

See Mine boring p. 14  
Carbon report

Lead in N.S. p. 14

E. R. Faribault,  
Geological Survey

# MARITIME MINING RECORD.

MARCH 13. 1918

## DOMINION COAL COMPANY LIMITED.

OUTPUT:—5,000,000 tons yearly.

Miners and Shippers of the Celebrated

**"DOMINION" Steam and Gas Coal**  
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**Screened, Run of Mine, and slack.**

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**Shipping Piers** equipped with modern machinery,  
ensuring Quickest despatch

—AT—

SYDNEY, LOUISBURG, C. B., and PARRSBORO, N. S.  
**7000 ton Steamers Loaded in 7 hours.**

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**IMPROVED SCREENING FACILITIES** at the Collieries for the production of Lump Coal of superior quality for Domestic trade and Household Use.

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General Manager  
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General Sales Agent  
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RECORDED BY THE REGISTRAR

# Acadia Coal Company, Limited

Stellarton, N. S.

Miners and Shippers of the

Celebrated

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Unexcelled for STEAM Purposes.

Popular for DOMESTIC use.

Manufacturing, Steamship, and Railway  
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High Grade Fuel  
for Steam Domestic and General  
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From Coal Washed by Latest Process  
Growing more popular daily—and considered to  
give as good results for Foundry purposes  
as the United States Article.

## FIRE CLAY

## FIRE BRICK

of Fine  
Quality.

Better than  
Scotch seconds for  
Ladle lining etc.

SHIPMENTS BY RAIL OR WATER.

### INTERCOLONIAL COAL MINING CO. LTD.

Westville, Nova Scotia.



Get the "Safety" Habit

USE

## "DOMINION" WIRE ROPE.

MADE IN CANADA.

The DOMINION WIRE ROPE CO., Limited,  
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## INVERNESS IMPERIAL COAL

INVERNESS RAILWAY and COAL COY.  
Inverness, Cape Breton.

Miners and Shippers of INVERNESS (BROAD COVE)

Screened, Run-of-Mine Slack.

—First Class both for Domestic and Steam Purposes.—

## BUNKER COAL

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

Apply to Inverness Railway and Coal Company Inverness,  
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INVERNESS RY. & COAL CO'Y

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

SOUTHBOUND Superior Div.		STATIONS.	NORTHBOUND Inferior Div.	
436.			437.	
A. M.			P. M.	
10 40		POINT TUPPEE	3 40	
11 35		INVERNESS POINT	3 50	
12 30		PORT HASTINGS	4 00	
13 15		TROY	4 10	
14 10		CHATHAM	4 20	
15 05		CHATHAM	4 30	
16 00		JUDICOUR	4 40	
17 00		MARYVILLE	4 50	
18 00		PORT HOPE	5 00	
19 00		GLENCOR	5 10	
20 00		MAROL	5 20	
21 00		GLENDYER	5 30	
22 00		BLAIR RIVER	5 40	
23 00		STRAIGHTON	5 50	
24 00		INVERNESS	6 00	
	A. M.			P. M.

# MARITIME COAL, RAILWAY, & POWER CO.

Miners and shippers of

**CHIGNECTO**  
—AND—  
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High Grade  
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Domestic

# COAL.

Unexcelled for General Use.

Shipments by Intercolonial Railway and Bay of Fundy.

Collieries:—CHIGNECTO and JOGGINS.

Power Plant, CHIGNECTO, N. S.

R. J. BELL, General Manager, JOGGINS, N. S.



**Manufacturers**  
of  
**Wire Cloth**  
and  
**COAL SCREENS**  
in all Strengths.  
Double Crimped  
Process.

WE SPECIALIZE IN  
ORNAMENTAL IRON AND WIRE WORK.  
**Jail and Prison Construction.**  
"Have you an Up-to-Date Lock-Up in your District."  
**Canada Wire & Iron Goods Co.**  
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### Change of Time

Sunday, January 6th., 1918.

## HALIFAX and MONTREAL OCEAN LIMITED

DAILY EXCEPT SUNDAY.

Dep. Halifax	7.45 a. m.
Arr. Montreal	10.15 a. m. following day.
Dep. Montreal	6.40 p. m.
Arr. Halifax	11.40 p. m. following day.

Used by Collieries in Lancashire, Stafford-  
shire & Yorkshire

**'XTERRA'**

**COLLIERY LAMP OIL**

For Marsaut, Muessele, Delecto, or Closed Lamp;

PURE WHITE FLAME.

LOW PRICE

**E. WOLASTON, Dutton St. MANCHESTER.**

Sole Representatives for Canada, AUSTEN BROS.  
Limited, Halifax, N. S.

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Dep. Halifax	3.00 p. m.
Arr. Montreal	7.40 p. m. following day.
Dep. Montreal	9.25 a. m.
Arr. Halifax	4.00 p. m. following day.

# J. W. CUMMING, & SON, Limited.

We manufacture a complete line of Tools for the Coal Mine,  
the Plaster Mine and the Lumberman.

Wood or Steel let CUMMING'S make it.

## OUR PRODUCTS:

Coal Boring Machines.  
Stone Boring Machines.  
Ratchet Boring Machines.  
Breast Augers.  
Pump Bars.  
Spike Bars.  
Machine Picks.  
Picks.  
Needles.  
Stemmers.

Steel Pit Hammers.  
Screws.  
Light and Heavy Forgings.  
GAS LINGS.  
Track Tools.  
Bark Peelers.  
Road Makers Axes and  
Chisels.  
Rope Swivels and Cones.  
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Frogs.  
Spikes.  
Bolts.  
Mine Cars.  
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All Our Tools are built on practicable lines, and guaranteed to give satisfaction.

Home Office: **NEW GLASGOW, N. S.**  
Branch Office and Warehouse, Leithbridge, Alta.

## 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., March 13th., 1918

No 17.

