MARITIME MINING RECORD.

FEBRUARY 27. 1918.

INVERNESS RY. & COAL CO'Y.

Time Table No. 35, Taking effect 12.01 June 10th., 1917.

SOUTHBOUND Superior Dir.	STATIONS.	NORTHBOUND Inferior Dir
436.		437.
A. M.		P. M.
10 40	POINT TUPPER.	3 40
10 35	INVERNESS JUCT.	3 46
10 30	PORT HAWKESBURY	3 50
10 12		4 08
10 07	PORT HASTINGS	4 13
9 57	TROY	4 20
9 44	CREIGHSH	4 33
9 27	CRAIGMORE	4 [illegible]
9 18	JUDIQUE	4 [illegible]
8 55	MARYVILLE	5 09
		5 12
8 40	PORT HOOD	5 28
8 20	GLENCOE	5 36
7 50	MABOU	5 46
7 40	GLENDYRE	6 11
7 25	BLACK RIVER	6 26
7 12	STRATHLORN	6 42
6 54	INVERNESS	6 55
A. M.		7 05 P. M.

Concerning the 'Record'

The first Number of the 'Trades Journal' was issued the first Wednesday of 1880. The 'Journal' while taking a deep interest in the Coal Trade, was more particularly interested in matters affecting the welfare of those employed in the coal mines of the Province. Its aim was to secure for these better working conditions, and to give them the standing in the community to which, it thought, they were entitled. That much good was accomplished along these and kindred lines is acknowledged by all able to make comparison between conditions as they existed in 1880 and as they exist now.

In 1898 the name was changed to the **Maritime Mining Record**, in order to express more distinctly the place it was intended to occupy. Since then, till now, its pages have been devoted chiefly to coal mining, which is the staple industry in Nova Scotia. With the growth of the trade it has grown in influence, and is now considered the one reliable authority on all matters connected with the coal trade.

MARITIME MINING RECORD

Vol. 20 Stellarton, N. S., February 27th., 1918 No 16.

DIATOMACEOUS EARTH.

This material known under the names of "tripolite," "tripoli," and "infusorial earth," is a pulverulent substance, white when pure, but often having a brownish discoloration. Deposits are common in lakes and swamps in many parts of Nova Scotia. It is rarely pure and usually is mixed with carbonate of lime and magnesia, clay and other substances, the silica contents varying between 75 and 90 per cent.

The following is condensed from an article in the Annual Report of the Geological Survey, contributed some years ago:—

"Diatomaceous earth is very porous, the specific gravity being 0.25 to 0.30, owing to the numerous interstitial spaces and air cavities between the spicules and shells and within the latter, giving lightness and great absorbent power.

The uses to which diatomaceous earth is put are very varied and are probably capable of greater extension. Formerly, it was widely used in the manufacture of dynamite as an absorbent of the nitro-glycerine, its porosity, which allows of its absorbing liquids to the extent of four to five times its own weight, rendering it eminently adapted to that purpose. But in this connection it has been wholly replaced by cheaper absorbents such as wood pulp, sawdust, etc. At present its chief use is as a polishing material, the grains being sharp and cutting, but fine enough not to scratch metal surfaces; it is also used as a boiler covering, its porosity rendering it a good non-conductor of heat. It can be used in the manufacture of bricks when great lightness is required, but owing to the difficulty of manufacture, these bricks are costly and cannot on that account be used for ordinary purposes. Such bricks can be made of one quarter the weight of ordinary bricks. Diatomaceous earth is also used to some extent in the manufacture of certain soaps, and as filtering material, etc."

The most important deposits discovered up to that time were in Nova Scotia and New Brunswick. In Nova Scotia it is found in the following places:—

Folly Lake, Cumberland County. The deposit at this place is the largest yet known in the province. It occupies the bed and shores of Folly Lake. The lake has an area of over 200 acres, two-thirds of which are probably covered with this deposit. Its surface is 600 feet above sea level. The deposit has been worked to a small extent for the manufacture of polishing material, and for use as a non-conductor of heat.

Fountain Lake, Cumberland County. A valuable deposit of tripolite has been found at this place. It occupies the bed of the lake which is on the road to River Philip, Westchester Mountain. It is of remarkable purity and the lake is said to be easy to drain. It is eight miles distant from Minas Basin at Port-au-Pie, and about the same distance from the Intercolonial Railway. The deposit is worked to a small extent. Other deposits of less extent occur in the numerous lakes of this region.

Upper Barney's River, Pictou County. In 1886 four tons of infusorial earth were shipped from a deposit at Alex. Sutherland's, in a marsh. The extent of the deposit is not known. The marsh is 50 yards wide and of indefinite length. The deposit is two feet thick and immediately under the sod.

Englishtown, Cape Breton County. A deposit of infusorial earth, said to be of excellent quality, has been largely dug by Mr. F. Torrence. The deposit is in a small lake behind the village.

River Denys, Inverness County. A deposit at this place has had a certain amount of work done on it.

Castlereagh, Cumberland County. A large deposit of infusorial earth occurs in Bass River Lake. The lake has been drained for the purpose of working the deposit.

St. Ann's, Victoria County. For several years an important deposit of infusorial earth was worked at a lake near St. Ann's. The deposit is from 3 to 4 feet thick and extends over a large area.

Other places at which Diatomaceous earth has been found are: Lake Ainslie, Inverness County; Lochaber, Antigonish County; MacKay Lake, Garden of Eden Lake, Grant Lake, Ben Lake, Pictou County; MacKintosh Lake, Gully Lake, Colchester County; Grand Lake and Dartmouth Lakes, Halifax County; and Kempt Lake, Kings County. There is no large demand for this mineral at the present time. Its turn, however, may come.

MOLYBDENUM.

Molybdenite is the most common ore of Molybdenum and the ore of molybdenum most widely occurring in Canada. It is found in foliated masses or scales and resembles graphite, but it differs from graphite in having a bluer color and giving a greenish streak on porcelain. It is a very soft metal and can be scratched by the finger-nail. It usually occurs in a hard gangue, largely quartz and feldspar. Its specific gravity is from 4.7 to 4.8.

Molybdenum is a metal of the Chromium group, resembling iron in its white color, malleability, difficult fusibility, and its capacity for forming steel-like alloys with carbon. Its specific gravity is 9.01, symbol Mo., atomic weight, 96.0. It occurs only in combination, chiefly in Molybdenite, wulfenite and scheelite, and in small amounts in ores of iron and copper.

It is used in the form of ferro-molybdenum to harden steel. Certain compounds of it are used in coloring pottery and fabric and in analytical chemistry.

How's Mineralogy, published in 1868, gives the first information of molybdenite in Nova Scotia. It mentions Gabarus, in Cape Breton County, Hammonds Plains and Musquodoboit in Halifax County,

Continued on page 15.

