre and the quantity likely to be got from it. In the past it is possible that not more than fifty per cent. of coal in a given area has been extracted. The remainder has been lost. However, with improved systems of mining the future should be better in the way of getting out bigger percentages than the past.

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The wire rope, to which reference was made in our issue of 19th. Dec., as having broken the record at Dom. No 3 for longevity and number of tons carried, was procured, we are asked to say, from the well known and reliable firm of Latch & Batchelor, England, who are advertising patrons of the Record. The several firms who advertise wire ropes in our columns are all reliable, indeed were they not so they would not be found there. Each firm has a record for special work performed.

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Any one interested in Worthington multi-stage Turbine Mine Pumps should send to The John McDougall Caledonia Iron Works Company Montreal for their newly Illustrated Bulletin No. 102. It is worth having.

# AROUND THE COLLIERIES.

Springhill seems to be the fortunate hunting grounds for illiterate swelled heads who are ambitious to become, leaders in the social. labor, or religious life of the community.

Along the line of many of the U. S. railways great stacks of soft coal are on fire and at Erieau on Lake Erie, coal is being sold at a small figure, from the thousands of ton piles on fire. And mark you this is not cheap Nova Scotia coal but the genuine American article.

The Records information is that peace has not been declared at Springhill, only an armistice. There are interior rumblings. The Record earnestly enjoins caution. Another strike will certainly be the worst, and will assuredly be the last for many a day. One of the old P. W. A. passwords might be applicable to the present situation. 'Better bend than be broken."

Since the company of which Mr. P. McNaughton is manager took hold last Nov., considerable work has been done at the Jubilee mines, Cumb. Co. As the pit had been for a considerable time abandoned, it was naturally much out of repair. Both slopes have been pumped out, repaired and put in fair condition. On pumping out No. 1 pit it was found that the roof had fallen from ten to twenty feet a distance of 100 feet from the face of the level. To clear away and cut through the debris was no little job. Things are now something ship shape.

The Canadian Mining Institute may not do much to enlighten Canadians, it certainly does its full share in amusing such of them as dearly love a fight. The annual fight is now on, and this time among the victims a Lamb is being brought to the sacrifice. Those reading the story of the annual meeting of the snarling dogs of the Mining Institute, will imagine they are in the Springhill pepper box trying to work the Lemieux Labor Law. The Pres. and four ex-Presidents—including Chas. Fergie—stand up for the Lamb; the Can. Mining Journal and probably others, want him shorn.

The present standard weight of box coal in Springhill mine should be satisfastory to every man working in the employ, and in saying so, says a Springhill correspondent, I speak in the best interest of fairness, peace, and the prosperity of the Town. If the men are not satisfied, what do they want? In all seriousness what can they expect. Are the men thoughtless enough to believe that there is no limit to the give of past years. Will it never be given to workmen to know when they have reached the limit? Does anyone with ordinary common sense imagine it is not reached at the Springhill Collieries. The man who denies it is not only not a true friend of the workmen, but is unscrupulous.

Well, things are still presperous in Springhill in spite of the pessimism of some of the people and the efforts of those leaders, who last summer promised the subjugation of the Co., in a few days. These people still feel sore and are leaving no stone unturned to make trouble between the Coy. and their employees. This set is not made up wholly of employees of the Company, but is drawn from certain professions, some employed and some unemployed.

The 'standard' weight of box of coal in Springhill mines, as publicly made known, was arrived at by ten days run of mine from the several slopes being averaged. This gave the Company a correct idea of what they had been getting previous to the last strike, and what they should get to fill out the final settlement, viz : No advance. Hence any demand for a lower standard weight would simply mean an advance of price on the box which would be a direct violation of the terms of settlement. It is a pity the late (very late) Board of Concilliation could not have thought of that.

A very sad accident occurred in No. 3 mine of the C. R. & C. Co's Collieries, whereby a miner named Adam J Davidson lost his life. The deceased had been acting as battery tender for some months previous to the accident and was considered a very careful man. Exactly how the accident happened no one knows, as there was no one near at the moment, but it is supposed that level in attempting to cross the chute at counter he slipped or missed his grip of the hand rail and slid down the chute which from this point down to main level has a grade of 60 degs. with an intervening fault. He was quickly missed, soon after located and the body quickly recovered, and although every available effort was made to resuscitate him it was useless. He appeared to have died from suffication.