## CONSCRIPTION, OF WEALTH

A good deal of nonsense has been talked in recent days about the conscription of wealth, and it was just as well that both the Chancellor of the Exchequer and Mr. Asquith should have made themselves quite clear on the subject as they did on Tuesday night. We all believe in the conscription of wealth, but we must have a definition of the term. Wealth has been conscripted in this country for a good many years past. The very income-tax itself is a form of conscription of wealth. The super-tax is an extension of the conscription of wealth, and the excess profits tax will not come under any other definition. But what some people mean by conscription of wealth is a levy on capital. For twenty-three years past (since Sir William Harcourt's famous Budget) a levy of capital has been made—the capital of dead men. But a levy on the capital of living men might have very far-reaching consequences, and certainly would not be in the interests of the poorest classes of the community.

We think we remember seeing an account of some of the early Russian revolutionaries going to the banks to demand the capital of certain manufacturers. They did not realise the meaning of the term Capital. We must always realise, in discussing this matter, that it is important above everything else that no suspicion of repudiation of obligations, either by direct or indirect means, should ever be allowed in regard to the British National Debt. To write off a proportion of that, as is recommended by some unthinking Socialists, would be a breach of faith, and it is impossible to make a difference between wealth lent to the country through patriotic motives, in its time of need and other wealth which may be being used for equally necessary purposes in the national economy. The taxation of wealth up to the limits of the country's necessities, yes; but a levy on capital, no. Nothing would do more to undermine that which is one of the greatest of British assets, and makes all of us richer than we should otherwise be—British financial stability.

## THE LEAGUE OF NATIONS.

Rev. F. C. Spurr's monthly lecture on Sunday evening was devoted to the topic of "Christianity, and the League of Nations." Everyone, he said, was heartily sick of the war and anxious for a just peace; but no basis for a just peace was to be found in Count Hertling's speech to the Reichstag, and so for the time being things must go on. But while working and waiting for a righteous end to the war, it was essential that we should also think and plan and work for the world that ought to be and must be after the war. There were but two ways open, the one the continuation and even the acceleration and increase of militarism, the other the adoption of a League of Nations. Such a league must of neces-

sity be based upon co-operation and a recognition that each nation, large or small, had its distinctive contribution to make to the common weal of the world. An international Court or Parliament was part of the scheme, to which should be committed not simply the settling of disputes, but all international questions. These questions should be discussed with the fullest publicity; secret diplomacy must be a thing of the past. Peace Courts have hitherto supported themselves upon moral suasion, but until humanity has learned better, force seems to be a necessity. This force would be represented by an international army and navy for the policing of the seas and to be used as a last resort against any nation which broke its pledged word of honour. An effective weapon would be the boycott, to be put in force by the rest of the League against any recalcitrant nation. The League of Nations implies a higher moral standard than the world has at present known, and it can hardly succeed unless it can draw upon the power of religion.

## A MEASURE OF DEPERATION FOR GERMANY.

The Amsterdam "Handelsblad" (says the Press Association) has a long article explaining the adoption by Germany of the policy of unlimited submarine warfare. Circumstances, it says, of a romantic character placed in the hands of a correspondent a number of important documents bearing upon this question. At the close of the year 1915 the German Admiralty Staff prepared a semi-official memorandum to prove to the Kaiser and the Chancellor that an unrestricted submarine campaign would compel Great Britain to sue for peace "in six months at the most." They reinforced their argument by adducing the evidence of ten experts, representing finance, commerce, the mining industry, and agriculture. All these agreed that with unrestricted submarine warfare England would have to sue for peace in six months at the most. Herr Muller, president of the Dresdner Bank, held that three months should do it. Dr. Salomonsohn, owing to the absence of the spirit of self-sacrifice among the English people, also thought six months an excessive estimate.

Again, all the experts agreed (and this, two years ago, was the point that weighed most with them) that the internal situation in Germany demanded that the most drastic method of submarine warfare should be employed. One admitted the possibility of Germany not being able to hold out, and another said that, although some German firms had made enormous profits out of army contracts, etc., the great mass of people were at the end of their resources.

The first school of weaving in London and the suburbs has been inaugurated at Ealing. The pupils will be wounded sailors.

## 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. DRUMMNOD, PUBLISHER.

STELLARTON, N. S.

March 13, 1918

## THE ALLAN SHAFT INQUEST.

## Jury's Verdict.

The following is the finding of the jury in the inquest into the Allan Mine disaster:

"We, the Jury empanelled to inquire into the cause of the death of the victims of the Allan Shaft Disaster of January 23, 1918, after hearing all available evidence, and considering the same, hereby submit the following verdict:

"That the deceased party came to his death as the result of an explosion. The cause of such explosion although not absolutely proven, yet it would appear from the evidence that quite probably the explosion originated in or about Bord No. 2, Balance 1 1-2 on the 1200 foot level. And also, that at another point of about the same elevation in Cage South East, 1200 ft. level, fire was discovered on the 24th day of January and subsequently near the fire was also found a wire of different nature to any wire used by the Acadia Coal Co.

"We would, therefore, recommend that the Government of Nova Scotia be asked to confer with the Federation of Labor and appoint an expert commission to thoroughly investigate all matters connected with the explosion.

"And would further recommend that more stringent legislation be enacted in regard to the granting of Certificates to Miners, Examiners and Shot Firms.

"And further recommend that the Mining rules be printed in the different languages of all employees."

Disappointment has been expressed with what is termed the halting words of the verdict. Curiously that is the feature of the verdict which best satisfies the Record. We cannot imagine that experts on a jury would risk ruining, or marring, their reputation by an emphatic announcement, the expression of a positive belief, as to the immediate cause of, and the precise spot in which occurred, the mishap. We cannot do other than commend the caution, hesitation if you will, of the jury as a whole.

Before endorsing the opinion as to the seat of explosion one must have at hand the long hand notes of the evidence. If the disaster really originated in No. 2 Bord, as suggested, far more evidence must be forthcoming than the condensed notes appearing in the press. The following thoughts occur to one on reading the evidence as furnished by the press.