MARITIME MINING RECORD.

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R. DRUMMOND, PUBLISHER.

STELLARTON, N. S. February 27, 1918

THE HERALD AND THE EXPLOSION.

The Halifax Herald has tasted blood, with the traditional consequences,—a thirst for more. Having assailed the enemies of the Port of Halifax and succeeded in bringing back, in its belt, more than one scalp, is on the quest for more. The Herald has evidently come to the conclusion that the late mining disaster in Stellarton furnishes a fitting occasion for further belligerency. Of course the securing of scalps may be only incidents in its wars of investigation. While it must be admitted that the Herald, of late, has done work worthy of emulation, and is striving to do more, the probability is that it might do still better work had it the necessary self control, without which it is impossible, even for an editor, to possess his soul in patience. That virtue it has not, it is to be feared, in large degree. It demands that everything, especially governmental investigations into accidents, be done in a hurry, instantly, regardless whether the present is the most opportune time, for securing evidence, that will lead to helpful or satisfying conclusions.

Last week under the heading "Stellarton Disaster Demands Enquiry" the Herald deplores that three weeks have passed since the accident and no proper investigation is yet being made. Among other things the Herald says:

"A coroner, a medical doctor, began the inquest in the same way as if a man is found dead on the road side. . . . The questions to be investigated are not questions for a coroner's jury. We are face to face with a situation that demands the attention of the best mining and legal knowledge."

In, by implication, questioning the ability of the system of holding coroners inquests which has been in vogue for years,—on mining fatalities, the Herald has the sympathy and support of the Mining Record. Time and again have we asserted that the systme did not yield information as to "why" the accident occurred, and only told, what all interested already knew, to what the fatality was due. The Record's strictures were justified, for only on rare, if on any occasions, was the reason "why" the accident occurred properly inquired into. It is possible there would have been no occasion for such strictures had coroner's inquests been conducted, and juries been constituted as in this Stellarton case. Just such a jury has never been empanelled at any previous inquest into a mining fatality. There are, on the jury, a general manager who has worked in many mines and served in many capacities; there is one who was formerly a superintendent of the Allan Mine and therefore competent to digest all evidence; and there is a practical miner of wide experience who has turned out to be strong on cross examination of witnesses, and who is not in the employ of the Acadia Coal Coy. The men, the company, and the government are all represented by council. And, then, the witnesses are not timid. It was a witness who made the wise suggestion that the inquest be adjourned until after the falls had been cleared away, and exploration thereby made possible. In reply to the assertion of the Herald that the questions to be investigated are not properly the function of a coroner's inquest—suppose that be granted, the inquest, when concluded, and the findings made public may be the basis on which a more scientific inquiry may be built. It may be mentioned that the inquest after the explosion of 1880 must be given share of the credit for the improved mining legislation of the following years.

The Record does not see eye to eye with the Morning Chronicle when that paper remarks that "It is competent for the coroner to enter into every possible detail as to the causes and conditions that may have contributed to the recent disaster. It is competent for him to inquire also into the mining methods of the company and as to the condition of the mine as to ventilation, etc., as well as to the conduct of the mining officials."

If coroners have really these powers, then it must be said that in a vast majority of cases they ignored their opportunities. It is possible the Chronicle's reading of the clauses in the C. M. R. A. is a correct one, but the Record cannot find in the act where the coroner is given any such specific instructions. Subsection 5 of Section 45 is the only one having reference to the powers of a coroner and at best it gives him power only by implication, after study of the context. The sub-section reads:

"When evidence is given at an inquest, at which the inspector, or such other person so appointed, is not present, of any neglect having caused or contributed to the explosion or accident, or of any defect in or about the mine appearing to the coroner or jury to require a remedy, the coroner shall send to the inspector notice in writing of such neglect or default."

This is the pith of the privileges and powers of a coroner as conferred by the C. M. R. A. As a layman I am not prepared to say that the general powers conferred by statute on coroners do not apply in inquests on mining accidents but we hold that words should be in Section 45 that the rules in the several sub-sections are in addition to those conferred on coroners on ordinary occasions. Of course many of us do things for which we have no explicit statutory authority and coroners may do likewise, without objection being taken.

The Herald asks the question, "Are the conditions which caused the Stellarton disaster likely to occur again?" The only possible answer is "The Lord forbid." What these "conditions" were, in the Record's opinion, will never be known. Let us hope, it is the only thing we can safely do,—that whether the conditions were brought about by a misshot, by a heavy fall, by a broken lamp, by negligence of any official or workman, or by or through any preventable or accidental cause, such conditions shall never again prevail for if they should, then——

One of the main questions of the Herald is "Should powder be used at all in these mines, and if so under what conditions." The Record would extend the question and ask, "Should powder be used in any of the mines of Nova Scotia?" Will the Herald dare the consequences, will it risk having hornets' nests about its ears, will it, in short, go with the Record in replying to the questions by an emphatic "No." "No" it must be if a purely dust explosion is to be avoided. "No" it must be if we are to prevent gas explosions, gas and dust in combination, through defective shots, or through the use of explosives. It cannot be gainsaid that a majority of the several great explosions occurring in Nova Scotia had powder as the originating cause; powder was that which fired the gas in the Drummond, gas and dust in Springhill and New Waterford and possibly the causes of the latest disaster. This is a heavy indictment against the use of powder in the mines. Is the Herald prepared to declare its use must be abandoned, and meet, as the Record believes, not so much the opposition of the operators, as that of the workmen and coal consumers, for certainly the disuse of powder means higher cost of production, and, of course, increased price. And its prohibition must be general, except in cases where a mine makes no gas and where dust prevails to no dangerous degree.

Answering the Herald questions, "Are the shot firers duly qualified?" and "Are certificates granted properly?" the Record makes answer that the law in respect to shot firers stands in need of radical revision, as does the part of the act referring to examiners, holding a position a step above a shot firer. Both these classes are granted certificates by the "Workmen's Board", some of whose members are themselves not holders of certificates other than that of competency as miners. The examinations of these two classes should be a little more searching. The Record maintains that, as the position of Examiner is a responsible one, examiners should be accounted officials. The Herald's friends—friends by times—the A. M. W., think otherwise and insist that examiners be members of that society. Can a man be subject to two masters, without holding to one and flouting the other? If examiners must be members of the A.M.W. what will become of discipline? Will a higher official feel free to discipline or dismiss an offender. We doubt it. His dismissal must be approved of by the local. If the local disapproves, then back goes the examiner to his duties, and the first time he meets the official responsible for the dismissal, greets him with what is facetiously called the "free masons' sign."

