

MARITIME MINING RECORD

Dr. R. Bell
Geol. survey dept.

AND COAL AND METAL TRADES JOURNAL

Cumberland. * Pictou.

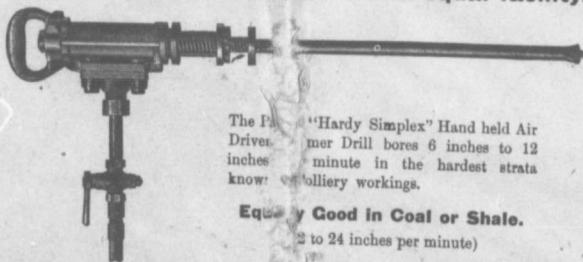
Cape Breton. * Inverness

New Series Vol. 11 No. 8 OCTOBER

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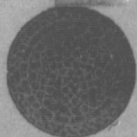
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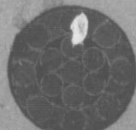
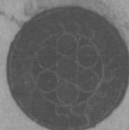
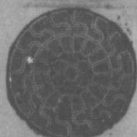
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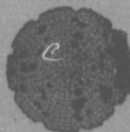
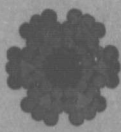
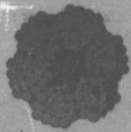
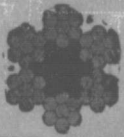
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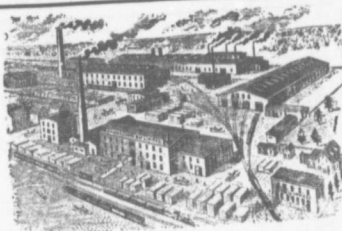
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75 Mixed for Hopewell	7.00
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21 Mixed for Pictou Landing	7.45
62 Mixed for Pictou	8.30
65 Mixed for Mulgrave	11.10
19 Express for Sydney	11.15
25 Mixed for Pictou	12.45
120 Mixed for Truro	13.10
120 Mixed for New Glasgow	16.30
30 Express for the Sydney and Montreal	18.15
30 Express for Halifax and Montreal	18.30
140 Mixed for Pictou	18.45
101 Mixed for Pictou Landing	18.10
22 Mixed for Ho well	19.50
65 Mixed for New Glasgow	19.50
30 Express for Halifax and St. John	21.50
17 Express for New Glasgow	21.50
68 Express for Pictou	21.55

—TRAINS ARRIVE AT STELLARTON

79 Mixed from Hopewell	6.30
75 Mixed from Truroton	7.00
61 Express from Pictou	7.35
15 Express from New Glasgow	7.55
21 Mixed from Hopewell	8.00
65 Mixed from Truro	10.50
25 Mixed from New Glasgow	10.55
62 Mixed from Pictou	12.35
19 Express from Halifax and St. John	12.40
66 Mixed from Mulgrave	15.10
18 Express from Halifax and St. John	15.70
120 Mixed from Pictou	16.40
30 Express from Halifax and St. John	18.40
30 Express from Sydney	18.45
22 Mixed from Pictou Landing	18.55
77 Mixed from Hopewell	19.40
65 Mixed from Pictou	19.40
30 Express from the Sydney	21.40
30 Express from New Glasgow	21.40
17 Express from St. John and Halifax	21.45

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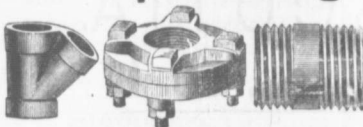
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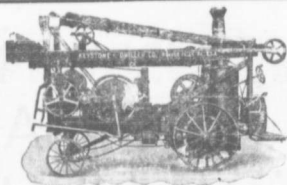
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Price of Complete Attachment
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Valves,
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"The acidity of the water, and the fact that of all the pumps I saw there two out of three were Jeansville Pumps."

an indication at least that we know how to handle the acid water problem.

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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

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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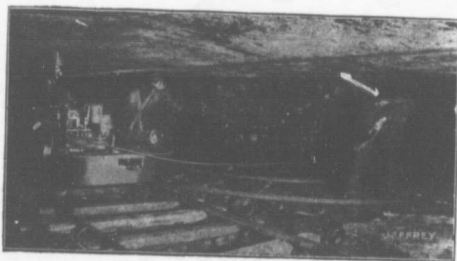
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The JEFFREY CRAB LOCOMOTIVE.

It gathers mine cars
from the working places without
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MINE VENTILATING FANS.

Under direct special arrangements with the Inventor, we are building the "Capell" Patent Mine Ventilating Fan, for the Canadian Coal Mining Trade. They are largely used in the Coal Mines in the United States and Canada, as well as in Great Britain and the Continent, probably exceeding in number any other high class fan in use to-day.

We invite inquiries, which will have our closest attention.

I. Matheson & Company, Limited,

ENGINEERS,

New Glasgow, . . . Nova Scotia.

The...
MARITIME MINING RECORD

Vol. 11, No. 8. Stellarton, N. S., Oct. 28th, 1908. New Series

A NOVA SCOTIA COAL MINE.

BY H. E. COLL.

Owing to the large number of seams worked, and the dips ranging from flat to 80 deg., no two mines in the Pictou County field are worked alike. We also find in each mine different methods of working the coal. This is due to local ridges and basins accompanied by pinches and rolls, which necessitates some modifications of the general method.

The highest bed worked in the field is the McKay seam, from which the Nova Scotia Steel and Coal Co. obtains 150 tons per day at the Marsh mine, located about the centre of the eastern section.

The next seam in the series is the one worked at the Vale mine, of the Acadia Coal Co., located at Thorburn; as these two seams are worked by the same methods a description of the latter will answer the purpose.

A slope was driven on the dip of the coal, at 20 deg. for the first 500 feet, and then flattening off until at 2400 feet a local basin was reached and the main landing put in. As development continued, it became apparent that other basins existed to the right and left, and slopes were driven down to run this coal. That on the right hand side is about worked out, but on the left side recent work has proved that the slope is on the main dip of the field, in a southwesterly direction with an average grade of 6 degrees.

The coal is 3 ft. 6 inches high, and has practically no parting on either top or bottom. It is hard and tightly set, and contains no bands or impurities. The roof is flinty shale up to 2 ft. 6 inches thickness, and parts readily. Lying above this is a splinty shale, from 10 to 20 feet in thickness. This crushes and squeezes on the least pressure from the upper strata, and as there is 700 ft. of cover on the dip workings, the pressure is considerable. Levels are driven off the main dip, to the left and right at intervals of 600 feet. When the levels are driven in 400 feet, the first balance is driven up directly on the rise of the coal, and bords and rooms are turned off and driven on 50 feet centres. These bords are from 200 to 300 feet deep, and as soon as driven in, the pillars are started back.

METHOD OF CONVEYING THE COAL.

The coal is lowered to the level from the bords by a cage, which is balanced on a drum by a carriage containing sufficient weight to pull an empty box. The drum is controlled by a brake, operated by a boy. When the cage lands at a bord, the empty is shoved into the bord and turned over on its side and the loaded box pushed past onto the cage. The brakeholder lifts the brake and the cage lowers to the level, where

the box is run into the turnout and from there is hauled by horses in trips of six boxes, to the level landing.

The diameter of the brake drum is dependent upon the length of the balance, angle of dip and weight of box to be handled. They are built up with segments of 3 inch spruce, having beveled edges so as to make close joints. In the centre of the drum is a three inch hardwood flange which keeps the two ropes separated, and on the cage end of the drum is placed the brake band. The balance box has a 16 inch track gage, and is made of two 4 x 1 inch bars bent so as to form a carriage which carries sufficient cast iron weights of 195 lb. each, to overbalance the empty box. The frame is mounted on 12 inch wheels so that the weight travels very close to the wheels.

The wagon, or, as it is locally termed, 'box' used, weighs 750 lb., and holds 1540 lb. of coal. The level landing holds 12 loads or two horse trips. On the main dip a pair of 'Ligerwood' 10 x 12 inch friction drum engines operated by compressed air, haul the boxes in trips of 12, up to the main landing, a distance of 3000 feet. From here the boxes are hauled by horse 700 feet to the main landing, where they are attached in trips of six to the main slope ropes. The main dip faces are now 1½ miles from the slope mouth.