The explosion acted differently than in the case

of previous explosions in Nova Scotia, and, it can also be said, of a majority, at least, of explosions occurring on the American continent. It was stated in evidence that the most damage was done in Bord No. 2, and because of this the seat of the explosion was there. Does that necessarily follow? It did not in the case of the Drummond, nor Springhill, nor in the case of New Waterford if the seat of the explosion in the latter instance is not to be disputed.

As a rule an explosion gathers force as it speeds along.

The explosion in the Allan was not confined to a particular spot.

What then fed it. Dust or gas?

Possibly a fuller report of the evidence may disclose why the mine or No. 1 1-2 balance was freer from dust prior to than subsequent to the explosion.

Thos. Scott's evidence was to the effect that 1 1-2 balance was very wet; no dust there.

Sprinkling of dusty mines is presumed to be a preventative of dust explosions. Did gas, then, cause the explosion, and was it the heat from the gas that caused the moist slack to cake on the roof or sides, or on the props?

Thos. Scott worked for two weeks in No. 2 bord and found no gas there.

Robt. McNeil swore he examined No. 1 1-2 balance the morning of the day of the explosion and "never" found any gas there.

Thos. Hale said the mine was too dusty. Mal. Beaton said that in the 1. 1-2 balance the dust had been fused into coke.

From the incomplete notes of evidence we have read we can go no further than to say that we cannot accept the jury's "probability" as conveying more than a possibility, and not at all as a certainty.

After opportunity has been afforded of reading the evidence in full, we may arrive at some definite opinion as to the seat and the cause of the explosion, and that opinion may coincide with that expressed by those who examined the mine after the explosion. If it does, and therein differs from the opinion hinted at in what we have here expressed, we shall face freely any charge of being inconsistent. By the way, as a postscript, we might say that while the balance was long—600 feet, the No. 2 bord was short, only about 45 feet; and further, by the way, the Record has it from one who touched the faces of, among the first bodies taken to the surface, that they appeared, and felt, as if they had received a coat of black paint. The smut on the faces was spiration to which dry fine dust adhered, or was moist dust hurled by the blast against their faces? The more one thinks of the disaster the more puzzled he becomes as to the causes leading to it.

## REPLACING THE FUEL CONTROLLER.

The United States Fuel Controller, Mr. Garfield, is having a somewhat trying time of it. His many mistakes are being pointed out. There are those who declare that he himself stultifies efforts at increased production. He made the big mistake of placing price on a parity,—if not giving it a place precedent—with production. Whereas production should have been his first and his chief care, and price have

taken a secondary place.

And our own Mr. McGrath has made a similar mistake. He set the first price, seemingly regardless of the effect the price set might have on production. Had the setting of a price a little over four dollars a ton the effect of diminishing production? Undoubtedly. Some operators were careless whether they produced any coal at the set price. In fact they said they would sooner allow the coal to remain in the mine than blast, or cut, it at the price. Why should the Canadian Fuel Controller fix a price much less than what the C. P. R., for instance, was ready to pay? That railway has bought more coal than Mr. McGrath may ever have the privilege of controlling, and its management, it may be taken for granted, never paid a higher price than absolutely necessary. Why then was the price set by the Fuel Controller less than the C. P. R. is ready and willing to pay? Is Mr. McGrath aware that the Canadian Government Railway will have to pay about a dollar a ton more for a portion of its coal than the price allowed the coal operators? Coal sold under contract to the C. P. R. has been commandeered, or confiscated, by the Canadian Government Railway. It has been decided in the United States that coal diverted to government purposes, when in transit to those who had contracted for it, must pay the contract price. It should follow then in Canada that coal shipped for the C. P. R. and seized by the C. G. R. must pay the original contract price. Had

ment that a fair price should be given to the operators, in fact as high a price as other customers were ready to pay, the operators would surely have striven after an increased production. The unprofitable price retarded production; a reasonable and paying price would have stimulated it. McGrath should form new associations. The scriptural saying is, "If the blind lead the blind both fall into the ditch." He took with him on his last visit to Nova Scotia the well advertised Jimmy Watters, the upshot being a promise from Jimmie's friends that the output will be increased 60,000 tons or over monthly. Mr. McGrath had better not bank too much on that.

From this time forth Mr. McGrath's position will be a comparatively easy one, at least that part of it which has to do with the controlling of Nova Scotia coal. With the assistance of the celebrated James Watters he has secured from the offices of the Amalgamated Mine Workers of N. S. an assurance that they will increase the output fifteen thousand, or more, tons a week or, say, 60,000 tons a month. This feat is to be accomplished immediately. This additional increase will render any further anxiety on Mr. McGrath's part unnecessary and, of course, there being no work for him to do in the east he will be able to devote all his energies to keeping things up to the mark in the west, and on the border line. This increased production is to be brought about by the A. M. W. procuring a thousand men in the Ancient Colony. There is the possibility that the men may not be obtainable. Even so, the 60,000 tons a month may not be lost. The A. M. W. has another card up its sleeve. It will allow the Government to import Chinese, provided the society is given control of the mines and secures all of the profit, and has the privilege and power to deport the Chinamen at any and all times, at discretion, and without any

interference by the Government, except the shelling out of return prepaid passages. The scheme is a very modest one, and will commend itself to every man who has a bee in his bonnet. With the Chinese as serfs, under the drivership of the A. M. W. executive, coal production in Nova Scotia will be placed in so strong a position that the occupation of the Fuel Controller, so far as it at present concerns Nova Scotia, will be gone. The success of either of the schemes places the position of others than the Fuel Controller in jeopardy. Confusion will show on the face of all who have predicted that there may be a decrease in Nova Scotia output this year of 400,000 tons. Instead of that, if both schemes do not miscarry, nineteen-eighteen will show a handsome increase—say 300,000—over the production of nineteen-seventeen, its immediate predecessor. The Record meantime is content to "bide a wee."