The final question of the Herald is "Should the Acadia Coal Company be allowed to connect seperate seams of coal?" Why did the Herald single out the Acadia Coal Co.? Why did it not make the question applicable to all coal companies? If the question is made general then the answer from some mining experts will be "No"; from others "Yes." Those who take the affirmative may cite the case of the connection between the Foord and Cage pits in 1880. This connection, while it led to loss of property, led to the saving of very many lives.

There is at present a connection between the McGregor and an underlying seam, but this connection is not to be permanent, but to exist only till the seam below has been connected by slope to the surface. Connection with separate seams should not probably be permitted where the purposes of the connection is to draw to the surface the coal from both seams by using one hoisting engine and slope only. And finally, the Herald demands a governmental investigation presided over by a Supreme Court judge. A Supreme Court judge is good enough in his place, but that is not on a mining disaster inquiry. No rules of evidence and such palavers are wanted.

The stoppage of work at the McGregor mine for a day or so last week gave rise to a lot of street gossip. The men did not refuse to go to work, or even hint at refusing. On hearing that there was a fall at the bore hole, from which the water is drawn from the Albion, Mr. Prudhomme, the general manager, advised Chief Mining Engineer Notebaert, to throw the mine idle till repairs were effected. It was an extreme precautionary measure.

After the several explosions, previous to the last, there was always a plentiful crop of rumors as to the probable cause. This thing or that other was wrong. The management fell short in respect to ventilation or—something. Few such rumors have been current in the case of the disaster of the Allan Mine. Any rumors or reports refer to aliens working in the mine previous to the explosion and disappearing before it occurred. Some reports give six as the number who disappeared, others are content to say two. As a party responsible for one of the reports is known, an attempt will be made to have him give evidence when the inquest resumes.

What the government failed to do, what the press failed to accomplish, and what the voice of the people also was unable to bring to pass, the present great demand for coal, coupled with the crippling of two of the mines of the Acadia Coal Co., has been successful in attaining. The old McBean colliery is to be reopened as speedily as possible. The work of unwatering the mine is being undertaken by C. H. Mitchell, who has done considerable engineering work in the county. He is to unwater the mine, place the slope in repair, and put the mine in such shape as to permit of operation by the company as soon as the work outlined is finished. He will attend to the pumping machinery, and do all the work in his own way without let or hindrance, or any interference on the part of the company. Mr. Mitchell is put on his mettle, and his friends declare they will be disappointed if he does not demonstrate that the Col. Bob Lows are not the only engineers in Canada who can hustle things.

A contract or rather an agreement of a somewhat novel character has been entered into between C. H. Mitchell and the Acadia Coal Coy for the sinking of a new slope at Thorburn. The slope will be approximately a thousand feet in length. The company will not interfere with Mr. Mitchell while employed sinking. The coal extracted he will handle and dispose of to the best advantage. By this arrangement the company is free from any supervision of the sinking beyond seeing it is efficiently done, and the quicker the coal in the slope is won the greater is Mr. Mitchell's winnings.

MINE MANAGEMENT.

The writer lays no claim to know as much about

the management of any particular mine as the engineer in charge, while claiming that he knows probably more as to the management of the collieries in general than any one particular official. For thirty years, and more, he has followed the career of a majority of those now occupying positions from District Superintendents to Mine Managers, including,—to go no further than the second letter of the alphabet,—such well known mining men as T. J. Brown, R. J. Bell, G. B. Burchell, Malcolm Blue, and Malcolm Beaton, and these are exclusive of the many General Managers. He is, therefore, in a position to speak, possibly with some authority, as to the coal mine management in the several counties, Pictou County, of course, included, where he has had residence for the past thirty-five years, coal mine management, more particularly as it relates to the conservation of lives and property.

All comparisons which might come under the heading "odious" shall be avoided.

A question lately asked, in the press, runs thus: "Is the management of all our collieries what it should be?" This might be met by a further question, "Is the management of any colliery in the province; is the management of any industrial plant, what it should be?" And the only possible answer to that is: "Some managements may be better than others, but that in no single case is it what it should be, and never will be, until the perfect man arrives, and his coming has not, as yet, been heralded."

The following is one of many press statements:—

"There is no gainsaying the fact that Belgian management of the Acadia property has not been a shining success," and another statement runs:—

"We have no hesitation in saying that the Drummond Colliery is the best managed colliery in the province to-day."

A reply to the first statement might readily take this form: "Point to any of the many mine managements in Stellarton, during the past seventy odd years, of which it may be said that it was a 'shining' or any other kind of a success. Under whose management did the fires and explosions in the 'Bye' pits, the Dalhousie, the Foster, the Cage, the Foord, and the smaller mines occur? Under whose management was given the first indication of fire in the Allan mine? Under whose management did the fires in the Albion mine first start? In each and every case they started under British, Nova Scotian or American management. Can it then be said of any former management that it was, in comparison with the present, a 'shining success'"?

In reference to the second statement it may be sufficient to say, there are collieries and collieries. It would be manifestly unfair to compare the Milford Colliery with the Drummond, and it is just as unfair to compare the management of the Drummond with that of the Allan mine. Why? Consult any mining man of repute, and he will declare that the Allan mine is the toughest mining proposition in all of Nova Scotia.

The phase of management under review is that which concerns conservation of lives and property. What can be said of the present Acadia management? Is "safety first" the first consideration? The Record is content to give the opinion of one, accounted among the foremost mine men in the province, one who has the oversight of a mine which paid a dividend dwarfing that of the Dominion or any company now operating. This expert declared, in the presence of several mining men of repute, that the one fault he had with the management of the Acadia was that it lacked boldness, in other words, that it was characterized by over caution. The Record rests with that testimony. If outputs be the gauge of "shining success," then the records of outputs give answer, even though the difficulties of late have largely increased.

THE HERALD AND THE TALKED OF MERGER.

The Halifax Herald of the 14th inst has a somewhat hysterical article on the merger, said to be contemplated between the Dominion Steel and Coal, and the Scotia interests. Replying to an opponent, a speaker years ago exclaimed that he,—the previous speaker—had been carried away by the exuberance of his own verbosity. By substituting writer for speaker, the phrase may be made applicable to the Herald writer. Below we give extracts from the Herald's article:—

"When the government of Nova Scotia, owners of the invaluable coal areas of the province, handed them over to the Whitney Syndicate for the "mess of pottage" of an extra 2½ cents per ton royalty, and gave the speculators and stock gamblers a free hand to exploit the domestic consumers and manufacturing industries of Nova Scotia, The Halifax Herald entered its vigorous protest and predicted and emphasized the inevitable consequences.