HOURS OF LABOR.

All mine employees are lowered into the mine between 6 and 6.50 a. m. Each 'rake' takes eight minutes to land at the bottom of the slope. The average time the miners and loaders reach their faces and are ready to commence work is 7.15 a. m. Owing to the size of seam, method of mining and local conditions, the miner leaves but little coal from the previous day, so that by the time he gets to the main landing it is 8 o'clock.

Only one miner and loader work at each face, and they mine and load an average of four boxes in the morning and three in the afternoon. The miner quits about 2.30 p. m., leaving one box of coal for the loader to fill out and making his actual working time at the face 6½ hours, and the loader's time 7½ hours. During this time the miner cuts an average of 0.68 ton per hour, and the loader fills 0.61 tons per hour, making a total for the day's work of 4.6 tons of coal. Taking the average for 1907, the miner had an earning capacity of 34c. per hour, and the loader 22c. per hour.

AMOUNT OF POWDER USED.

Previous to this year, black powder has been used, the shots being fired by a squib. In January a Government-permitted explosive was adopted after six months' experimenting with various explosives. The men made strong objection to any change as there was considerable difference in the price, but this was offset

by the strength of the new explosive, and the result is shown by the following table:

	Black Powder.	New Explosive.
No. tons of coal per lb. explosive.....	1.424	3.09
No. tons of coal per wkg. face per day.....	4,398	4.00
Powder cost per ton of coal.....	15 cents.	10 cents.

The difference in tonnage per working face was really due to more pillar work being done in '07, thus reducing the amount of coal per pound of powder, in '08. The decrease in the cost per ton to the miner, together with the high increase in the factor of safety are the main features which have convinced both management and miners that there is no comparison between the usage of black powder and a high explosive. The latter is used in an average charge of 6 oz., and is fired with a No. 6 low-tension detonator, by a battery placed in the nearest cross-cut. A misshot is extremely rare, but when it does occur, the rules in force fully protect the miner. The powder has the following composition:

	Parts by Weight.	
	Maximum	Minimum.
Nitrate of ammonia.....	85	76
Nitro-Glycerine.....	7	9
Wood meal (dried at 100 deg. C.).....	10	8
Moisture.....	25	1

The following regulations governing the use of explosives have been adopted by the Acadia Coal Co'y, and have been approved by the Mines Department of Nova Scotia.

POWDER RULES.

1. When a miner holding a shot-firer's certificate is given permission to fire his own shots, before firing, he must carefully examine the place where the shot is to be placed, and if he discovers any noxious gases, defects in the roof, or danger from any other source, no shots must be fired until such danger is removed.
2. No shot must be fired until the face is either sheared, mined or undercut, not less than three feet deep, the full size of the place, or having an open end equal to the same, without special permission.
3. No shot must be fired when the borehole used for firing extends beyond such mining, shearing, undercutting or open end. All holes found beyond such mining, shearing, or open end, will be termed fast shots.
4. No shot must be fired with the timbering at a greater distance from the working face than 8 feet, or closer if required by the management, or by a special permit that timbering may be a greater distance from the working face.
5. He must return immediately to each shot after it fires, and if he should find that the shot has lighted a blower of gas, liberated a quantity of gas or disturbed the roof or timber and caused danger beyond his control, to either extinguish, repair, or make safe, he shall immediately notify some official at the time in charge of the mine or district in which he is working.
6. When a 'bench' shot has been fired, the miner must immediately proceed to turn over the coal or load it out.
7. If the shot fails to go off, no person shall be permitted to enter the working face, until such time as he receives permission from and is accompanied by the examiner of that section.
8. No holes shall be charged for a longer period than 30 minutes before being fired.
If, owing to an insufficient charge of powder, a face shall be 'hung up', all the coal to the depth of that shot must be mined out by hand pick or machine, unless permission is given by the examiner of that section to drill and fire another shot.

10. No miner or shot-firer shall leave any charged hole in his working face when quitting work for the day.

11. No person shall drill any hole in such manner that when fired it will be liable to shoot into either roof or bottom of the coal seam.

12. If a miner, at any time before or after firing a shot, finds that any timber requires to be set or replaced, he must not leave the place until such requirements are duly executed.

13. He shall also set sufficient hoisting props when required to do so, and to work his place in a safe and proper manner.

14. In firing shots with a battery, the wires shall be first connected to the fuse wire, and the connection to the battery shall be made only by the person who has made the connection to the fuse wire.

15. Every precaution must be taken to insure each person being in a safe place before any shot shall be connected up to a battery.

16. No battery shall be tested or tried at any point outside of the lamp station.

17. No batteries shall be permitted to be used by any other than one holding shot-firer papers.

18. No person shall be permitted to fire shots without permission from the examiner or official in charge of the mine.

Over 150,000 shots have been fired since these rules went into effect, and so far not one accident has occurred in connection with the use of explosives. These rules are rigidly enforced and any violation is immediately followed by prosecution under the Mines Act.

LONGWALL.

During the past year two sections each of 600 feet length of face, have been laid out for longwall working, and it is the intention to substitute this method for the bord and pillar as soon as possible. The greatest difficulty is in getting the miners to work longwall as they are unfamiliar with the method and are not inclined to take up anything new. The work has progressed far enough to prove that the coal can be mined with one-half the present amount of powder, and all the coal extracted, instead of the 85 per cent, which they are now getting. The intention is to allow the roof to bend and rest on the packing and prevent any actual break. A straight face 60 feet long is being worked on the strike line and gates placed every 30 ft. deliver to a balance. It will probably be found necessary to bring over a number of English longwall miners in order to get the method firmly established.

WATER.

The mine water amounts to an average of 350,000 gallons per twenty-four hours. This is handled by a pair of 12 $\frac{1}{2}$ and 22 $\frac{1}{2}$ x7x24 inch Knowles compound duplex pumps; steam driven and located on the 1800 ft. level, where also is located the main dam or sump. Into this latter, the 200,000 gal. from the east sinking pump is discharged. This latter sinking pump is a Knowles single pump, 18x 8x18 in., and discharges through a 3 in. line 2005 feet long. On the west side sinking, a 6x3x9 inch Cameron pump is located at the No. 6 level and acts as a relay to a 6x4x10 inch Jenneville sinking pump placed at the No. 8 level. This water amounts to 50,000 gallons per twenty-four hours, and is pumped 5,000 feet against a head of 450 feet. All the sinking pumps are operated by compressed air.

It is proposed in the future to establish a main pumping plant at the No. 6 level and drain all the west side water to this point by means of an open ditch.

The plant would be operated by either compressed air or electricity and would discharge through a bore-hole to the surface, against a 700 ft. head. There would be an immense saving in doing away with the long line, for at present over half the water is pumped more than a mile to the surface.

LIGHTS.

Safety lamps of the Muesler type are in use, but a new equipment of the Ackroyd & Best safety lamps having a magnetic lock and electrically ignited, is being installed. Strict rules are in force governing the use of safety lamps, and violations are prosecuted under the Mines Act.

MINE OFFICIALS.

The mine officials consist of a mine manager, underground manager, two overmen, examiner and three shot firers, or 8 officials for 300 mine employees, giving an output of 450 tons per day. At first sight, this number of officials seems excessive, but as they are held responsible for the discipline of the mine and performance of work in accordance with the rules and regulations, any less number could not give adequate protection to the men and the company. Two of these officials are on night shift. That this safeguarding pays is shown by the fact that there has not been a fatality in this mine during the past five years. The Vale mine, like others in the district, suffers from the loss of time by the employees, which constitutes at the present time the most serious drawback to the coal mining industry.

During 1907 the average number of days worked per month per employee was 20, while the average number of days worked per month, per miner was a little less than 19. In other words they lost a full week each month, or each month equalled a loss in tonnage of 2428 tons. For the year 1907, the pay-day drunks, picnics and fishing trips cost the Vale miners in wages lost, over \$20,000 and meant a 25,000 ton loss in production to the company. While this is bad yet the men at this plant are not such heavy offenders as at many other plants in the Province.