Pioneer Lodge intimated by letter to Mr. Cowans that the present docking system would stand cancelled from 1st. Feby. and asked that a conference be held to arrange a new system. Mr. Cowans refused to be a party to the conference, and sums up tersely as follows· "Your lodge might as well recognize now as later that existing conditions will not be changed by any means which you may employ." Under later date the following is the closing paragraph of a communication from the company in a local paper. "The company cannot afford to and will not increase wages in any way, is the final and unalterable determination of the President and Directors" Than these utterances nothing can be plainer. It seems to many that if the men wish to bring down the whole fabric, Springhill included, even if they perish in the ruins—the one sure way is open to them. Better pause than be precipitate.

## THE LEMIEUX ACT.

The crucial test of any statute comes with an attempt to enforce its penal clauses. If this fail with respect to all parties, then the statute itself becomes a dead letter; but if a penal clause is en forcible as to one party and not as to the other then the statute instantly menaces the first party at the hands of the second, and this is precisely what happens in the case of the Lemieux Act. It is operative as to responsible employers, but is practically inoperative as against irresponsible employees. President Eliot, himself, evidently saw this feature of the Act since, in his conclusions, he says that is an interesting question how the penal clauses of the Act are to be enforced, although it would appear from the remarks following that he had reference more to legal procedure than to punishment. The Lemieux Act is premature. Admirably conceived, formulated with cold impartiality, its influence over the industrial world will be inversely proportional to the degree of immunity from prosecution which, in practice, the irresponsible employee will be found to enjoy. Stated another way, there is nothing in this Act that makes it practically possible to penalize men that own nothing and that are constantly changing their residences. There is nothing in its mandatory strike-clauses to frighten the nomadic miner, for every mine-manager knows that when he wishes to quit work he simply quits and that is all there is to it. He has no need to 'strike' for he is full of plausible excuses, born of a cosmopolitan experience, and his 'inalienable rights' are strongly safeguarded

All this was clearly illustrated during the late unpleasantness at Crow's Nest Pass and, only a few days ago, in the Boundary county of British Columbia. In the latter district, the practical effect of the Lemieux Act was to prevent all reference to wages by the managers, before shutting down the numerous copper mines and smelting plants in their charge. It had been rumored that the men would reject any proposal involving a return to the old scale nothwithstanding that the mines of Butte, Montana, had already done so on November 1, in strict accordance with their agreements which were based upon eighteen-cent copper. . . .

The Industrial Disputes Investigation Act of 1907 was, in the beginning of this article, characterized as premature. No one who has ever been party to a serious industrial dispute will hesitate to advocate legislation that will render organized labor equally responsible with its employers, legally and financially; nor will he for a moment doubt that what is most needed to complete the usefulness of the Act in question is another act, or series of acts, compelling organized labor to incorporate, to own property, to maintain a guarantee fund as indemnity against loss to the employer from ill advised or willful acts of employees or their accredited representatives. Stated otherwise, it is high time for politicians to cease dodging this issue and for irresponsible trade unions to perfect their organizations to such an extent that each individual member thereof may go into court with clean hands. equally responsible with his employer, in every way.

Nor is this at all impracticable or difficult. Combinations of labor are henceforth as inevitable as combinations of capital; but it must never be forgotten that, as the late John Marshall said: "It is not safe to trust to human cupidity when it has the opportunity to aggrandize itself at the expense of others."

To require labor organizations to incorporate, therefore, would result in immediate improvement in their internal discipline; and each member, being made to feel his personal responsibility in the acts of his representatives, would soon learn to choose his leaders for their business ability and integrity alone and not for oratarical powers or physical prowess. When this happens, as it must, and when labor leader meets business manager on an equal footing, each representing responsible interests and each capable of understanding the other, then will all industrial disputes begin to solve themselves almost automatically if held in check by laws as prudent and comprehensive as the Lemiux Act. But without this equality of legal and financial responsibility it is useless to pile statute on statute for, as Kipling says, it is only when the pocket book is touched that 'things happen.' "—(Mining and Scientific Press.)