"Long before the war the price of coal had been doubled and it is now trebled. The chief reasons for the increased pre-war price was the necessity for paying dividends on thirteen millions of "watered" stock. There was, however, always the hope of some degree of competition between the Whitney combination and the Pictou and Cumberland mines and the North Cape Breton areas now owned by the Nova Scotia Steel & Coal Company, but that hope has been a vain one, and the coal situation in Nova Scotia and for all Canada is more menacing than ever."

This is lamentable. It is a complete ignoring of the history of the province during the past quarter of a century. But for the Whitney Syndicate the province would have no coal trade worthy of the name to-day. A "mess of pottage" indeed! Why, this mess of pottage has added millions of dollars to the revenue of the province. Yes, possibly more millions than the Herald, or the people as a whole, dream of. It is possible that but for the advent of the Dominion Coal Coy. the coal output of to-day would not be greater than, if it would equal, that of 1893.

Take note of the following words in the extract:—"There was, however, always the hope of some degree of competition between the Whitney combination and the Cumberland and Pictou mines, and the North Cape Breton areas." The Herald's memory is failing. There was never any such hope held out by the opponents of the Whitney legislation, in the legislature, nor by its opponents of the press, the Herald included. Neither saw one gleam of hope in the future, all was ruin and black despair. Why,

the syndicate scheme was likened to an octopus which would stretch forth its tentacles and crush the life out of all the companies in Nova Scotia, and having accomplished their death it would close all its own mines in the interests of United States operators. These were awful forebodings and scared almost to death some timid folk, and the Herald evidently is determined to try and subject timid people of the present day to a similar experience. The following quotation furnishes proof that our contemporary is careless as to logic, as well as facts:—

"And if this gigantic merger materializes—and it is in a fair way to-day of becoming an accomplished fact—all the iron and coal resources of this little province will pass to foreign control; and, as we have pointed out, become the prey of stock exchange gambling. The loss of control of our coal and ore areas and the great industries at New Glasgow and Sydney which depend upon them, because of our supineness, lack of vision and patriotism, may lead to provincial disaster and become an empire menace."

What iron resources of this little province are under control of either Steel or Scotia? Possibly the Herald meant to say "sources of ore supply" for no iron is being mined in the province—sorry to say. But what of the Herald's logic or consistency? It protests against the Whitney legislation fiercely, and now it is bewailing the possibility of the great industries at New Glasgow and Sydney passing to the control of outsiders. Does the Herald fail to see that had the local government scorned the mess of pottage there would be no great industries in Sydney to-day. The establishment of the steel industry in Sydney was made possible by the acquisition of the coal areas by Mr. Whitney and associates. Had these not come a Dominion Coal Co. never would have become a Dominion Steel Coy., and without the latter Sydney would be no flourishing city but a mere drowsy hamlet.

LABOR REPRESENTATIVES.

The Sydney Post has a well written and well reasoned article on the demand of labor for representation in parliament. The article, possibly, was inspired by the report that the C. B. workmen would put a labor candidate in the field. The Record cannot, however, fully endorse the Post's reference to the Mines Department. The Province never had a minister in that Department who had any practical knowledge of mining. There are frequently questions of law which have to be decided by the Commission of Mines. Perhaps it is necessary that there should be a lawyer at the head, and yet at the same time there should be one with executive power who is familiar with conditions affecting mining. The Record is under no obligation to speak a word in favor of the present Commission, indeed, if the writer was vindictive he might desire to criticise the Mines Department at odd times, and, yet, we are constrained to say that the present Commissioner fulfils the duties expected of him, in probably a manner more to be commended than any of his predecessors.

"The truth is of course that workingmen are entitled to an equal voice with all other branches of citizenship in the legislative and administrative councils of the nation. Under our system of representation, we try to get the most capable men who are willing to act for us, to discharge the all-important duties of law-makers and administrators. But, it will at once be said, most of our representatives have in the past been chosen from amongst others than wage-earners; and in fact the cases have been rare and exceptional when labor men have been elected to seats in the parliament of Canada or the legislatures of the provinces. That is undoubtedly true. But can it be truly said that the reason has been a desire on the part of others than workingmen to keep labor representatives out of parliament, and that it has not rather been that, all things considered, the most capable candidates—those who have given promise of becoming the most efficient representatives for the whole community—have usually been preferred by the majority of the voters? Is not another reason for the failure of labor candidates to win elections to be found in the extreme, crude and impossible policies to which they have generally given sanction, and on which they have generally appealed to the people?

"These considerations are not being urged as reasons why workingmen should not have political representation, but on the contrary to indicate what seems to be the only course for organized labor to follow if it is to become the political force it should be in the councils of the nation. It should select candidates capable of serving the whole community, and should put forward policies that will command themselves to the common sense and sound judgment of the majority.

"There never was a time when labor representatives, and especially good representatives of the mining population, have been so urgently needed in the legislature of this province. The department of mines is presided over by a minister to whom it would be the height of flattery to ascribe even an amateur knowledge of mining conditions in Nova Scotia. The mining rgeulations are sadly in need of a complete and intelligent revision; the inspectoral system needs remodelling, lock, stock and barrel; and greater safe-guards are imperatively requisite to protect the lives and improve the working conditions of those who are employed in the perilous work of coal-mining in this province. And intelligent reforms can only be accomplished with regard to these matters when the miners get the right sort of representation at Halifax. But if the miners are to get such representation, it will have to be with the co-operation of the whole community, and the only sure way to secure such co-operation is to put forward candidates in whom the general body of the electorate will have confidence, and who will not be weighted down with a political program of half-digested Socialist theories, and radical, Bolshevist proposals, which will drive most sane persons, including hundred of rational workingmen, into opposition to them.

"Under wise leadership, and with the right sort of candidates to represent them, the workingmen of Nova Scotia will quickly come into their own in the public life of this province. But unless and until those conditions have been met, organized labor, however much it may achieve in its laudable efforts to get fair recognition from capital, will make no political progress in a province containing so sane and cautious a population as Nova Scotia."

AROUND THE COLLIERIES.

The leading work of nearly all the Dominion collieries is being pushed ahead rapidly with the view of large outputs for the coming summer.

The electric plant at Dominion No. 2 was supplemented by a large turbine which was placed in position and started up last Monday.

With the exception of two levels, Dominion No. 12 colliery is now repaired and giving fairly good outputs. It will only be a matter of a few days when these levels will be producing with the other parts of the mine.

The tunnel projected from Dominion No. 4 struck the Barrasois seam at the distance of 900 feet. The coal looks good and is 6 feet high where pierced. The New Waterford coal field is prolific in seams of good quality and of the right height for winning a very large percentage of the coal.