SURFACE PLANT.

The boiler plant consists of three 200 h. p. Sterling boilers and one 50 h. p. tubular boiler. They are hand fired, using culm coal, the hoist of coal per ton burned averaging 7.75 tons. The hoisting engines are 16x36 in. Walker build, geared 2 to 1 to an 8 ft. diameter drum, which carries two 1 in. by 2800 ft. ropes. The trips are hoisted at an average speed of 1000 ft. per minute. Ventilation is furnished by a 28 ft. diameter Walker fan, direct connected to a 24x24 inch Walker engine, giving 40,000 cubic feet of air per minute on a water gage of 3 in. Compressed air is furnished by an 18x20x24 inch straight-line Ingersoll-Sergeant compressor. This machine never stops except for about six hours on Sunday.

On the bankhead, the coal is dumped over a bar screen and the nut and culm are taken out. The lump travels over a belt 30 ft. long by 5 ft. wide, and is cleaned of all stone and refuse before dropping into the car. The mine has a fairly steady market for run of mine, lump and nut. The worst of the culm is consumed for power at the plant. A railroad, six miles long, owned by the coal company, connects with the Intercolonial railroad at New Glasgow.

THE OLD BYE-PIT.

In view of the fact that Mr. Harry Coll, accompanied by Manager Lott, of the Allan Shafts, made a descent into the air shaft, of the series of pits south of the Ford pit shaft, known as the Bye pits, it may be of interest to cull some notes from a number that appeared in the RECORD eight years ago. The shaft that the explorers descended is 220 feet deep and is on the main seam. The several pits were closed in 1849 on the outbreak of a fire. Mr. Coll found the old workings in fairly good condition, and there were no indications that the fire which had occurred in the lowest of the series had travelled to the rise. Mr. Harry Coll has it in contemplation to descend the Fan shaft of the Ford pit, and endeavor to ascertain what lies between there and the Bye pit. If the fire was merely local in this pit, a large body of coal may possibly be secured. It will be noticed that the notes are not strictly in chronological order:—

In his history of Pietou Co., Dr. Patterson claims that Dr. McGregor was the first to discover coal, say in the year 1798. In 1799 the Doctor used it as a fuel and showed it to the candidates in the first contested election in Pietou Co. But some one must have discovered coal many years previous to 1798. As early as 1785 reports were current of the occurrence of coal in Pietou Co.

John McKay worked a three foot seam on his father's land in 1807. This coal was probably worked without lease from the crown as the first lease for coal was not granted until 1809, when one was granted to E. Mortimer.

On Sept. 29th. 1817 Alex. McKay, who along with his father had come from Scotland in 1807, stated that he had found coal on his land and wanted a lease from the crown.

On Jan'y 1st., 1818, two mines East and West side of the river were leased to E. Mortimer for 20 years at a rental of £370.00 currency, also to pay a royalty of 3/ per chaldron on every chaldron over 1400 sold.

Earl Dalhousie writes to Earl of Bathurst, June 12th., 1819, that the Home Government having approved of the leasing of N. S. coal, a lease had been given to Mortimer and McCully to work in Cumberland and Pietou Counties.

There seems to have been much quarrelling over leases and the right to enter lands. Mortimer was for some months prevented from taking possession by McKay. It seems also as if Mortimer's first lease had been cancelled and a new one granted in 1819 with new conditions. A lease given on 1st. January 1819 stipulates for a Rental of £230.00 and £110.00 on West and East sides respectively and of 3/ royalty on all coal raised on West side over 1700 and the same for all coal over 700 chaldrons raised on East side. That was a royalty that would make the present day operators wince.

Mr. Mortimer died in 1819 and the mines were leased on the same terms to Smith and Liddell who worked them till Jan. 1, 1828, when their surrender being accepted the mines were let to the General Mining Association.

There was considerable delay in getting land at the mines in Pictou Co. in 1827 owing to the exorbitant prices demanded by the holders. Carr was very determined. How came he to be mining? Was he a sub-lessee of Liddell.

A brick yard was started in 1827, and that is the reason there are brick houses in parts of the Old Mines district.

In 1827 the General Mining Association took hold. The old store pits were the first to be sunk by the company in that year. They were finished it is believed in 1828. Mr. Smith in this year was sent out from Britain to take charge of operations. In June 1827 a vessel arrived at Pictou from Britain with men, machinery and supplies. In Dec. 1828 a steam engine, the first erected in Nova Scotia, was in operation at this mine.

From 1827 to 1831 the G. M. A. had spent the large sum of £100,000 on their properties.

In 1827 they shipped 75 chaldrons, 1828, 4,394, 1829, 5,391; 1831, 6,045; and in 1831, 6,439 chaldrons of coal.

On Dec. 29th, 1832 the pits were found to be on fire early in the morning. A number of horses were burned. The coal was found to be on fire in places too remote from each other, in the mine, to allow of the supposition that the fire was accidental. As other evidence tended to corroborate this view it was deemed advisable to ask for an investigation. An investigation was held presided over by Mr. C. R. Fairbanks. The evidence showed that the fire was the work of incendiaries. The pits had to be flooded, and a hundred men were thrown out of employment. In May, 1833 work was partially resumed, the water being pumped out soon as possible.

The first price of coal at the old mines was 13/6 per chaldron. It was put by Mr. Carr at this low figure in order to introduce it. For years the price varied from 13/6 to 17/.

There was a fairly strong force of men employed at the Albion in 1836. It will be noticed from the following classification of labor how small the proportion was of miners. The Brick business must have been extensive, judging from the number of hands employed.

The men employed in 1836 consisted of

- 1 Resident Manager.
- 6 Clerks, Bailiffs and Overseers
- 66 Colliers; 28 drivers.
- 3 Engineers; 8 carpenters.
- 7 Masons; 3 blacksmiths.
- 2 Sawyers; 1 stableman.
- 1 Woodman; 1 Saddler.
- 18 Surface drivers; 18 blacksmen.
- 48 Laborers, 2 pick carriers
- 4 Wharfsmen; 2 farmers,
- 32 Brickmakers; 28 founders,
- 5 Crew of S. S. Albion.
- 10 S. Carpenters; 50 trimmers, etc.

or a total of 334 persons; a pretty strong force for the quantity of coal raised.

The company sustained the following losses by fires in the 'old' pits.

1831	14 horses and material	£ 400
"	9 months pumping	860
1837	4 horses killed.	100
"	5 months pumping	360
"	New pit road	100
1839	30 horses and material	3,389
"	Pumping of water	132

"	Filling holes at Back Mines	177
"	Loss by sale of engine	450
"	Loss value winding engine	800
1840	Fire in new pits	109
"	6 coke ovens pulled down	460

or a total of £7,339 0/0.

The year 1838 marks the advent of pseudo royalty, or the time when mine managers were the only persons of divinity this side of the water. We come to this conclusion from the fact that in the year 1848 the 'groom' first makes his appearance, as a necessary adjunct to a colliery—especially a non paying one.

In 1839 an agreement was made with the government whereby the company paid a rental of £2,333, and a royalty of two shillings currency on all coal sold over 20,000 Newcastle chaldrons.

From the time of taking hold in N. S. up till 1839 the General Mining Association had spent the large sum of £300,000.

They had a decided advantage in the old days over the present time, in the thickness of coal. The thickness of coal worked in the Store and other pits was about 24 feet. They had too much coal in fact, and did not know how to husband their resources, for about one-third only of the coal was extracted, the remainder being lost one way or another. About 1842 the G. M. A. awoke to the fact that the coal business as then conducted in Pictou County was a most unprofitable one. No returns had been made for 16 years. Indeed it had been all the other way. In 1842 they sent a memorial, setting forth their grievance to the authorities. They complained of the heavy duties on N. S. coal in the U. S. \$1.75 per ton or 2.20 per Manchester chaldron; the completion of the Reading Railway had caused a reduction in price of coal equal to \$1.50 per ton; the Cumberland and Baltimore Ry. was completed, the coal is selling at the mine 18 f. o. b. currency. Indeed prospects looked so bad that the G. M. A. proposed closing the Pictou Mines.