### COAL FROM BURNING MINES.

The Commission appointed, many years ago, by the Local Government to inquire into the mine fires in Pietou County was not originally asked for, as many suppose, for the purpose of ascertaining the cause of their long continuance, or of devising some schemes to extinguish them, but for the purpose of ascertaining whether or not it was possible to recover the mines which had escaped fire. Many contended that there was sufficient pillar coal to warrant attempts to recover it. (The evidence given by old miners who had worked in several of the closed mines, was contradictory, and the plans were held not to be reliable. The Commission's finding was not stimulating. It should not be forgotten, however, that what could not be an economic proposition a score or more years ago may be a sound one to-day. This seems to be borne out by the fact that coal is now being taken out of a mine in the United States which has been burning for nearly three score years. Here is a clipping from the Coal Trade Journal bearing on this point:

"The Lehigh Coal & Navigation Co. has been taking a considerable quantity of coal for months past from the seams laying beyond the barrier wall by which the great fire at Summit Hill (dating from 1859) has been confined. Great as was the work involved in the building of the wall considerably in advance of the corner area of the fire, vast as was the amount of material put into it, the heat penetrated the wall and took a certain amount of volatile matter from the coal immediately adjacent thereto. But the coal beyond is mostly of the celebrated Mammoth vein and is recovered by the stripping process, thus permitting open-air inspection and the shipping of a first class article. By excavating a great portion of the coal bed, as has been done, the question of the fire spreading has been settled forever, since there has been created a great intervening space containing no fuel.

"The first steps taken in the successful attempt to check the fire at the burning mine near Summit Hill were in the spring of 1909, and in the issue of May 12th that year, the Journal contained a detailed, illustrated article with reference to the work then



under way. As therein mentioned, it was determined to sever the coal seam throughout its entire vertical thickness of about 50 feet, and for a width of 12 feet, from the outcrop of the northern end to the standing water in the basin, and afterwards to fill this excavation with clay or concrete, thus establishing a solid, non-combustible character. The result was a solid wall of concrete 12 feet thick and about 1,100 feet in length."

### UNITED STATES EXPORTS TO CANADA.

In 1916 there were imported into Canada from the United States 3,868,000 odd tons of anthracite against 5,025,000 odd tons in 1917, an increase; last year, of 1,163,000 tons. Of bituminous there were imported 12,849,000 odd tons in 1916 against 16,192,000 odd tons in 1917, an increase last year of 3,343,000 tons. Combining anthracite and bituminous, the imports, in 1917, exceed those of 1916 by 4,500,000 tons. This is what our friends across the line would entitle "some increase." And it undoubtedly is, and is proof that last year Canada had great industrial activity, and this increase does not include importations by water to Atlantic ports.

### Rubs by Rambler

The Herald in its headlines over the verdict of the jury in the Allan disaster inquest says, among other catch words, "Stand taken by Halifax Herald endorsed. Why are other papers opposed to fullest investigation?" Such an introduction is wholly unfair. The Record is certain that no paper in Pictou County opposed a thorough investigation, and I am unaware of the fact if any paper outside the County made slightest objection, or even threw luke warm water on a real and timely investigation. The Herald was astray in the stand it first assumed. The Pictou papers were right. The former called for immediate investigation; the latter held that no investigation could properly take place until the mine had been practically repaired, making close investigation possible. And no investigation will likely take place until the mine can be freely explored in every part, when all the debris has been cleared away. The cleaning up may be finished in a day or two, or it may take a week or two. And before any investigation can well be made the evidence taken at the inquest must be considered and digested.

• • • • •

He belonged to the army of invasion, but he was neither an officer nor a private who was the first to enter Jerusalem when the historic city was captured by the British. The following interesting extracts are from a racy letter written by an officer to a friend in England. Here are incidents that will may go down to history:

"I shall never forget the joy of the poor inhabitants as we marched in—the first British troops. They had waited three years for the day, and they simply

hung round our necks and kissed us and cheered. It was worth everything to see their happiness, and I must confess that I had a lump in my throat and a moist eye. One old boy gave an officer a handful of new Turk coins for all the officers. I will send mine home in a day or two—it will be worth keeping." "By the way," he continues, "early in the morning of Sunday our officers' cook and another man set out from our camel lines with a dixie of hot cocoa for the officers. We knew he was coming, and as we had had nothing hot for 48 hours we were not very much pleased when he became very much over-due. Some hours later he did arrive—but very much scared. He had lost his way, and marching through our lines had entered the outskirts of Jerusalem. Thus the first Englishman to reach Jerusalem was an unshaven, soot-smudged cook, carrying a dixie of cocoa, so you see there is humor even in war."

• • • • •

It might be expected that Britain, being an old country, and holding a foremost place in manufactures that there would be little room for new industries after the war. It is now realized that there must be new industries where all the munitions machinery has either to be scrapped or employed in other directions. In Britain they are taking time by the forelock, and a committee has been appointed for the purpose of pointing out new and necessary channels for trade. It is time a committee modelled after the British lines should get to work in Canada. Among other things the committee has to make recommendations as to the establishment and development of these new industries by the transfer of labor or machinery, or by other measures. Also as to how such transfer could best be made, and what organization would be needed for the purpose, with due regard to securing the co-operation of labor. To give help on this side of work a labor advisory panel is being formed, consisting of representatives of skilled, semi-skilled, and unskilled workers, and of women. With this panel the committee will work in co-operation on questions concerning labor. It is pointed out that the need for such a list of articles and for some organized effort to make them at home has been amply shown by the war, which revealed our dependency on many countries, including the enemy, for articles vital to our industries and even to our war equipment. "Rush" orders to many countries were necessary before we could obtain them, and but for these special efforts and favorable circumstances which enabled us to import these articles we should have had to go short. The Committee has already covered some of the preliminary ground of its inquiry, and lists of imported engineering articles have been compiled from information supplied by merchants, trade associations, and others. The lists embrace hundreds of articles, ranging from the biggest engineering tools down to the smallest accessories.

• • • • •

Had it not been for the explosion at New Waterford last July the fiscal year, ending Sept. 1917, would have fewer accidents to its debit than any year of the past decade. The number of, what may be termed, individual fatalities, numbered twenty.

C. continued on page 12.

# AROUND THE COLLIERIES

One has often heard of flameless powder. In reality, is there any such thing? If the result of a blown out shot is a stream of fire, then powder without flame is a myth.