The enforcement of law in Britain should be a wonder to a majority in Nova Scotia. The Bow Street, London, magistrate contended that a man who had fed gulls and water fowls in St. James Park, with a few crusts and crumbs of bread and scraps of fish, left over from his meals, had wasted bread and he was fined ten dollars. Pretty hard lines surely.

The north side of Dom. No. 2, Dominion, is now ready, and the south side almost ready for the endless rope, which system of haulage is to supplant the air locomotives now doing the main haulage work in that mine. Dominion No. 9 is also about ready for the change to the same system as No. 2. This change came about as the result of the deeps having to supply most of the future output, and the compressed air locomotives being unable to work against the grade.

There is no certainty as to when the Albion mine will be reopened, and a like uncertainty prevails as to the date of resumption of work in the Allan. As testfying to the opinion that the disaster was of the nature of those termed purely accidental it may be stated that a number of miners, who formerly worked in the shaft, and who reside outside the bounds of Stellarton, have asked the Acadia management to let them know as soon as the mine is in condition for operations to be resumed.

A Cape Breton correspondent, who keeps tag on happenings in Inverness town sends the following item: "The Inverness colliery is getting back to normal output. To place the blame on the workmen of the mine for the reduced output last fall, seemed unfair, and was strongly resented by the men working in the colliery. There are two sides to every question. Inverness colliery has its own troubles, but the miners should not be blamed for the conditions prevailing, over which they have no control."

In January there was a terrible mine explosion at the Mimie pit, North Staffordshire, England, resulting in the loss of, it is believed, 160 lives. There were 247 men in the pit at the time, and only 87 were recovered alive. The laws and regulations in force in Britain, in reference to explosives are very strict and breaches are severely punished, and yet great accidents occur at intervals. The human element, in mining, cannot well be reckoned with.

Our correspondent is possibly correct in saying that the men should not be held responsible for all of the decreased output. In referring to decreased output it was not intended to convey that idea in anything written by the editor of the Record. He presumes that the men of Inverness are no worse and no better than the men in the other mining localities. The leaders of the A. M. W. virtually admit that some men are "slack" at the South Cape Breton mines, else they would not have started a regular work, especially on Mondays after pay days propaganda. We are pleased to hear that the Inverness men are working regularly without the necessity of being urged to do so by their union leaders.

While nearly every class of underground workman contributed to Canada's army in the early stages of the war, the class known as the plain loader was almost entirely eliminated. To him new avenues of more profitable labor opened up and he at once took advantage of them. This had the effect of forcing a number of machine miners from the loading to the wide work of the mine, as many of them could not mine and load their own coal under the conditions brought about by the want of loaders. As a result the development work stood in danger of falling behind. For a short time this work almost entirely stopped. It was evident to every one that the day of the plain loader was past and some other means of loading coal had to be found and put into practice. The Dominion Coal Company immediately despatched two of its leading officials to the States to find out how they had overcome this difficulty which without war was then menacing their coal trade. The mechanical loader was the outcome. Several of these were purchased and placed in the Dominion collieries to open up the mine. They were found to be very useful and have been a great help to the means of production. The development work has been attacked with new vigor and is well ahead which ensures good outputs for the future of the collieries. Other collieries will be supplied with these loaders which do much of the hard work so distasteful and so difficult to the old miner. The war brought to all coal mines some very hard problems, but mining men have shown themselves equal to the occasion and have done far more than they get credit for. To lose a large number of men of all classes would cripple any industry but to lose a whole class and replace them by machinery is what is going on in the coal mines of this continent at the present time.

A SMOKELESS COUNTRY.

The following interesting article, written by the Rev. C. Sporr, is taken from the Christian World:

"What an unimaginative, unpoetic, unresponsive people we British are! It takes an earthquake to move us. The traditional figure of John Bull—corpulent, contented, slow-moving—ought not to represent us, but unfortunately it does. We hear of a good thing and pass it by for years until some calamity or crisis recalls us to the fact of its existence, when we welcome it with joy as if it were a newcomer. Our reforms—even the most pressing of them—are won but slowly. It took us ten years to see that Mr. Willett was neither a fool nor a crank in urging upon us the advisability of saving daylight in the summer-time, and when at last we saw what a wise man he was, and decided to follow his lead, we had to do it via Germany—our enemy. And that is how we act all along the line—slowly, over-cautiously, heavily. We are following the same slow way in church reunion. We meet in committee, pass resolutions, arrive at decisions, and then either hang up the whole thing indefinitely or go at snail's pace to our destination. If in our blood there were a little more mercury, a touch of French fire and initiative, how swiftly should we move!

"A month ago we had a proposal set before the country by a sub-committee appointed to consider the question of the conservation of our coal supply. It was one of the most radical, most beautiful, and most practical schemes ever set before an industrial people. The committee showed that it was easily workable. To adopt it would be to pass from purgatory to paradise, from ugliness to beauty, at a bound. And already the country has forgotten it. We do not know what the officials are doing with it, but the people have made no response whatever to it. There has been no general correspondence in the press about it, no enthusiastic leading articles, no allusions to it in Parliament, or from platform or pulpit. It has been stared at and passed by on the other side. And I am stupefied about the treatment it has received; for this scheme is an old idea of mine, introduced into the columns of The Christian World twenty years ago. It is too good to drop or to hang up. The nation ought to wax enthusiastic over it, and to determine that the scheme shall be carried out.

"What is it? In a word, it is a proposal to give us a smokeless country by keeping all the coal at the pit's mouth, there converting it into electric power, and thence conveying it all over the land from convenient centres, to be used as power, lighting and heating. The very idea smacks of paradise. What would the reality be? Visitors to Florence will remember how beautiful that city appears as viewed from the heights of Fiesole. Between the hills of Fiesole and the mountains beyond Florence, the city itself lies in a basin. And what a city! The atmosphere surrounding it is perfectly clear, and every building stands out in lovely relief against a background of mountains and a canopy of blue heavens. And the reason? Partly, if not chiefly, the fact that Florence is a smokeless city. Charcoal is burned in the private houses, and charcoal yields no smoke. In contrast to this, let a visitor stand, say, upon Blackheath or upon the heights of Hampstead, and look down upon South-East or North London upon green grass—really green grass—and rising therefrom without possessing the appearance of a zebra, or a chimney-sweep out for a day's excursion! Think of trees whose bark would be left intact, and of vegetation that had a chance to display its beauty—a thing it cannot do to-day in places where smoke abounds. Poor, anæmic leaves and flowers! They have enough to do to gasp—they cannot breathe.