The fire in the Store pit which started in 1839 is found still to be burning in 1842.

Among the things contributing to failure of profits were the bad surface arrangements. The colliers in 1842 were a happy lot making from 8/ to 12/ per day, with privileges, such as free house and coal, which amounted to over £12.00 per year. The colliers were masters of the situation. They would not allow the laborers to touch the coal face, or do any work of a collier. They were in a sense a closer corporation than ever the P. W. A. was. They, the miners would sometimes take an apprentice, and the apprentice had to pay a fee. The miners may have been as well paid then as now, but not so the laborers. Three and six pence or say eighty cents a day was the standard wage.

In a report on the Albion Mines in '43 six causes of loss are given; and it may as well be noted that the causes leading to loss then have been known to act in a similar fashion since. The causes of loss are as follows:—

- 1 Speculation in various matters.
- 2 Fluctuation in the general management.
- 3 Works unnecessarily expensive.
- 4 Too heavy stocks of material.
- 5 Imperfect plans.
- 6 Disadvantageous modes of carrying on the work.

The striking feature of the above report is its indefiniteness. It is too general in its charges. Like all reports it omits important causes. There is no mention made of the 'groom' nor of the old time managers' men servants and oxen and asses.

The Bye pit started in 1837. No. 2 was driven in 1838. The pit fired in July. Three men, McKenzie, Robertson and Kern were killed. Water was let in. The railroad to Abercrombie point was finished in 1838 and abandoned in 1889. The road was laid out by P. Crerar. Crerar's estimate of the cost of the road was £35,574.9. It cost far more than that. What it actually cost is not known, but it was put down at £76,100. So when the railway was abandoned as good as \$380,000 was thrown away. No wonder the Old Albion was unprofitable.

A head was driven from Bye pit furnace through the barrier to Store pit in 1844.

Poole as manager came in 1840.

Averick came in 1841.

Scott came in 1854

Redpath killed in Cage pit in 1858.

The Dalhousie pit was sunk in 1849.

The Foster pit was sunk in 1866. In May 1869 it took fire. This led to the final abandonment of Dalhousie.

DEVELOPMENT AT JOGGINS.

We had intended this issue to make some comment of our own on developments at the Joggin's Mines, but are saved the necessity by the appearance of the following, which covers the ground, in the Montreal Star:—

"The operations of the Maritime Coal Railway & Power Company during the last twelve months have worked a remarkable transformation on the shores of the Bay of Fundy. It is difficult to realize that the property, which is the site of one of the most up-to-date mining plants in the world, carrying on active coal mining operations on the most economical principles, is none other than the historic "Joggins." Nothing now remains of Joggins but the town (which is being metamorphosed), the name, and about two hundred million tons of coal, fully equal to the best in Nova Scotia. "The old mine has been abandoned, the old bankhead demolished, and best of all the old methods of management are a thing of the past, and remembered only as a joke that was not worth what it cost.

The new bankhead is situated at the head of No. 7 slope, immediately on the shore of the Bay of Fundy, and from it coal is dropped direct to the docks. The new bankhead has a capacity of 1500 tons a day, and is equipped with revolving tipples automatic quick-weighting choppers, distributing chutes, shaking screens and picking belts. The building of the bankhead was commenced on May 16th, 1907, and it was put into operation on the 5th inst., on which day it handled 240 tons of coal. This output will increase constantly and rapidly. The sinking of No. 7 slope was begun September 9th, 1907, and on Sep. 9th, 1908, had reached a depth of 2400 feet. Levels were broken off at 1,800 feet, and 2,300 feet, and gateways started on the 1,800 foot level. Three slopes have been driven the entire distance

one to be used for return air-way, one for main haulage way, and one for lowering timber and men. The main slope or haulage way is 10ft. by 10 ft. in the clear. All the roads in the slopes and levels are laid with 40 lb. rails. Compressed air mining machines are being put in and a McKernon Air Compressor has been installed to supply air for the machines and for the pumping. In the large areas of the airways the mine is working with good natural ventilation, but a fan has been installed and is ready for use if necessary. The hoisting engine is a first motion Vulcan; steam therefore being supplied by two batteries of boilers with a capacity of 800 horse-power. The seam has proved to be regular and shows no sign of fault, and the coal is harder and cleaner than in the old workings. The mine is exceptionally dry, all the water being handled by one small pump.

A new plant has quite changed the appearance of the neighborhood. Three miles of extensions and sidings have been added to the railway and a new up-to-date passenger station has taken the place of the old station. Machine shops and locomotive sheds have been erected, and a big Magul locomotive has been added to the rolling stock, necessitating the rebuilding of the bridges over the Macan and Hebert rivers, to carry the heavier loads. Having the best possible facilities for both rail and water shipments, the mine is evidently destined to be a large coal producer in the immediate future. The mine is also most advantageously situated for commanding an ample market, Moncton, St. John and a number of Bay of Fundy and Atlantic ports being of easy access. So far, the new property, like the Company's old property, has more than realized the estimates of the management, and if only one-third of those estimates were realized the concern would be a handsome dividend payer.

In the matter of safeguarding the lives of its workmen the United States enjoys the unenviable reputation of being the most backward of the civilized nations. While the accident rate in the mines in Germany, Great Britain, France and Belgium has been considerably lessened with the increase of scientific knowledge, the same is not true of the United States. During 1906, 6891 men were killed or injured in the coal mines of the United States, the total number killed being 2061. Since 1889 no less than 22,840 men have been killed in colliery accidents. As many fatalities have occurred during the last six years as during the preceding eleven years, and while the rate per 1,000 employed varied in the years 1895-1899 from 2.74 to 2.98, in the period 1903-1906 it ranged between the limits of 3.14 and 3.53. Contrast these figures with the corresponding returns from European coal producing countries showing the number of men killed for each 1000 employed.

France (1901-1905).....	0.91
Belgium (1902-1906).....	1.00
Great Britain (1902-1906).....	1.28
Prussia (1900-1906).....	3.39

—Engineering & Mining Journal.

Some of the advantages of steel for mine props are : (1) it is fire proof ; (2) it is available for all parts of the mine ; (3) it occupies little room ; (4) it will bear a pressure of sixteen hundred pounds to the square inch.

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.

OCT 28

It is not within the province of a trade paper to mix itself up in purely party politics. That is left to papers affiliated with either of the two great political parties. But the RECORD is not thereby precluded from discussing a subject, affecting a trade in which it takes much interest, and which one of the parties attempts by misrepresentation to make political capital out of purely for political campaign purposes, and purely for party gain. The Halifax Herald with an utter lack of discernment, ignorantly, and thoughtlessly, not to say wantonly, is seeking to make capital out of the fact that much of the coal shipped by water is carried in bottoms flying a foreign flag. The accusation against the government is not that Norwegian schooners have captured our coasting trade but that Norwegian steamers have supplanted Nova Scotia schooners. With the great expansion of the coal trade during the past dozen years Nova Scotian coal mine owners had either to employ a large fleet of big steamers or let the trade go to foreign countries. And if they employed in their trade vessels flying a foreign and not a British flag it was solely and simply because British steamers equal to the requirements did not present themselves. The cry of the Herald on behalf of the schooner owners is that foreigners have taken away their living. Would the schooner owners be in a more complacent mood had that living been taken from them by British steamship owners. I do not think so, and so it comes down to this: Must steamers be eliminated wholly in order to give the coasters the coal trade. The question further narrows to this: Must the coal owners abandon their best markets in order that the few sailing vessels offering may be regularly and fully employed? The schooner owners claim that steamers have ruined their trade; to which the coal owners reply, 'and the trade will be ruined without steamers.' The schooner owners may say that they do not want to displace the steamers but they want to have their vessels loaded in turn. In this respect they may have suffered in the past, but taking the present year they can have no complaint whatever. If the coal trade is to prosper the mine owners must make sure of means for shipments of coal. Could they depend at all times on a plentiful supply of vessels? They could not. One coal company kept advertising for months for schooners to carry coal, and could only secure an odd one now and again. With our largely increased shipments by water, to de-