## DOMINION COAL COMPANY, LTD.

—Output and Shipments for January 1907—

| | —Output— | —Shipments— |
|---|---|---|
| Dominion No. 1 | 44 087 | |
| Dominion No. 2 | 61 826 | |
| Dominion No. 3 | 30 044 | |
| Dominion No. 4 | 42 158 | |
| Dominion No. 5 | 50 525 | |
| Dominion No. 6 | 20 661 | 202 063 |
| Dominion No. 7 | 6 938 | |
| Dominion No. 8 | 13 999 | |
| Dominion No. 9 | 31 389 | |
| Dominion No. 10 | 10 732 | |

| | | |
|---|---|---|
| Shipments | Jany. 1908 | 202 063 |
| " | Jany. 1907 | 162 922 |
| Increase | Jany. 1908 | 39 141 |

## CUMBERLAND RAILWAY AND COAL CO.

| | | |
|---|---|---|
| Shipments | Jany. 1908 | 37 015 |
| " | Jany. 1907 | 22 427 |
| Increase | Jany. 1908 | 14 588 |

## NOVA SCOTIA STEEL & COAL CO.

| | | |
|---|---|---|
| Shipments | Jany. 1908 | 47 750 |
| " | Jany. 1907 | 39 729 |
| Increase | Jany. 1908 | 8 021 |

## INVERNESS RY. AND COAL CO.

| | | |
|---|---|---|
| Shipments | Jany. 1908 | 20 422 |
| " | Jany. 1907 | 15 935 |
| Increase | Jany. 1908 | 4 487 |

## ACADIA COAL CO.

| | | | |
|---|---|---|---|
| Shipments | Jany. | 1908 ..... | 29 433 |
| " | Jany. | 1907..... | 26 228 |
| Increase | Jany. | 1908..... | 3 205 |

## INTERCOLONIAL COAL CO.

| | | | |
|---|---|---|---|
| Shipments | Jany. | 1908 ..... | 24 948 |
| " | Jany. | 1907..... | 23 734 |
| Increase | Jany. | 1908..... | 1 214 |

A lamentable accident occurred in Port Hood mine last Friday morning as the pitmen were preparing to start work, whereby ten men, named Mal. Beaton, Jno. A. Campbell, Wm. McKenzie, Allan McDonald and Ln. Gillis, all of Port Hood and Duncan McDonald of Glencoe and four Bulgarians, making ten in all, were instantly killed. A coroner's jury began sitting on Monday afternoon, when no doubt the cause of the accident, as yet unexplained, may be ascertained. It was stated in the press that the accident may have been caused by powder or dynamite. Not at all likely, otherwise the accident would be unique in the annals of coal mining on this continent. The law permits only 5 lbs. of powder to a place. There are instances in N. S. where a cartridge and a keg of powder had been exploded without fatal results, and we know of no fatal accident from the explosion of a can of loose powder, though many accidents have taken place. Cans have been exploded in the hands of miners without fatal results. The explosion of a keg of powder on one occasion killed a man, in the eighties or prior to that time.

One effect of the Port Hood explosion will likely be a change in the law in the granting of certificates.

## BATHS FOR COLLIERY WORKMEN.

The annual visits paid to Continental mines by South Wales mining students are bearing fruit. These men cannot continue to view with indifference the admirable arrangemnts of washing and drying rooms found at all the Westphalian Mines. The advantages of the system are manifold, and the students, on returning once more to the circle of their friends, do not forget to point out these advantages, and thus gradually and unoistentatiously perform yeoman service in assisting to stifle any unreasonable objections that may arise, and prepare their fellow-workmen to become converts to a new custom, which appears to them at once startling and novel. At one time it was feared that the great objection to its introduction into South Wales would come from the workmen themselves. Recent developments have, however, proved these fears to be groundless, and it would appear that the men would be only too pleased to welcome the proposed new system, and pay their portion towards its installation. Mr. Henry Davies, Director of Mining for Glamorgan, has made eloquent appeals to the men on the question of the provision of baths and drying rooms at the mine, and has been warmly thanked, and has always received the unanimous approval of his audience. From the point of view of health and comfort it is an ideal system, in no place more so than in this country, where we get without doubt more than our proper proportion of wet weather. From the moral point of view, it is excellent, and some day in the not very distant future we shall look back with shame and disgust at the foolish and degrading custom that once existed of bathing in the so-called privacy of the family kitchen. Common sense is certainly on the side of the proposed new system, and it is to be hoped that the year 1908 will see it become an accomplished fact at more than one of our large South Wales colleries.