But the whole thing, at the bottom, is profoundly religious. A smokeless country—and in particular smokeless cities, with their corollary of foglessness—would do very much towards clearing our vision in more than one direction. We may argue against it as much as we will, but the simple fact remains that a depressing physical environment does act unfavourably upon the human spirit. Who can feel cheerful in a November fog? And if cheerfulness be absent, there is absent the soil in which all bright flowers of the spirit can flourish. When I landed again in England after my sojourn in Australia, the thing that impressed me more than anything else was the absence of radiant cheerfulness from the faces of the people. The contrast between the laughter-loving Australians, with their buoyant outlook upon life, and the sombreness of the average Londoner is simply startling. And it is due more than anything else to our atmosphere, which in its turn is due more than anything else to smoke. This statement, which to some may appear to be extreme, can easily be verified in experience. Stand at a street corner on a foggy day and watch the crowd pass to and fro. You will hear no laughter and see no smiles. Pedestrians pursue their path with a doggedness that is admirable but not attractive. They are moving through something to somewhere, and they are not happy about it. But now stand in a public place when the sun bursts forth—or, rather, when our earth-made veils give the sun its opportunity—and observe the difference. Everybody is cheerful; the nursemaids are all out, and the air is filled with children's happy voices. I verily believe that much of our national stubbornness and stodginess is due to our smoke-impregnated atmosphere. We believe these qualities to be signs of strength, and we regard the Florentines and other inhabitants of smokeless cities as frivolous. We even think the French are frivolous, simply because we are so profoundly ignorant of them, and so contented in our own love of smoke and fog. And, if we only knew it, we could well do with a large measure of French vivacity and brightness. In the deeper religious region, it is a little significant that the smokeless cities have proved to be favourable centres for the practical discussion of church union. Australia has gone much farther in that direction than has the motherland; but then, you can see your neighbour better down there than you can here. Our trouble is that we do not see our neighbours. The smoke has got into our eyes, and the fog into our souls. I am quite certain that if there were less of the dim religious light in our places of worship, and more of the brightness of common day, the question of reunion would not be nearly so difficult to handle. For the truth is that our murky climate has drawn us—or some at least—into warm and stuffy and darkened churches, until at last the worshippers have come to believe that there is a special kind of sanctity at-

taching to these chambers of horrors, and they confound religion with obscruity. Sir Henry Lunn knew his business when he took his reunion conferences out of the smoke of London into the perfectly clear air of Switzerland. If he could only have brought the Swiss climate back with him, we might by this time have had something like a United Evangelical church.

"To banish smoke would be a gain all round. We should be happier, healthier, sunnier people; English towns and cities would then be places of beauty, and our noble buildings, at present encrusted with vile grime, would be as fresh and lovely as the facades of the Duomos at Florence or Siena. And yet the serious proposal to move at once towards so desirable a goal has evoked not the least enthusiasm in the country. The papers, as usual, have been laid upon the table, and the W.P.B. is near at hand. How can we awaken the imagination of the people to see the beneficence of the scheme that is officially proposed to us? If the people determine that it shall be done, it will be done. But how are we to move them?"

BARITE.

This mineral is the native sulphate of barium and is found at Cape Rouge, Inverness County; Lake Ainslie; Black Brook, near Springhill; Bass River, near Five Islands post office, Colchester County; River John, Pictou County, and at Middle Stewiacke. The vein at River John is four feet wide. The present workings are at Scottsville and at East Lake-Ainslie, Inverness County. The properties leased here cover an area of, at least 700 acres, and the vein is from six to thirteen feet, dipping south-east 55 degrees. At Scottsville, the mine is on the T. C. Campbell property, and there is a mine on the MacMillan property at East Lake-Ainslie. The refining plant is at Scottsville, and has a capacity of one ton of finished product in an hour. Both mines are in operation at the present time.

At Five Islands, 208 tons were mined in 1874, and shipped to the United States. In 1875 there were 175 tons exported. In 1876 much of the small quantity of barite mined at Five Islands was locally used in the making of paints. It was sold in 1876 in small quantities to the Dolphin Manufacturing Company, by the people of that district, and although the whole consumption of barite by that Company was only 50 tons a year, the production was so small the Company had to import some to meet their requirements.

In 1877, 23 tons only were mined in the Province and used locally. From 1879 there was no production until the year 1886 when Henderson and Potts mined 230 tons at Brookfield. In 1899, 160 tons were mined at Cape Rouge; and 200 tons that had been mined, were shipped from Lake Ainslie in 1898. Henderson and Potts mined 800 tons of high grade ore, and in 1901 the same company mined 600 tons at Cape Rouge. In 1903 Cape Rouge produced 200 tons and Lake Ainslie produced 500 tons. In 1909 there were 2,000 tons mined at Lake Ainslie and in 1910, 162 tons and in 1913, 700 tons. In 1915 there were 1,800 tons refined and shipped and the total output from Lake Ainslie since 1902 is in the vicinity of 20,000 tons. These mines have been operated for a number of years by The Barytes Limited, of Halifax. The texture of the powder of barytes or artificial precipitate, its color and inertness combine to make it serviceable in the preparation of white mixed paints, lithopone and blanc fixe and as a base for colored pigments, imitation marble, white figures, jasper ware and in enamels for porcelain, pottery and enamel wares.

Barytes is the most permanent pigment filler, being unaffected by sulphurated hydrogen, acids, and weak alkalies. One gallon of the dried powder weighs from 15 to 18 pounds according to fineness. This mineral, sometimes called "heavy spar," is theoretically composed of 65.7 per cent of barium oxide (BaO) and 34.3 per cent. of sulphur trioxide (SO^3) and has the chemical formula $BaSo^4$. Its specific gravity ranges from 2.5 to 3.5. It can be distinguished from calcite by its greater weight and by the acid test. In the trade, two types of the mineral are recognized, the crystalline and the soft. The hard crystalline variety has a glassy, semitransparent appearance and can not be broken by the hands. The soft barytes can be crumbled by the fingers, and has a dull, milky appearance. The soft variety is preferred by the grinders, and is said to roast better than the hard crystalline variety. The hard type can be used better in lithopone and chemical industries than by the grinders.

The average price of crude barytes in the United States, in 1915, was $3.51 the short ton, and the price has had a slight advance since that date. The total consumption of barytes in that year in the United States was 111,051 tons of 2,000 pounds.

As all barium compounds are poisonous, care must be exercised in their manufacture.

MANGANESE.

The ores of manganese found in Nova Scotia are known for their purity. They occur at a number of places in the Province. The best known locality is from Tenycape to Walton, in Hants County. This rich and pure ore has been wrought at intervals for a number of years, but sufficient attention has not been given to it.

Many tons have been shipped from this district yielding as high as from 88 to 95 per cent. of available peroxide of manganese. One pocket at this place gave 1,000 tons of ore, the price realized being $130 a ton.