pend on sailing vessels is wholly out of the question. All the schooners available could not meet the present requirements of the trade. Last fiscal year, to take figures that may not readily be disputed, there was shipped from C. B. County by water some 2,500,000 tons of coal, exclusive of bunkers. Taking the shipping season to last for 160 days, that is the high average of 23 days for 7 months, the daily shipments by water reached 15,625 tons per day. In order to ship this quantity without the aid of steamers, seventy-eight schooners of an average carrying capacity of 200 tons would require to be loaded daily. Assuming a round trip to consume twelve days, in order to meet the requirements of the C. B. trade alone a fleet of at least a thousand schooners would be required. But if even such a fleet could be commanded what could be done with them. The half of them would be idle all the time. Why? Because a five thousand ton steamer could be loaded as quickly as a five hundred ton schooner. Including the time taken for trimming not more than 28 schooners per day could be loaded at the several piers of the Dominion Coal Co., seven at those of the N. S. S. and Coal Co., and four at the piers of the other companies, or a total of thirty-nine per day. That number at 200 tons each would give shipments of 7,800 tons per day, or exactly half of the shipments necessary to meet the requirements of the coal owners. Instead of shipping 2,500,000 tons in the shipping season, half that quantity only could be shipped, and the loss thereby involved to the workmen at the C. B. collieries is a matter beyond calculation. The adoption of a policy in regard to coasting vessels such as propounded by the Herald would fling the coal trade of the province back to where it was 20 years ago. If the Herald or the coasters' owners reply 'We are complaining of Norwegian steamers only', the question then to be asked is: 'Will the substitution of British for Norwegian steamers satisfy you'. How should it, they would still be where they are. We all might wish to see our coasters regularly employed, but not all of us at the expense, and to the certain incalculable injury of the coal trade, Nova Scotia's greatest employer of labor, and her chief source of revenue.

The complaint of the coasters is nominally against Norwegian vessels. Would the real cause of complaint be removed if these steamers were to register as British. It would still remain in its full force, therefore the complaint in truth is against the employment of steamers. As has been shown the employment of sailing vessels alone would entail a loss of 7,800 tons in shipments daily for seven months in the year. Let us suppose that the schooner owners were willing to allow five British tramp steamers of an average of 3000 tons to be loaded weekly, there would still be a shortage of transportation facilities of 5,000 tons per day. The average output per man employed by the Dom. Coal Co. last year was two tons per man per day, on the basis of only 260 working days per year. Short shipments of 5000 tons daily mean loss of employment to 2500 men for 161 days out of the 260 in a year. That number thrown idle in C. B. County alone would so glut the labor market that men would have to flock to other mines (or leave the province) and a big drop wages would be sure to follow. It need scarce

be explained why the coal companies can ship in the same space of time about three times as much by steamer as by schooner. It is due to the great delays in trimming the latter.

- Rubs by Rambler.

There are those who clamor for state ownership of public utilities, railways included. They think under such a system the public would be better served. State ownership may work well in some countries, while in some others not a great deal can be said in its favor. Competition would be withdrawn and a stimulus to the promotion of business. We have in the I. C. R. a state owned railway in Canada. Does it cater as would a private or corporation owned railway, to the needs of the public. That is a question open to debate. If an individual or a company propose to start a coal mine, a factory, or other public work or to build a distributing warehouse, do the officials of the railway hasten to inform the individual or the company that they will assist him in getting his products and his requirements bended knees the individual or the corporation, and plead and pray that they put in a sidethen only under onerous stipulations. Now it is different in countries where the railways are controlled by corporations. Let me give an instance. A syndicate has become possessed with the idea that in a district near Nottingham, hitherto unsuspected of being in the productive measures there is coal, and for the purpose of information have commenced boring. No sooner did a firm of shipowners in Hull get word of the boring than they hastened to the syndicate in an effort to arrange terms for the transportation of the coal should it be discovered. And the Midland Railway Co'y. also hastened to express its readiness to construct sidings and to afford station accommodation. Contrast this action with that of the I. C. R. Take an illustration that occurs to me. Passengers for any point on the Inverness Railway have been dumped off the I. C. R. on to the rails, or into mud heaps or snow drifts at Hawkesbury Jet. There is not even the semblance of a station and it has been that way for years. State ownership is not an unmixed blessing in all cases.

A correspondent of the Glace Bay Gazette says there are thousands upon thousands of foreigners coming to our shores, and pleasing the bosses by working long hours and doing what the bosses tell them. He gives as a reason for going over to the U. M. W. that the foreigners require to be educated into our ways and taught our language. We were not aware that the U. M. W. had schools here the languages were taught. Indeed if all efforts be true the U. M. W. has not half succeeded in inducing the foreigners to conduct themselves in a half decent manner, whereas we have succeeded here.

One of the questions likely to be asked of some witness by the Eight Hour Day Commission, when that body meets to take evidence is, "Will an eight hour day tend in your opinion to a diminution of off days, holidays, or absenteeism?" To answer this question will, to any one familiar with the Cape Breton sayings of Keir Hardie, be easy as snuff. Let me call Mr. Hardie as a witness.

"Are you familiar with mining conditions in Great Britain?"

"Yes, your honor, I have them at my finger tips."

"Oh, that is nice. You then can inform the Commission how many hours per day the British miners work."

"Ma certie, yes. By persistent agitation of the unions and by legislation, the hours of labor have been reduced from 10 and 12 to 8 hours per day, and as I, myself, am a legislator, I should know whereof I speak."

"Your testimony is conclusive. You may step down Mr. Hardie."

Call Mr. Taliesin Richards of the National Association of Colliery Managers.

"How long did British miners work each day, say ten to twenty years ago?"

"To quote the words of Keir Hardie they worked ten to twelve hours per day."

"How long do they now work?"

"On the same authority eight hours."

"Has the shorter working day tended to a decrease in the number of off days, or holidays, or to a lessening of absenteeism on the part of the miners?"

"I cannot think it has; indeed the tendency is in the opposite direction. One of the most difficult questions which colliery managers have to contend with—add what must be dealt with in the near future—is the ever increasing amount of time lost by colliery workmen, not only after each recurring pay day, but at various periods throughout the year. At one large colliery statistics show that the average daily absences during last year varied at the various pits from 24 per cent to 28 per cent. The three last days of the week were always the best attended, therefore the attendance on the earlier days must be correspondingly exceedingly low. An effort was then made to find out how much of that lost time was due to accidents and illness, and by means of payments made by the colliery sick fund, which included all the workmen, 3.91 per cent was found to be absent through illness. The loss of time on account of days given to playing, drinking and holidays amounted thus to 22.09 per cent. Working that out on an average of £2 per week per man they found that the astounding amount of over £50,000 per annum was lost in wages alone at those pits. Again, the loss was not confined to unearned wages, for a much larger area of workings must be kept open and secure than would be the case if the men were regular in their attendance, the result therefrom being in-

creased danger from falls in the idle faces, resulting, often in impeding ventilation, greater lengths of roads to keep open, and, consequently, a considerable increase in the cost of repairs."

The Chairman—"That settles the question. Off days will not be decreased by a shorter day. Be seated Mr. Richards."