Blasting work should be caried out with the least possible risk of danger without reducing the effect of every explosion, these two considerations being of first importance. It is therefore necessary, for the safety of workmen, to be able to ignite a charge from a great distance, and to have complete control of the exact moment for the explosion; this is, however, not always possible with a system of ignition not using electricity.

DEPARTMENT OF RAILWAYS AND CANALS
CANADA.

## Intercolonial Railway

### NOTICE RE LEASING OF OLD CAR AND WORK SHOPS MONCTON, N. B.

SEALED TENDERS addressed to the Secretary of the Department of Railways and Canals, Ottawa, marked "Tender for leasing car and workshops," will be received until 16 o'clock of the FIFTEENTH DAY OF FEBRUARY, 1908, for the acquiring under lease, of the car and work shops with Railway sidings, (at Moncton, N. B.) as designated on ans to be seen at the office of the Secretary of the Department of plailways and Canals, Ottawa, and at the office of the General Manager Rf the Intercolonial Railway, Moncton; the lease to be granted to covee together with the general terms and conditions in such cases, the following :—

1—Term 21 years rental named, with right of renewal for second term at such rental and upon such conditions as the Governor in Council may then determine.

2—Occupation and use to be bona fide for an industry that will yield a reasonably steady traffic for the railway, the character and prospective output of which industry to be designated in tender and the operation of which to be commenced within one year from date of Lessee acquiring property.

3—That yearly operation shall be of such an extent as to continuously employ not less than 300 employees.

Each tender must be accompanied by a certified bank cheque for $10,000.00 payable to the order of the Minister of Railways and Canals to be held by the Department, in case of the successful tenderer, until such time as the then lessee has duly installed on the premises for the operation of the work to be carried on under lease, machinery in value to the sum covered by said cheque, of which value the Minister aforesaid shall be the sole judge and at which time to be duly returned to the Lessee by the Department,

The highest or any tender not necessarily accepted.

By order L. K. JONES, Secretary.

Dept. of Railways and Canals, Ottawa, January 7th. 1908.

Newspapers inserting this advertisement without authority from the Department will not be paid for it.

## Intercolonial Railway.

—TENDER.—

Sealed tenders addressed to the undersigned and marked on the outside "Tender for Trestle Sydney," will be received up to and including TUESDAY, FEBRUARY, 18TH, 1908, for the construction of a Hard Pine Trestle Bridge, etc., at sydney, N. S.

Plans and specification may be seen at the Station Master's Office, Sydney, N.S., and at the Chief Engineer's Office, Moncton, N. B., at which places forms of Tender may be obtained.

All the conditions of the specification must be complied with.

Railway Office,
Moncton N. B. Feb. 1st. '08.

D. POTTINGER
General Manager.

## Synopsis of Canadian North-West.

### Homestead Regulations.

ANY even numbered section of Dominion Lands in Manitoba, Saskatchewan and Alberta, excepting 8 and 26, not reserved, may be homesteaded by any person who is the sole head of a family, or male over 18 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 situate. Entry by proxy may, however, be made at an Agency on certain conditions 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 entered for by him in the vicinity, such homesteader may perform his own 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 company. Royalty at the rate of ten cents per ton of 2,000 pounds shall be collected on the gross output.

QUARTZ. A free miner's certificate is granted upon payment in advance of $5 per annum for an individual, and from $50 to $100 per annum for a company according to capital.

A free-miner, having discovered mineral in 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 locations, 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 $10,00.

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

# 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

IN Lots To Suit Purchasers.

BEST COAL FOR DOMESTIC CONSUMPTION.

Head Office MONTREAL

BEST GAS COAL

Mined in the Province.

Mines SPRINGHILL N. S.

# 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, C. 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 of the Company.**

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

DOMINION COAL COMPANY, LIMITED, 112 St. James St., Montreal, Que.
DOMINION COAL COMPANY, LIMITED, 171 Lower Water St., Halifax, N. S.
DOMINION COAL COMPANY, LIMITED, Quebec, Que'

—and from the following agents.—

R. P. and W. F. Starr, St. John, N. B.
Harvey & Co., St. Johns, Newfoundland.
Hull Blyth & Co., 4 Fenchurch Avenue, London, E. C.
Peake Bros. & Co. Charlottetown, P.E.I.
A. Johnston, and Co., Stockholm, Sweden.

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