The pyrolusite occurs in strings and pockets in limestone at its contact with the underlying Devonian sandstone. Similar ones are found at Onslow and at Manganese Mines, near Truro; and at Enon, near Loch Lomond, Cape Breton. These latter mentioned deposits have not been mined to any extent. More recent discoveries have been made at New Ross, Lunenburg County, and in Cape Breton County. These deposits are of good quality. The ore occurs in beds and in irregular layers and nodules in soft sandy shale and associated with a dark manganiferous limestone. This ore runs as high as 88.9 per cent. of binoxide and very low in iron.

The most common of manganese ores is "wad" or bog-manganese. It is not so valuable as the other ores of this metal. It is found at Jeddore, Ship Harbor, St. Margaret's Bay, Shelburne, La Have, Springhill and Parrsboro.

The Nova Scotia Manganese Co. opened a mine at New Ross, Lunenburg County in 1910, and raised 25 tons; in 1911 the output increased to 160, and in 1912, 223 tons were produced; but operations ceased and nothing more was done until the Metals Development Co. took over the property and have been working it since early in 1916.

The ore here is a mixture of psilomelane and manganite and is suitable for ferro-manganese. An analysis of what is termed blue ore at this mine gave manganese dioxide 70.5 per cent. The total shipment of manganese, since first mined in the Province, is about 9,000 tons.

At New Ross the vein is vertical and has been traced by float about 1000 feet. Its course lies north 70 degrees east. The vein at the surface is composed chiefly of botryoidal hematite, with some ochre and a little pyrolusite. At the depth of 26 feet the pyrolusite begins to increase; and at 30 feet the vein is 14 inches thick and composed of five inches of good manganese ore and nine inches of mixed iron 100 feet, dips south and at an angle of 65 or 70 degrees.

The following analyses show the general character oxide and crushed pyrolusite and granite. From a depth of 30 feet the ganite on both sides of the vein is of a hardness similar to clay. The average width of the manganese ore is about 10 inches. The vein from a depth of 30 feet to the bottom of the shaft, these ores:—

	At Douglas 15 miles south of Tenycape	Cheverie.
Moisture	1.66	2.05
Water of Composition	3.63	
Iron peroxide	.60	2.25
Oxygen	7.03	
Baryta	.72	
Insoluble	1.72	1.12
Phosphoric		2.80
Manganese oxides	84.62	1.02
Peroxide of Manganese		90.15
Lime		trace

The manganite at Walton and Cheverie bears the following analysis:

	Tenycape.	Cheverie.
Manganese Oxides	85.54	86.81
Iron Peroxide	1.18	2.05
Baryta	.89	
Phosphoric	.34	
Insoluble matter	1.27	1.14
Water	8.54	10.00
Available oxygen	51.54	17.73

There were 544 tons of manganese mined in the Province in the fiscal year ended September 30th, 1916.

GYPSUM (Sulphate of lime.)

Nova Scotia has abundance in gypsum, generally of a pure quality. Unfortunately it is not subject to royalty. A glance at the geological map readily shows that the Carboniferous System in this Province lies in the Counties of Cumberland, Colchester, Hants, Pictou, Antigonish, Victoria, Cape Breton and Richmond, and as it is the home of the gypsiferous deposits, these counties contain immense quantities of gypsum.

In the territory lying between Minudie and Pugwash, there are large deposits, especially at Macean River and at Pugwash. In Hants County, it is quarried near Windsor in the outcrop of an immense vein. It is quarried at Newport, Cheverie, Walton and Noel in the same county. At Pictou it is fonud in workable quantities on the East River. In Antigonish it is exposed, in one place on the shore, for a height of 200 feet. The bed of gypsum from which Plaster Cove, now Port Hastings, took its name, is of enormous thickness two-thirds of which is anhydrite or hard gypsum. Near the mouth of Mabou River there is another large deposit. A peculiarity of the gypsum in this vicinity is that it crops alongside the coal, which would indicate that the coal here is in the Lower Carboniferous series. Gypsum appears again at Cheticamp, and is quarried and manufactured into plaster at Eastern Harbor. It is found in many places along the Margaree River and at Lake Ainslie. It abounds at Big Harbor on the Bras d'Or Lake and at St. Ann's, where the Victoria Gypsum Mining and Manufacturing Co. have been quarrying gypsum for years. Here is the only gypsum mine in the Province. Another deposit is being worked at Ottawa Brook by the Newark Lime and Cement Co., and at Lennox Passage in Richmond County there is a large bed of excellent gypsum. In Cape Breton County there are large deposits, but they have not been worked to any extent.

The surfaces of all these beds of gypsum are marked by inverted cone-shaped cavities known as "plaster pits" or "kettle holes." In some places they are not exposed, except the tops; and gypsum beds may be traced by these where there is no outcropping.

These cavities are formed, some geologists say, by the solvent action of the surface water penetrating the fissuers of the gypsum. Other authorities say that kettle holes are formed by escaping gases. These cavities are more contracted in the anhydrite or "hard plaster."

Gypsum is divided, in a general way into two classes, soft and anhydrous. The latter kind is gypsum destitute of the combined moisture which gives it its usefulness for modeling and plastering, and is known to the quarrymen as "hard rock." It can not be bored with the same augers as the "soft rock," which is almost chemically pure and which is broken with picks with little trouble. There is no market for anhydrous gypsum. It should make a good base for paved streets, and might be a good substitute for marble for indoor decoration.

Gypsum, when calcined becomes Plaster of Paris. When heated to 250 Fahrenheit it loses its water of combination and becomes anhydrous. The transparent varieties are known as selenite. The increase in the production of gypsum is about proportional to the increase in the building trades, the manufacture of cement and other purposes for which white gypsum is used.

(Continued from page 6.)

and Chester, in Lunenburg County. It is found in drift in Halifax County, and in situ in the other counties. Since the publishing of How's work the mineral has been found at Chegoggoin Point, about four miles north from Yarmouth, Jordan Falls, Shelburne County; Gaspereaux River Road, Cape Breton. The deposit here is about four miles south-east of Big Pond, near Grangarry Post Office. This mine is marked as a blacklead mine in Churche's map of Nova Scotia.

It is found also at North River, St. Anne's, Victoria County. In none of these places have attempts been made to mine the mineral for commercial purposes and it is quite probable that at present prices remunerative work could be done at some of these deposits.

It has been recently discovered that an alloy of equal parts of Molybdenum and tungsten makes a substitute for platinum which is selling now (1916) at $88 an ounce, or four times the price of gold. These two metals have long been known and used, but only lately has it become known that they can be made to resist oxidation.

Molybdenum has many of the characteristics of tungsten. The latter melts at 3000 degrees Centigrade. The former melts at 2500 degrees centigrade. They are insoluble in any of the common acids, and their tensile strength exceeds that of steel. Their specific gravity is 70 per cent. greater than lead, and they can be drawn to finer threads than any other metal.