I have long been under the impression that clergymen have no fine sense of moral proportion. They tell me, and I believe it, that an organist does not make the best of choir leaders. He is apt to magnify his instrument and minimize the vox humanae. And so, it may be, that in, rightly, magnifying the spiritual, clergymen are apt to pay too little heed to the moral. There are many codes of morals, some austere and some easy. Often the view point will lead one to declare that a thing is moral, and another to say it is immoral. I am afraid many of our teachers have an obscured view point. For instance Dr. Shearer speaking before the Pres. Synod the other day congratulated the members on the fact that though politicians were calling each other names and accusing each other of very nasty things, Canada was no worse off than England or Scotland. What did Dr. Shearer mean? Does he mean to tell us that charges of graft, and lack of morals are as frequent on the other side as here. They may in Britain say cutting things of each other but they do not call each other grafters and rogues, simply because the charge cannot be made. Will Dr. Shearer tell us why Parnell lost caste all of a sudden and why Sir Charles Dilke, a really clever man, lost position and power. No members of the British government are charged with graft, nor members of the opposition. The nearest approach of a charge of graft was that made some time back against Mr. Chamberlain, and that was that he was directly or indirectly a member of a firm which supplied materials to the government. Dr. Shearer said that Gladstone, Disraeli, etc., got hard things hurled at them. True, but they never were charged with malfeasance in office as have some cabinet ministers in Canada in recent years, and in fact since 1878. There is all the difference in the world between the hard things said in Britain and the nasty things said here. Dr. Shearer did wrong to strive to condone a trait, in Canadian political life at any rate, that should make us weep.

I came across this in the Sydney Post the other day "Thomas O'Neil was the next speaker, and when he informed the audience that he rolled his last liberal vote, ringing cheers resounded through the hall." My. My. I wonder if this is the same Tommy O'Neil who some ten years ago roamed about Victoria Mines with a stiletto to stick in the back every man,—men better than himself—who would not bend the knee and swear servile allegiance to every little boss of the liberal party. Surely never. Can Tommy possibly have recanted. I wonder what Tommy wanted that the liberals didn't give him. Some will be very apt to declare that Tommy's leaving of his party is for his—past—party's good.

There is a feverish boom in the political market these days. It needs no market prophet to predict that the shorts will stampede to cover after the 26th.

The rapidly extending use of the gas-producer in the development of power is one of the most interesting industrial developments of the past few years. At first sight it would hardly appear a paying scheme to discard the steam boiler and engine and employ the heat of the furnace to generate gas in a producer for use in a gas engine. Yet we are told that in many cases the combination of furnace, producer, and gas motor is cheaper than the steam engine. L. P. Tolman, writing in *The American Exporter*, (New York,) tells his readers that producer gas power is a pronounced success in the United States as shown by the large number of installations already in operation. He estimates that there are over five hundred such plants in the United States, with an aggregate of 15,000 horse power. Besides the economy of this system, it has, we are told, numerous other advantages, which the writer sums up as follows:

"Simplicity. The producer, in which fuel gas is generated from coal, is almost as simple as an ordinary furnace for heating purposes. The gas engine is entirely automatic in operation and needs little more than the ordinary cleaning and care as to lubrication.

Absolute safety. There is no danger from explosion or from fire. It is absolutely safe even in the hands of men with little mechanical training, and the many plants which are in continuous operation, some of them twenty and even twenty-four hours a day, indicate that they are thoroughly reliable and will stand hard, every day usage. Boiler insurance is unnecessary with producer plants, and the troubles and dangers encountered with steam boilers are entirely avoided. The complete gas engine and suction producer plant is almost entirely automatic in operation, very little attention being required. Ordinarily the operator only needs to spend ten to fifteen minutes about every two hours to dump a few buckets of coal into the producer and give general attention to the plant. He can spend part of his time in other useful work, and an extra man as fireman is not required, even with plants from 400 to 500 horse power."

In addition there are no smoke stacks and no smoke, less coal to be handled and stored, and fewer ashes to dispose of. The producer will hold fire for several days and gas can be generated after fifteen or twenty minutes' blowing to revive the fire. The engine may be started on compressed air, and after getting up to speed it is then operated on producer gas. The operation of a modern producer of the suction type, using anthracite coal, is described as follows: Coal, admitted at the top of the producer, is partly consumed therein, and in this process of incomplete combustion gas is generated, as it is in a newly made coal fire. The subsequent processes are then described:

"The hot gas passes through a vaporizer in which a small amount of steam is formed, which, with a limited amount of air, passes under the grate of the producer. . . .

From the vaporizer the hot gas flows through the scrubber, which is merely a cylindrical shaped tank filled with coke, over which a spray of water is constantly sprinkled. The large contact surface of the coke effectually cleanses the gas of dust and impurities carried over from the producer, and also acts to cool the gas, which is essential in order to prepare it for use in the engine,

AROUND THE COLLIERIES.

The reopened Sydney No 2 is producing close on 400 tons per day.

Development work is well ahead in the Allan Shafts. There are sixty places in No. 1 Shaft ready for occupancy when the demand warrants.

If too much time is not lost during election week the output from the Drummond colliery for October may be ahead of this month last year.

The Nova Scotia Steel & Coal Co. is boring near Coal Brook to ascertain the extent and direction of the seam formerly worked by the Muir's and McNeil.

As soon as a drill can be obtained the management of the Drummond colliery purpose boring for coal within the Southern bounds of the Town of Stellarton.

Some of the Cape Breton mines are suffering from a short supply of water occasioned by the long drought, and some of the house owners too are hard put to obtain the needed supply.

Judge Drysdale has continued the injunction against the executive of the P. W. A. until he has had time to give his deliberate decision. This is expected in about two weeks.

Coal has been found two or three miles South of Stellarton on the West side of the river. The coal is considerably mixed and geologists say that it is a deposit from a wash out.

The Acadia Coal Co. is boring double shifted in the vicinity of the Allan Shafts. One of the objects sought is to gain some information about the seams underlying the main seam at that point.

November of 1906 was the best month in the history of the Nova Scotia Steel & Coal Co. so far as coal output goes. If nothing interferes between now and the thirty-first the October output will beat the record.

Sydney No. 5 the old G. M. A. mine which was supposed to be played out and was abandoned half a century ago, and reopened a year or two back, is producing an average of 400 tons a day of excellent coal.

Messrs Ross and Munro, Manager and Assistant Manager respectively of the Lake Copper Co. have resigned. It is said that the ore in the mine is showing up well. The shaft is now down considerably over a hundred feet.

The sinking of the main slope of the Drummond colliery has not made much progress of late. This is not owing to any fault in the measures, but chiefly because there is sufficient coal exposed for all needs for some time to come. There may also be a little difference between the company and the sinkers as to the price to be paid. The coal at the face of the slopes is 7 1/2 to 8 ft. thick, and the quality has suffered no deterioration. We will have to wait patiently until operations resume before venturing on further surmises as to the whereabouts of the famous fault.

President Lewis of the U. M. W. in a communication to the press, says, he is head of an association with nearly 300,000 of all nationalities. Peter, the organizer knows better than that. He puts the figures away beyond those.

The Vale colliery of the Acadia Coal Company is making excellent outputs for a small mine these days. The mine is in excellent shape, and the discipline all that could be desired evidenced by the fact that there has not been a fatal accident in five years.

And now the thought is given expression to that Messrs Ross and Plummer may shake hands at the entrance to the Privy Council, look wistfully into each others eyes, fall upon each others neck, relent, repeat and turn aside to the nearest restaurant, make it all up, and come forth the best of chums.

The S. S. Wacousta of the Nova Scotia Steel & Coal Coy's fleet continues to make some remarkable performances. She left Quebec at noon Thursday the 8th. inst.; preceded to North Sydney, took in nearly 6,000 tons of coal, left North Sydney Saturday, and was back in Quebec at daylight on Tuesday the 13th., thus making the round trip in 4 1/2 days, a remarkable performance indeed.

The capacity of the steel works at Trenton is between four and five thousand tons weekly of the more highly finished products of steel. Since February last the works have been run to their capacity. At no time since that date has the company had more orders on their books than four thousand tons and at no time had they less. The company during that time has worked largely on faith and it has not once failed them. The management have faith for the future. There will be no rush nor no lack for six months or so. After that it is expected things will hum at high speed.