Mr. Scott in giving evidence at the inquest said that the discontinuance of powder would diminish the output by a third. Well, what of it? If it comes to a question of lives or outputs, which should prevail?

The Commission to make inquiry on behalf of the Department of Mines is not likely to be appointed until all the falls in the Allan mine have been cleared away, and the evidence taken at the inquest has been fully written out and digested.

The heavy electric cables for the new haulage in Dominion Nos. 2 and 9 have been placed in position in the shaft, and connected up to the haulage engine. When the roadways and landings are ready the new system will begin.

The Record has, since the New Waterford explosion, contended that as the duties of mine examiner are important, a more rigid examination, as to qualification, should be had, and that the examination, as to competency, should be by the Board granting certificates to overmen and the general manager.

When a year or more ago the shipments for the calendar year did not show up as well as those for the fiscal year, the Record said, "Wait a bit and next year the fiscal year will get it in the neck," and it has gotten it. The decrease for the fiscal year 1917 is 790,000 tons. This dwarfs the decrease for the calendar year. The loss of revenue is not far from \$100,000.

The trustee for the Roche's estate is prosecuting work at St. Rose, as well as Chimney Corner. The slope at St. Rose is about 300 feet in length and is being pushed forward. A fifty feet shaft has been sunk to assist in ventilation. The seam is said to be 8 ft. thick. In the winter months about 60 tons a month of coal were sold in the vicinity. This should help defray part expense of the exploratory work. Of course a big business cannot be done at either Chimney Corner or St. Rose until there are railway, or water transportation facilities, or both.

Prospecting is still being carried on at Port Hood in an effort to find out the most suitable place for a new slope, or shaft. The shaft sunk a few months ago has been abandoned meantime, and another will be sunk nearer the village and close to the shore.

Some work has also been done at Mabou. A tunnel was driven some distance from the mouth of the slope formerly worked and presently flooded. This tunnel is to be driven until the coal has been reached when a level will be driven to prove the coal is the 8 ft. seam.

Gold mining was at a low ebb in 1917. The quartz crushed was less than that of 1862, the first year for which there are any official figures. The quantity crushed was only 9,710 tons. There is quite a little satisfaction in the knowledge that the yield of gold per ton crushed was close on 8 dwts., the best yield for many years.

The new wage agreement between the Dominion and other coal companies of Cape Breton has been signed up. The increase is a good one, and but for the fact that the executive officers of the Union deluded their members into making exorbitant demands, there would be general satisfaction. To ask for increases ranging from 35 per cent to 100 per cent and get a small fraction of the amount is far from being good business. It may, however, serve as an election cry to those who forget that they may want to travel that road again.

Presence of mind and courage and a little technical knowledge are a fine combination and a splendid asset for the possessor. Last week reference was made to a great mine explosion in England. The lives lost were not as numerous as the first reports indicated. A British paper contains the following interesting item in regard to the saving of no fewer than forty-eight lives:—"Forty-eight lives were saved in the Minnie Pit disaster by a colliery fireman, through his knowledge of mine ventilation, gained while studying for his second-class mining certificate. On feeling a rush of wind indicating an explosion, he collected his men and closed two doors, which short-circuited the air and drove away the poisonous fumes. While the men stayed there he explored the pit and finally led them all out into safety. It has now been ascertained that the total number of victims was 136."

## AROUND THE COLLIERIES.

Quite a few classes of the workmen at the different collieries have accepted pay by the month instead of the day. It is all right if the rate of increase holds good when increases come round.

The coal mines used to be attractive to farmers, fishermen, and most all other classes of labor, but it is now not unusual to hear that some of the older miners are going fishing, or going back, not to the land, but to the boat.

When it is known that the mine water of some of the Nova Scotia collieries will eat through the end of a pump within twenty-four hours, and, that, so far, all metal compounds have failed, maple wood or concrete forming the lining of valves, it will be seen that coal mining has problems of many kinds.

The Emery, is one of the lower seams underlying the Phalen seam. It is a four foot seam. In the Reserve district where it was first opened up it has yielded fair outputs. When tapped close to Dominion No. 3, for a time it was very discouraging because the coal was found to be very thin for long stretches. Since going through this troubled ground the seam has proved very much better running in places from four to five feet. It is now in a very good district of coal at No. 11 and we trust it will continue to improve and increase in thickness.

The Glace Bay Gazette is not sure whether the demand to be made by the A. M. W. means that the Government are to have no Deputy Inspectors of Mines than those named by the A. M. W., or whether the latter are to be in addition to those appointed by the Government, for its own behoof, etc. The Mining Record is of opinion that it is a reform in the mode of appointment that the A. M. W. is keen to effect. The present deputies are to walk the plank and a brand new set selected and named, by the society, take their places. The only thing the Government will have to do with the deputies thus appointed is unimportant, namely, the payment of the salaries. The thing is so simple that one cannot for a moment doubt the ready compliance of the legislature. The thing to surprise one is the modesty of the demand. Why didn't the A. M. W. put on their programme the appointment of the Inspector of Mines. Indeed, it is a matter of surprise that they do not intend to ask that hereafter the appointment of a Commissioner of Mines must have the approval and endorsement of the A. M. W.

The Government would do well to make the officials of the A. M. W. of N. S. officials in the collieries. They know, or seem to know, so much about how to obtain larger outputs of coal that they would be benefactors to the country at a time when larger outputs are very much needed. Surely they would be willing to put their knowledge to the benefit of their country, if properly appealed to.

As predicted by the Record at the time of the negotiations between the P. W. A. and the opposing union, that no matter what the latter for the time being called itself, the ultimate aim was to convert a Nova Scotian into an American union. A vote has been taken as to amalgamation with the A. M. W. of America and the decision is to join the foreign order. If the Record is not greatly mistaken the local government and the other prominent abettors of the new union will have their fill of it in the coming year, or will we give orders for the wearing of a capacious mantle of charity.