The serious objections to them were that they oxidized easily at a red heat, and they did not readily solder with gold, and its alloys, and that the larger wires were quite brittle. An alloy of tungsten and molybdenum, half and half, has been produced in wrought form that gives good results. Except in two respects, pure ductile tungsten and molybdenum, meet all the conditions of a practical substitute for platinum and its alloys.

The two objections in the alloy, its ease of oxidation and the difficulty with which it can be soldered, have been overcome by coating with a precious metal or alloy, the resulting material being in many ways much superior to platinum or its alloys.

Molybdenum and tungsten are not so expensive as platinum. The latter was quoted in December, 1915, at $3,000 a ton for 60 per cent. ore. It is now even higher. Molybdenum ore was $750 a ton before the war, it was quoted in February, 1916, at $3,600 a ton. These metals, are necessary to the making of high speed tool steel, as they prevent it from losing its temper, even when red hot. They are in great demand by makers of artillery and ammunition.

TUNGSTEN.

The chief tungsten ores are wolframite, schulite, and hubnerite. Wolframite is the heaviest of these, its specific gravity being 7. Next to wolframite, schulite is the chief ore of tungsten. It is white, cream, yellow or brown in color. It can be readily scratched with a knife. Its specific gravity is 6. It resembles calcite, but is more than twice as heavy as this mineral. Hubnerite is closely related to wolframite in the shape of its crystals, specific gravity and hardness. The last named mineral is found at Emerald, near North-East Margaree, Inverness County. Schulite is found at Moose River, Halifax County. The largest vein is 22 inches, and is exposed in the bed of Stillwater Brook. It has been found in the workings of Moose River mine, two miles to the east, and some of the ore has been found on a dump at the Tonguoy gold mine, one and three quarters of a mile eastward from Stillwater Brook. Tungsten ores are reported at New Ross, Lunenburg County, but up to the present it is not found in such quantity as warrants development.

The first shipment of tungsten-bearing mineral from Nova Scotia was 14 tons of schulite-concentrate, containing 72 per cent. tungstic acid, taken from the schulite mines, Moose River, in 1912. The capacity of the mill is 30 tons in 12 hours.

The mill was erected in 1911 and produced a high grade concentrate. The mine ceased production in 1913, after a small production of 10 tons. There were 40 tons of schulite ore mined here in 1916.

Prospecting for tungsten-bearing ores has been engaged in during these last few years, at a number of places in the Province, but nothing of economic value has been reported. This metal was formerly considered of interest as a chemical element only. It is now an article of commerce and industry and a very valuable one. It is one of the very hard and heavy metals, having a specific gravity of 16, nearly as heavy as gold. Its melting point is 8,080 degrees Centrigrade. It is one of the most infusible metals known, and is much used in the making of incandescent lamps, the filaments being much superior to carbon filaments in that it produces a white light, while carbon produces a smoky deposit that injures the light. Tungsten produces no sutty effects in its white incandescent condition. Apart from this, the manufacturers of tungsten lamps claim for them a better light with less power.

Considerable quanties of tungsten are used in the making of tungstates, which are used as a mordant in dyeing to give weight to silks, and in rendering fabrics fireproof; but the chief demand for tungsten is in the making of steel, the adding of a small portion of tungsten increases the elasticity and tensile strength of the steel.

Speaking at Oldham, Mr. Glynes declared that nothing but disunity could wreck the promising future of the reconstituted Labor party and delay their conquest of political power.

Synopsis of Coal Mines Regulations.

COAL mining rights of the Dominion, in Manitoba, Saskatchewan and Alberta, the Yukon Territory, the North-West Territories and in a portion of the province of British Columbia, may be leased for a term of twenty-one years renewal for a further term of 21 years at an annual rental of $1 an acre. Not more than 2560 acres will be leased to one applicant.

Application for a lease must be made by the applicant in person to the Agent or Sub-Agent of the district in which the rights applied for are situated.

In surveyed territory the land must be described by sections, or legal sub-divisions of sections, and in unsurveyed territory, the tract applied for shall be staked out by the applicant himself.

Each application must be accompanied by a fee of $5 which will be refunded if the rights applied for are not available, but not otherwise. A royalty shall be paid on the merchantable output of the mine at the rate of five cents per ton.

The person operating the mine shall furnish the Agent with sworn returns accounting for the full quantity of merchantable coal mined and pay the royalty thereon. If the coal mining rights are not being operated, such returns should be furnished at least once a year

The lease will include the coal mining rights only, rescinded by Chap. 27 of 4-5 George V. assented to 12th June, 1914

For full information application should be made to the Secretary of the Department of the Interior, Ottawa, or to any Agent or Sub-Agent of Dominion Lands.

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

N. B—Unauthorized publication of this advertisement will not be paid for.—83575.

CANADA.
DEPARTMENT OF MINES.

Hon. Martin Burrell, Minister.

Mines Branch.

Recent Publications:

Building and ornamental stones of Canada, (Quebec), Vol. III, Report on, by W. A. Parks, Ph. D.

The Bituminous Sands of Northern Alberta, Report on, by S. C. Ells, M. E.

Peat, lignite, and coal; their value as fuels for the production of gas and power in the by-product recovery producer, Report on, by B. F. Haanel, B. Sc.

The petroleum and natural gas resources of Canada: Vols. I & II. by F. G. Clapp, M. A. and others.

Electro-plating with cobalt, Report on, by H. T. Kalmus, Ph. D.

The Mines Branch maintains the following laboratories in which investigations are made with a view to assisting in the developing of the general mining industries of Canada:—Fuel Testing Laboratory, Ore-Dressing Laboratory, Chemical Laboratory, Ceramic Laboratory, Structural Materials Laboratory.

Application for reports and particulars relative to having investigations made in the several laboratories should be addressed to The Director, Mines Branch, Department of Mines, Ottawa.

R. G. McConnell, Deputy Minister.

Geological Survey.

Recent Publications:

Summary Report of the Geological Survey for the Calendar Year 1916.

MEMOIR 20. Gold fields of Nova Scotia, by Wyat Malcolm.

MEMOIR 44. Clay and shale deposits of New Brunswick, by J. Keele.

MEMOIR 59. Coal fields and coal resources of Canada, by D. B. Dowling.

MEMOIR 60. Arisaig-Antigonish district of Nova Scotia, by M. Y. Williams.

MEMOIR 78. Wabana iron ore of Newfoundland, by A. O. Hayes.

MAP 63A. Moncton Sheet, Westmorland and Albert Counties.

MAP 150A. Ponhook Lake Sheet, Nova Scotia.

Applications for reports should be addressed to the Director, Geological Survey, Ottawa.

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