The surface arrangements at the Allan Shafts have undergone a great transformation during the past few months. There is no confusion of materials on the surface. All the accumulation consequent upon the opening of a new mine have been cleaned away. The boiler plant is a model of efficiency and compactness. The landscape is not blurred by a succession of various sized smoke stacks. There is but one. There is no forced draft; it is induced. The draft is so strong that the firemen have to keep firm hold of their shovels else the draft might induce them to let the shovels go. And Harry says that 'inducement' and not compulsion is to apply generally to the operation at the colliery. The extreme workings are not more than a few hundred feet from the English slopes. Next spring the water in these slopes may be tapped. The screening arrangements in the main building are not yet completed, but will be in time for next seasons trade. The cages presently in use are single and temporary. They will be replaced in due time by ones to hold four boxes. The cage can be hoisted in about forty seconds. This will permit of the hoisting of 3,000 tons per day. The present output is about 375 tons per day.

AROUND THE COLLIERIES.

We have been shown more prospectuses of great coal mines in New Brunswick.

As soon as the excitement, consequent upon the elections, subsides it may be expected that the commission to enquire into the effect of an eight hour day, will begin its sittings.

The security of a winding rope may be increased to a great extent by giving the top end which passes through the drum logging two or three turns around the drum shaft.

The next parliament will contain off and on about 350 members, that is, if the predictions of the partizans come true. The Conservatives are certain to elect 175 and as the liberals are equally certain twice 175 makes 350.

It is reported that the Acadia Powder Co., has been bought out by the big British firm of powder makers the Nobles. At present considerable quantities of British made powder ore being used in Nova Scotia.

The Record has information that if things could only be straightened out at Mabou, there are capitalists in the U. S. willing to take hold of the property and put it in good shape. It is said there are capitalists too in Canada who are willing to make a bid if they can get the property without afterwards being involved in worrying legislation.

The introduction of the incandescent mantle in connection with oil as an illuminant has made it possible to install oil lamps that are as intense and powerful as the brightest electric arcs, and that may be used in places where the installation of electricity or gas would be impossible or where their expense would be prohibitive.

At some of the collieries in Scotland they are having lively times. Eviction notices have been served upon the miners of a large colliery. This surely shows that desperate struggles are still going on. Here in Nova Scotia we have not had an eviction since that in Springhill in August, 1879, and yet Keir Hardie comes over to lecture us on the benefits accruing from federations and affiliations and so forth. It seems that there is a lot of work for that gentleman to do in the Home mission field.

There are some coal mines in the United States whose outputs compare favorably with those of the Dominion Coal Co. For instance the mines of the Superior Coal Co. of Gillespie, Illinois, show an output that might make the three district superintendents of the C. B. Company sit up straight. On two successive days the output of No. 1 mine was 3,270 and 3,276 tons; of No. 2 mine 3,019 and 3,015 tons; and of No. 3 mine 3,601 and 3,619 tons, an aggregate of 19,800 tons for the two days hoisting of the three mines. Are such big outputs desirable, do they pay? The Dom. Coal Co. has about concluded that they do not, and from this out they will aim in their new mines at a production of from 1200 to 2000 tons per day.

Safety lamps should indicate not only gas, but foul air. The use of lamps which go out when the atmosphere is foul should be made compulsory.

When working longwall, where the roof is stronger than the floor, the roadways are likely to heave from the pressure of the roof on the pack walls. Great care must be exercised in this matter. The miner should be instructed to watch for any indications of heaving so as to be able to take prompt measures to prevent serious damage to the road.

We have received from the Jeffrey Mfg. Co., Columbus, Ohio, Bulletin No. 13 descriptive of the Electric Locomotive made by the firm for Industrial Haulage. The Bulletin is profusely illustrated showing the many kinds of locomotives produced.

We have also received from the Lea Equipment Co. of New York, Bulletin G. giving particulars of the Leaden high duty turbine pump.

Agents Wanted.

The Springfield Fire and Marine Ins. Co.

Cash Capital \$2,000,000.

Has entered Canada for the purpose of transacting a Fire Insurance business. Those desirous of representing the Company at Stellarton and vicinity will please address
KNOWLTON & GILCHRIST, St. John, N. B.
General Agents Maritime Provinces.

PRINCE EDWARD ISLAND RAILWAY.

TENDER.

Sealed tenders addressed to the undersigned and marked on the outside "Tender Branch Line Harmony to Elmira", will be received up to and including SATURDAY, OCTOBER 31st 1908, for the construction of a line of Railway from Harmony Station on the P. E. I. Railway, to Elmira, a distance of about ten miles.

Plans and specifications may be seen at the following places:—

The Station Master's Office, Souris, P. E. I.

The Resident Engineer's Office, Charlottetown, P. E. I.

And at the Chief Engineer's Office, Moncton, N. B. where forms of tender may be obtained.

All the conditions of the specifications must be complied with

D. POTTINGER,

General Manager,
Moncton, N. B.

Railway Office,
October 5th, '08.

INTERCOLONIAL RAILWAY.

For

DOMINION ELECTIONS.

October 26th, 1908.

Return Tickets will be sold at
FIRST CLASS ONE WAY FARE.

To all stations on the Railway and connecting lines in Canada.

Good Going October 23, 24, 25, 26th.

Good for return October 27, 1908

Amatite ROOFING



PAINTING a roof is work. Buying the paint is expense. Both are needless if your roof is Amatite.

When you finish laying Amatite, take away your ladder, pick up your hammer and knife, go away and leave the roof to take care of itself. A few years later you may go back and look at it if you care to, but it won't be necessary, and there won't be anything to do.

This is due to the fact that Amatite has a *real mineral surface*—a surface that is too strong to need protection—too durable to require painting.

If you buy one of the smooth surfaced roofings you will have to paint it every two or three years to keep it from leaking. In fact, such roofs depend on the paint almost entirely for their waterproofing qualities.

Amatite on the other hand depends for its waterproofing upon double layers of Coal Tar Pitch,—the greatest known enemy to water.

Amatite comes in rolls of 110 square feet ready to lay. No special tools are required, and anyone can lay it properly.

A sample of Amatite will be forwarded free on request. Send for it and see how much better it is than the kind which requires painting to keep tight.

The CARRITTE - PATERSON M'FG C'O'Y., Ltd.
St. John, N. B., Halifax, N. S.

From the Jeffrey Mfg. Company, Columbus, Ohio, we have received Booklet No. 28, descriptive of the several kinds of conveying machinery, besides much other information on other classes of machinery.

"FENERTY" SHOVELS

—FOR—
Miners, Contractors and
Heavy Work.

"GILMOUR" SHOVELS

—FOR—
General Purposes,

MANUFACTURED BY
The HALIFAX SHOVEL Co
HALIFAX, N. S.

ALL GOODS GUARANTEED.
SPECIAL SIZES and SHAPES MADE TO ORDER.

BRATTICE CLOTH

TARRED AIRPROOF

ALSO

FIRE-PROOF.

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As Used by the Leading Scotch-English
and Welsh Collieries.

PROMPT DELIVERIES.

DRUMMOND, McCALL & CO.

MONTREAL and LONDONDERRY, N. S.

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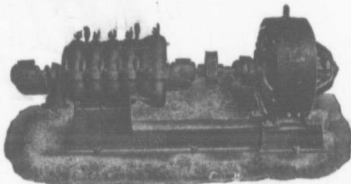
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**Dominion Foundry
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Montreal and Toronto.

Westinghouse Motors for Mines



Westinghouse Motor Driving Dayton Turbine Pump.

A Motor exactly suited to the conditions is essential in the correct solution of any power problem. A wide selection is afforded by the many types of Westinghouse Motors among them you are assured of finding the motor to exactly meet your requirements.

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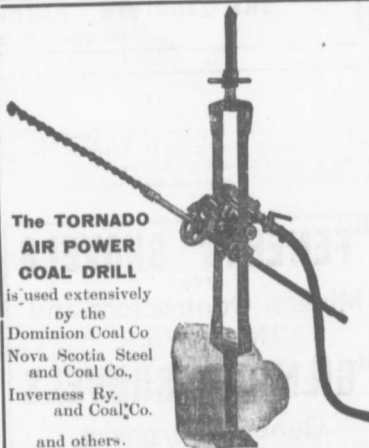
Have Excellent
 Wearing Qualities,

WILL NOT COCKLE
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Best for —

**SPRING AND SUMMER
 SHIRT WAIST SUITS.**

All Ladies who wish to look well
 wear **Priestlys Dress Goods.**
Greenshields Limited, Sole Agents.
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The TORNADO AIR POWER COAL DRILL

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

and others.