Commenting on the Allan mine disaster verdict the Eastern Chronicle says:—"On the whole the verdict appears to be a compromise between men of different mind. The recommendations may be useful, especially by the government tightening up the regulations. No one will object to the government conferring with the Federation of Labor so far as members of that body have positive knowledge of coal mining; but the people who own the mines expect that the government will take such steps independent of anyone that will render a recurrence of such an explosion improbable—we will not write 'impossible,' for that is beyond human power."

The Record thinks that the Chronicle's point in reference to the government holding consultation with the American Federation of Labor is well taken. Why should not the Acadia Coal Coy. and the operators in general be consulted? The aim of the Federation is to promote the welfare and safety of the mine workers; and the aim of the management of the Acadia is to conserve the company's property. The desire of the management, no doubt, is to employ every legitimate, and likely, means to prevent the company's property being destroyed, by explosions. As a rule it follows that destruction of property follows destruction of lives, so the aim of the management is to do all, humanly possible, to prevent disasters such as that of the Allan Shaft. We believe a majority of the companies are ready to possibly inconvenience them more than it would the workers.

## AROUND THE COLLIERIES

The riding rakes have been placed on the main deeps of Dominion No. 6. At present men go down in the pit boxes, but proper cars will be put on shortly. The grade of No. 6 slope is heavier than the others in the Glace Bay district and favours the riding rake system! This will be a great advantage to the workmen as the long walk to the coal faces is a decided disadvantage in the older collieries.

A little mining is being done at Chimney Cove. The coal being mined, from exploratory work, finds ready sale in the neighborhood. A slope is being sunk. The angle is pretty steep, some thirty-three degrees, but this, as yet, is not a disadvantage as it is a guarantee of sufficient cover when the slope reaches the water. It will, of course, be better that the pitch, as at Mabou, lessens as it goes under the sea. Mr. J. J. Doucet is mine manager.

The Jubilee colliery at Sydney mines has not been the most successful operation since it was opened up. The matter of a little brass mixture may seem a small thing but when it is found in the places where the coal is mined it presents a very serious problem indeed. The Jubiles (2) are unfortunate in this respect. Were the seams high the difficulty might be better overcome but in a low seam there is little chance to cope with the difficulty.

To the Fuel Controller the three members of the A. M. W. said they would go to Newfoundland, and get a thousand men. In an interview the speaking official of the society increased the number to 1,200. Possibly before the officials set out on their mission they may leave orders to have accommodation provided for 1,500. Well, to secure 1,500 mine workers is a big undertaking. In going forth for much wool it is to be hoped the delegation will not return closely shorn.

For the first time, probably, in the history of the provincial coal trade, Nova Scotia was a better customer of the collieries than all other markets combined. Of the coal production for the fiscal year the province out of a total of 5,143,000 odd tons, took 2,880,000 tons. If bunker coal be included in Nova Scotia's figures then the local market took three-fifths of the total production. Also for the first time New Brunswick is the best outside customer, taking as much as Newfoundland, Quebec and the United States combined. Newfoundland is a fairly good customer, taking over 2,26,000 tons.

There are nineteen coal companies doing business at the present time. More than half, or ten, are mining in Cumberland County. The output of some of these is, of course, limited. Springhill leads, but it better look out for its laurels as the Maritime Coal Co. is forging ahead. Cape Breton has four coal companies, Pictou four, and Inverness one—in operation, and two developing.

"The indictment of Michael MacIntosh, Angus McEachren and John MacDonald, officials of the Dominion No. 12 colliery, New Waterford, for criminal negligence alleged contributory to the causes of the explosion which occurred on July 25th, 1917, have been filed. The charges will be heard at a special session of the court, the date to be decided upon to suit the convenience of counsel. Judge Chisholm is ill just now and the date will be definitely decided upon when he is able to open the court."

The foregoing is from the Sydney Post. But what has it against Mr. McIntosh that it gave him away while cloaking the identity of the others? Had the Post given the names as Michael McDonald, Angus McIntosh and John McEachren it would not be open to any charge of discrimination. The indictment as published is in substance that Mr. McIntosh was a deputy inspector of Mines, and was under a legal duty to take reasonable precautions to insure the operation of the said colliery (Doin. No. 12 E. M. R.) in a manner calculated to prevent loss of life, through an explosion or otherwise, and being under the obligation of preventing the operation of mining coal in said colliery in an illegal manner, unlawfully permitted without lawful excuse the said colliery to be operated in an improper and illegal manner. . . . without a proper and efficient use of brattice, etc., etc." The Record wonders if in seizing upon Michael they have hold of the right man.

### RUBS—(Continued from page 9.)

two, as against 29 for 1916, 41 for 1915 and 48 for 1913. The per centage of fatalities to every 1,000 men employed was 2.13 and 3.38 for every million tons of coal mined. These are the lowest for ten years at least. The per centage in each case are lower than in the United States. This should be proof that our mines are not the worst conducted in the world. It should not be forgotten that coal mining in Nova Scotia is subjected to disadvantages from which most other countries are more or less free. The percentage of fatalities is very high, if

the New Waterford fatalities be added to the individual showing no less than 8.41 per 1,000 employed. Next year it is possible, unless the individual accidents are very few, that the percentage will be even less favorable. The Allan Shaft disaster will be included in the 1918 Mines Report. This is the first time in Nova Scotia when two big disasters followed in two consecutive fiscal years. The safety first movement has evidently been of service, as the fatalities from falls are fewer than from those by cages, and boxes. While an accident from a fall may be of the kind called accidental, it is to be feared that more than one of the fatalities caused by boxes were preventable, being due to men taking risks or evading the law. It is a great pity that the Mines Report persists in refusing to give any explanation of "why" an accident occurred. In only three cases is there satisfactory explanation as to the reason, or cause of, the accident, and singular that in two of these cases the same officials may be held to be blameworthy. Surely it is not to be inferred that in a majority of the other cases the victims were, at least, partly responsible for the accident. Suppose a stranger were to put the question to a Nova Scotian, "How many of the mine fatalities in your country are due to breaches of discipline, and how many to the fault of the bosses or companies?" What answer could be possibly make? None, and there is no one to go to who could supply the information. It is evident, then, when we talk of fatalities being due to the greed of corporations, or the negligence or rashness of the workmen, we are talking on a point on which every Nova Scotian is hopelessly ignorant.

Considerable quantities 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.

The Bishop of Liverpool, preaching at Aigburth for the C.E.T.S., said that while travelling recently he had got into talk with a Colonial lad, who asked, speaking of drunkenness, "Why don't you stop this thing in your country? Why do you allow us to be tempted as we are? Mine is a dry country, where we have no such temptation as you have."

Mr. Arthur Henderson, M.P., speaking at a meeting of delegates of the Labour Party Conference, convened by the Committee of the Strength of Britain Movement, said that he believed if prohibition had been proposed during the first three months of the war it would have been almost unanimously accepted, and might have had a wonderful influence in shortening hostilities.

Lord d'Abernon, speaking at Glasgow, said there are now about 700 canteens in munition works, of which 150 were in national factories and 550 in controlled establishments. Less than 100 of these had been established before the war. These establishments served about 900,000 workers with 400,000 cooked meals daily, and their total turnover was not less than £2,500,000 a year. Much more, however, must be done before the needs of all workers were met, and Lord d'Abernon pointed out that the cost of erecting and equipping a canteen at a controlled establishment may, with the approval of the Central Board, be met from excess profits.

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

#### ZINC—COPPER—LEAD.

The chief ore of lead is galena, and it is found in this Province, principally in the Carboniferous limestones and in the pre-Cambrian formations. There are usually five metals closely related in the geologic occurrence of their ores, and are also classed together in their metallurgical treatment. These ores are gold, silver, copper, zinc and lead. Some ore contains all five of these metals; some contains three, some four of them, and a few ores contain only one of them. Gold and silver often are associated, as is lead and zinc. Lead ores are associated with silver; and copper ores usually produce gold and silver. Sometimes all five metals above named

The number of persons arrested for drunkenness in the streets of Glasgow between midnight on Friday, December 28, 1917, and midnight on Friday, January 4, 1918, was 477, a noteworthy reduction on the figures for the corresponding week in former years—965 a year ago, 905 two years ago, and 1,070 three years ago.



are contained in commercial quantities in the same ore. These are termed mixed ores. Lead ores are those carrying more than 4½ per cent. of lead, and zinc ores are those carrying more than 25 per cent. zinc.

### Stirling Mine

Recently a large deposit of ore carrying all five metals has been discovered at Stirling in the County of Richmond. The property has been bonded to a wealthy New York company, and boring operations are now carried on to test the thickness of the veins, which are reported to be rich.

### Lead

Lead ore is found at Upper Stewiacke, Colchester County. There has been some prospecting done there. The ore is found in the Carboniferous limestone and contains lead about 57 per cent and silver about 25.5 ounces to the ton. This deposit should be of commercial importance.

At Cheticamp, Inverness County, there is a mine from which a test of ten tons was taken in the summer of 1915.

Lead ore also occurs at Boisdale and East Bay, in Cape Breton County, near Musquodoboit, Halifax County, and at L'Abime Brook, Inverness County. The ore at the last mentioned place was discovered in 1896. It showed an analysis of 20 per cent. galena and 3 per cent. copper, and was reported to carry one ounce of silver for every unit of lead, with gold in places up to 14 dwt. a ton.

The lead industry has been much affected by the war in Europe. Larger quantities of "pig" lead have been shipped from the United States than have ever been shipped before, bringing that country a gain of 7,662,000 dollars in 1915 over any other year's sales.

There is no lead mined in Nova Scotia at present, but indications look bright for a development of this industry in the near future.

### Stirling Mine

The following is a reference to the deposit at Stirling from the latest—at the time of writing—summary Report of the Canadian Geological Survey—

The first work is believed to have been performed on the Stirling zinc-copper-lead deposits about twelve years ago. This work was of only a prospecting nature, and included the sinking of a shallow shaft or pit, and the digging of a few trenches or open-cuts. The only mineral that was known to occur in these deposits, which was considered to be of economic importance, was copper, and there did not appear to be enough of this to pay for working. Nothing further was done in the way of development until recently. Since the war the demand for various metals has greatly increased and one of those most required is zinc. Accordingly, as the Stirling deposits contain important amounts of this metal, the property was leased from the government of Nova Scotia on August 2, 1916, by James P. Nolan who obtained licences to search for minerals over five blocks of 5 square miles each. From these licensed tracts he selected and took up two leases each of one-half square mile, which include the right to prospect, mine, etc. One of these leases covers zinc and the other does not, in which latter case the zinc

goes with the surface rights of the farmer who owns the land. An option on Nolan's leases was obtained by H. H. Sutherland of F. C. Sutherland and Company of Toronto, who also secured from the owner of the surface rights, an option on the zinc for the area of the lease not covering this metal. In addition, Mr. Sutherland obtained from the Nova Scotia government several permits to search for minerals in this vicinity.

During the past summer (1916) some surface development, mainly in the form of trenching, was done on the deposits, which showed them to be of decided economic importance. The writer was instructed by the Director of the Geological Survey to examine the occurrence, and accordingly a couple of days were spent in this district during the early part of December. The deposits were carefully examined and sampled, as far as exposed.

Since visiting this property, the writer is informed that it has been purchased by J. R. Ray and F. C. Sutherland and Company, both of Toronto, who have resold a 65 per cent. interest to Hayden and Stone of New York, and the American Zinc Company, of Boston. The new organization operating the property is named the Stirling Mining and Smelting Company. Diamond drilling was commenced and by the end of January (1917) was well under way, a 3,000-foot contract having been let. If the deposits prove satisfactory, extensive operations are contemplated for the immediate future.

The Stirling zinc-copper-lead deposits are located in Richmond county, in the south-western corner of Cape Breton island, N.S., and the development work is all within a few hundred yards of Stirling post-

office which is part of the farm house of Mr. John MacLeod. Stirling post office is situated in a direct line between Loch Lomond and Framboise cove, and 7 miles from Loch Lomond, and 5½ miles from Framboise cove, measured in an air line. The leases on which the Stirling deposits occur also adjoin the eastern end of Five Island lake.