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



Synopsis of Canadian North-West. Homestead Regulations.

ANY even numbered section of Dominion Lands in Manitoba or the North-west Provinces, excepting 8 and 26, not reserved, may be homesteaded in 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.

An application for entry or cancellation made personally at any sub-agency's office may be wired to the Agent by the sub-agency, at the expense of such applicant, and if the land applied for is vacant on receipt of the telegram, entry papers to complete the transaction are received by mail.

In case of "persecution" or fraud the applicant will forfeit all priority of claim or of entry has been granted it will be summarily cancelled. An application for cancellation must be made in person. The applicant must be eligible for homestead entry, and only one application for cancellation will be received from an individual until that application has been disposed of.

When an entry is cancelled subsequent to institution of cancellation proceedings, the applicant for cancellation will be entitled to prior right of entry.

Application for cancellation must state in what particulars the homestead is in default.

A homesteader whose entry is not the subject of cancellation proceedings may, subject to the approval of the department, relinquish it in favor of father, brother, son, daughter, brother or sister, if eligible, but to no one else, on filing a declaration of abandonment.

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

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

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

(3) If the father (or mother, if the father is deceased) of a homesteader has permanent residence on farming land owned solely by him, not less than eighty (80) acres in extent, in the vicinity of the homestead or upon a homestead 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, by himself, six months' notice in writing must be given to the Commissioner of Dominion Lands at Ottawa, of intention to apply for Patent.

Before making application for patent the settler must give six months' notice in writing to the Commissioner of Dominion Lands at Ottawa, of his intention to do so.

W. W. CORY,

SYNOPSIS OF CANADIAN NORTH-WEST MINING REGULATIONS.

COAL. Coal lands may be purchased at \$10 per acre for 40 coal land \$20 for anthracite. Not more than 200 acres can be acquired by one individual or acted on the gross output.

QUARTZ. A free miner's certificate is granted upon payment in advance of \$5 per annum for an individual, and from \$20 to \$100 per annum for a company according to capital.

A free miner, having discovered mineral in place, may locate a claim 100 x 100 feet.

The fee for recording a claim is \$5.

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

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

Placer mining claims generally are 100 feet square; entry fee \$25 renewable yearly.

A free miner may obtain two leases to dredge for gold at five miles from the Interior.

The lease 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 \$10,000.

W. W. CORY,

Deputy of the Minister of the Interior.

Miners Wanted To Chew BULL DOG TOBACCO,

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

TRY IT!

The St. Lawrence Tobacco Co., Ltd.
—Montreal—

—W. B. Reynolds, Halifax Representative—

Brick! Brick!

The Westellar Terra Cotta Company

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

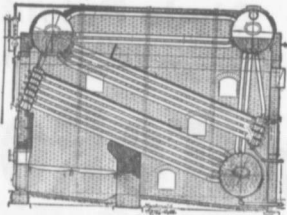
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Head Office—STELLARTON.

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

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WATER TUBE BOILERS



FREE EXPANSION OF TUBES.

PERFECT WATER CIRCULATION.

DRY OR SUPERHEATED STEAM

HALF THE USUAL NUMBER OF HANDHOLES.

ROBB ENGINEERING COMPANY, L't'd,
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Manufacturers of all Descriptions of

...EXPLOSIVES...

BEST QUALITY ONLY.

Blasting Powder and Compressed Pellets, Dynamite, Gelignite, Gelatine, Dynamite and Blasting Gelatine.

PERMITTED EXPLOSIVES.

For use in Gaseous mines. Suitable for all Kinds of Work

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Contractors to Admiralty and War Office, also Colonial Governments.

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Clyde Patent Wire Rope Works,

Cablegrams: "Ropery Rutherglen" **Rutherglen, Glasgow, Scotland.** Codes, A B C (11th & 12th Eds) A. L. Lobbers and Private.

Wire Ropes

for Winding & Haulage in Collieries and Mines.

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

The Nova Scotia Steel & Coal Co., Ltd., who use our Ropes largely, write that one of our Haulage Ropes at Wabana Mines has been in service for over 5 years, drawing over 1,700,000 tons in that time and is still good for further considerable service.

Agents in Nova Scotia:—Wm. Stairs, Son and Morrow, Limited.

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—Different Sizes and Qualities kept in Stock—

WIRE ROPE GREENING

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Rope Fittings. **Rope Grease.**
THE B. GREENING WIRE COMPANY, LIMITED.
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WIRE "DOMINION" ROPE
 For Everybody.
 PATRONIZE HOME INDUSTRY
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INVERNESS IMPERIAL COAL

INVERNESS RAILWAY and COAL COY.
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Miners and Shippers of INVERNESS (BROAD COVE)
Screened, Run-of-Mine Slack.
 —First Class both for Domestic and Steam Purposes.—

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

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

INVERNESS RY. & COAL CO'Y
 Time Table No. 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.				a. m.	p. m.
L 10 45	L 3 20		P. TUPPER JUNCTION	A 10 23	A 3 35	
S 10 01	S 2 50		PORT HAWKESBURY	S 10 27	S 3 27	
A 11 10	A 4 00		PORT HASTINGS	A 10 07	L 3 10	
	L 4 15		TROY	S 9 52		
	S 4 30		CREGNSH	S 9 20		
	S 4 05		JUDIQUE	S 9 02		
	F 4 18		CRAIGMORE	S 8 48		
	A 5 25		CATHERINE'S PASS	L 8 29		
	38		PORT HOOD	A 8 27		
	S 6 55		GLENCOE	S 8 10		
	S 6 16		MABOU	S 7 40		
	S 6 26		GLENDYBE	S 7 30		
	S 6 48		BLAKE RIVER	F 7 18		
	S 7 02		STATILORE	S 7 02		
	A 7 12		INVERNESS	L 6 44		
	p. m.			a. m.		

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MABOU & GULF COAL COMPANY, L'T'D.
 Miners of the

MABOU DIAMOND COAL.

Burns and Works like Bituminous;
 Looks and Lasts Like Anthracite;
IT HAS NO EQUAL.

Mines, Piers and General Offices

MABOU. CAPE BRETON.

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Mines and Loading Piers, Port Morien, C. B.

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

EXCELLENT FUEL FOR

Domestic, Steamship
and Railway Use.

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

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

Loading Piers at Port Morien C. B. Quick Dispatch.

Head Office, Halifax, N. S.

Mines Office, Port Morien, C. B.

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PATENT WATER TUBE BOILERS.

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 Softeners and Purifiers, Electric Cranes, Piping.

Our Text Book "Steam" Free to users.

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LIMITED.

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

Loose leaf supplies of all kinds made to order.

135 to 137 GRANVILLE STREET.

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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
of the Dominion Coal Company.*

**Air Compressors, Rock Drills,
Imperial Pneumatic Tools,
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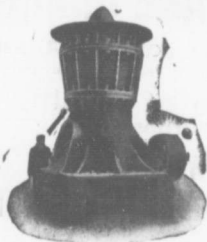
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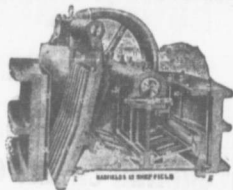
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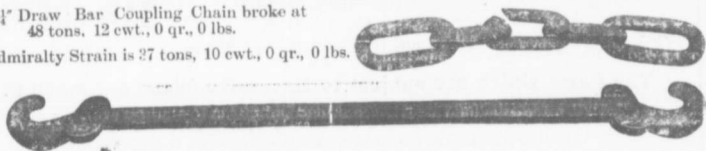
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FRESH MINED SPRINGHILL COAL

... 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.....	3.76 %	3.19 %	4.19 %
	100.00	100.00	100.00
Sulphur.....	1.15 %	58 %	79 %

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IN Lots To Suit Purchasers.

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