To reach Stirling, it is customary to go via the Cape Breton railway which runs from Point Tupper to St. Peters. From St. Peters there are good roads to Stirling, a distance of between 35 and 40 miles. It is also possible to go by boat to Framboise cove or Fourchu bay, and thence drive to Stirling. Going in this way the best road at present runs from Fourchu bay, which is about 9 miles from Stirling, measured along the road.

Ore shipped from Stirling at the present time would have to go to tide water at Fourchu bay, but it is claimed that a shorter, more direct road could be constructed to Framboise cove.

The development work on this property is mainly in the form of trenching. One pit or shaft has been sunk to a depth of 14 feet, and another was sunk some years ago, but when visited had badly caved, and was full of water. Three main trenches have been dug across the ore deposits, which will here for convenience be designated as A, B, and C. No. A trench is about 20 feet long, 6 feet deep, and 4 or 5 feet wide; No. B trench is about 45 feet long, 2 to 4 feet deep, and 4 feet wide; and No. C trench is 108

feet long, 5 to 7 feet deep, and about 4 feet wide. These all run approximately at right angles to the general strike of the deposits. Also a small trench extends from A to C, a distance of 260 feet, crosses C, and persists possibly 50 feet farther. This trench is 1 to 2 feet wide, and 3 to 4 feet deep. Another small trench crosses trench B, and extends thence northward along the general strike of the deposit, about 60 feet. These trenches are all down to bedrock. Another trench about parallel to C, has been dug to the south of C, but did not reach bedrock, as the superficial deposits are there quite deep.

In the vicinity of these zinc-copper deposits, the land surface is dominantly flat and wet, and has been intensely glaciated. Glacial and other superficial deposits overlying the bedrock have a thickness in places of as much as 15 feet, but along the three main trenches are only a foot or so deep. The surface is also fairly heavily timbered, mainly with spruce, and numerous small streams traverse the area, but only very imperfectly drain it. Thus owing to the timber, soil, glacial, and other superficial deposits, very little bedrock is exposed in this vicinity, except in the trenches; but wherever the bedrock formation is exposed on either side of the ore deposits, it consists of massive, finely textured, dark greenish to greyish green, igneous rocks having the general appearance of andesites. Since, however, these rocks have not been examined microscopically, the general field name of greenstones is here applied to them. Possibly types related to andesites, including diorites, diabases, or basalts, may occur.

A shear zone having a general trend of apparently about north 65 degrees east (magnetic), traverses the greenstones, and it is within this zone that the ore deposits occur. Every transition may be noted from quite massive practically unaltered greenstones, to ore composed almost exclusively of zinc blende, chalcopyrite, pyrite and quartz. The greenstones in places merely sheared and altered to a greenstone schist. In other places pyrite has also been introduced in varying amounts. In places also, the rocks in addition to being sheared have been more or less entirely altered to a whitish, finely laminated, talcose substance. In other places, again, the original rock material has entirely given place to quartz, a whitish dolomitic mineral, zinc blende, chalcopyrite, and pyrite. Nearly everywhere, the ores are decidedly laminated, the lamination planes agreeing with the planes of shearing throughout the general shear zone. Even where solid ore now occurs, including mainly zinc blende and chalcopyrite, with some quartz, the lamination planes are still very decided. The deposits are thus evidently due, largely at least, to metasomatic replacement, and have been produced by uprising and circulating solutions, within the zone of shearing, which have more or less entirely replaced the original rock and have deposited along the planes of shearing the minerals now constituting the ore deposits. Sections were measured of the exposures in the bottoms of the three main trenches.

All the ore material exposed in the bottoms of the three main crosscut trenches was sampled, ten samples being taken, which are numbered consecutively from 20 to 29 inclusive. Nos. 20 and 21 were taken from trench A; Nos. 22, 23, and 24 from trench B; and Nos. 25 to 29 inclusive from trench C. In

trench A, 10 feet of ore is exposed, and in trench B, there is over 33 feet of ore material. The actual distance between the ends of these trenches is over 100 feet, and the offset distance, measured at right angles to the supposed general direction of strike of the deposits, is about 90 feet, throughout which width it is not known whether ore occurs or not. Trench C is about 260 feet from A, measured along the general strike of the deposits, and ore material is exposed throughout this distance in the bottom of a narrow trench extending from A to C. In trench C there is 66 feet of ore material, and about 135 feet still farther to the south-east, measured at an offset at right angles to the general strike of the deposits, a shaft has been sunk 14 feet in the bottom of which good ore was found. No work has yet been done to determine the amount of ore in this intervening 135 feet. Altogether these deposits have been actually traced by trenching along the general direction of strike, for a distance of over 300 feet, and they have an aggregate exposed width in trench C of over 66 feet. The amount of ore material here would thus seem to be decidedly important.

When visited, the Stirling deposits had been very slightly exposed, nowhere to a depth exceeding 7 feet. Thus no estimate of the ore in sight could be made that would do justice to the property. From what was seen, however, all the evidence indicated that the deposits are probably quite extensive, and persistent both longitudinally and vertically. The grade of much of the ore material is also high. In one trench, for a width of 10 feet, the ore carries from 11 to 30 per cent. zinc, as well as significant amounts of lead, copper, gold and silver. Also, in the main trench, there is 20 feet of ore containing 17 per cent. to over 27 per cent. zinc, as well as important amount of lead and copper, and some gold and silver. In this trench, also, there is over 40 feet of ore material, which though of lower grade is still of consequence.

"In the past, similar complicated zinc ores have presented many difficulties in the way of treatment, but a great amount of research and investigation has recently been done along these lines, and no doubt the owners of the Stirling deposits will be able to evolve a satisfactory method. In this event the deposits will become an important source of zinc-copper-lead ores in the near future. The finding and development of these deposits should also greatly stimulate prospecting in Cape Breton, and it is hoped that, as a result, other important ore-bodies will be found."

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## 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 2500 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 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 Chapter 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.

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- 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. Ellis, 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. 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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