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Maritime Mining Record

Sept. 27 1911

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Fig 2. HAULING



Lang's Lay Ropes.



Fig 26 WINDING



Fig 1. HAULING



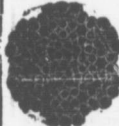
Patent Flattened Strand Ropes



Fig 4. WINDING



Fig 13. SINKING



Advantages of Patent Flattened Strand Ropes.

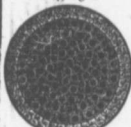
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- 4 Less tendency to twist and stretch in working.

Fig. 13 for Sinking and Fig. 11 for Cranes, &c. are non-twisting.

Fig 11. CRANE, &c.



Fig 15 a



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Fig 20



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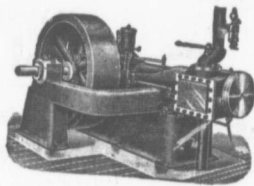
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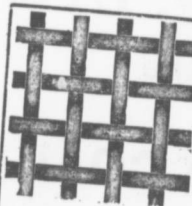


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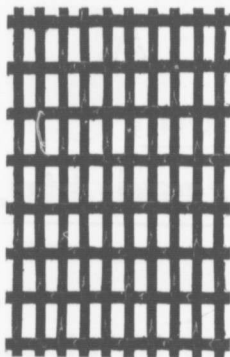
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MARITIME MINING RECORD

Vol. 14, No. 6. Stellarton N. S., Sept. 27th, 1911. New Series

PROF. SEXTON ON THE TECHNICAL COLLEGE.

It might seem to you, and your readers, Mr. Editor, that the questions concerning the Technical College in your issue of 26th were unanswerable, or that the College authorities were taking a long time to work up a bad case. The truth of the matter is that I have just returned from a trip abroad where I had the opportunity of studying the most modern developments of education for coal miners and fishermen and I now take the first opportunity to reply as far as possible to your interrogations.

Before attempting to go into the separate questions I would like to make a plain statement concerning the scope of instruction at the College.

The Technical College is a part of the system of technical education of Nova Scotia. It is an engineering college of the rank of McGill, Kingston School of Mines and the Applied Science Department of the University of Toronto.

The Technical College has four courses, Civil, Electrical, Mechanical and Mining Engineering. The course is four years long, and to enter the course the student must have a Grade XI certificate from a county academy or take examinations that show he has the required amount of knowledge. By agreement with the colleges of

Acadia, Dalhousie, King's, Mount Allison and St. Francis Xavier, they give the first two years of the four years' engineering course as offered at these colleges. This first two years course includes the general science, mathematics, drawing, surveying, English language, needed for a thorough foundation. The affiliated Colleges already had the staff and equipment to carry out this work when the Technical College was established. The last two years of the four years course is given at the Technical College and consists of applied science, applied mathematics, advanced drafting, and fundamental science and practice of the four branches of engineering etc. This calls for expensive equipment and specialists in engineering for teachers. The Nova Scotian colleges could not afford this large expense for the small number of pupils that each would have. The working agreement between the colleges was a sane agreement because it avoided any duplication of equipment and teaching staff.

I will now endeavor to answer your questions seriatim to the best of my ability.

1. The objects of the Technical College are:

- (a) To offer to the Nova Scotia boy a first-class engineering training in Civil, Electrical, Mechanical, or Mining Engineering.
- (b) To train provincial land surveyors of the

high capacity required by the new act relating to Land Surveying just passed by the Nova Scotia Legislature two years ago. Last year there were nine men in Nova Scotia who came to the College to take this special course.

(c) To offer short courses to power station operators, colliery officials, foremen in the steel works, etc. either at the college or at the industrial centres in Nova Scotia.

(d) To carry on tests, experiments and industrial research which shall help established industries in Nova Scotia or which shall assist in developing our natural resources.

(e) To plan and supervise the courses carried on in the mining schools, the engineering schools and the technical schools all over the province.

2. The college was instituted principally for the sons of men of moderate means, who could not attend an engineering college outside of the province. The sons of affluent parents still go to the Montreal to McGill altho they could receive just as good training with more individual attention in the Technical College.

3. More students choose the Civil Engineering course at the college than any other and mining comes next.

4. A student has to spend two years at either Acadia, Dalhousie, King's or St. Francis Xavier College and then two years at the Technical College or four years in all. The average yearly expenditure for students coming from outside of Halifax is about \$250.00, altho many do it for less.

5. The graduates almost altogether find situations in Nova Scotia or other parts of Canada. One of the graduates, only, has gone to the United States. A few are employed in the Unions or Steel Works. Most of the mining graduates prefer to go into metal mining because they find there better pay, more responsibility and more rapid promotion. The men who have graduated in the other courses of civil, mechanical and electrical engineering, who have gone to other parts of Canada, have gone there because there was a larger opportunity. I might cite the cases of two recent graduates who were holding positions at \$40.00 a month in Nova Scotia but went to British Columbia where they were offered \$100.00 a month.

6. It is a little too soon to say that they have been more successful than non-collegians because the oldest graduates have only been in practical life for a year. I would call your attention to the cases of a few of the mining graduates who took the course under me at Dalhousie College. These men have been in practical life for four or five years. One is probably the youngest coal mine manager in Nova Scotia; one is in charge of the Drummond Mines at Bathurst, N. B.; another is superintendent of a large mill, in Coburn and is now in charge of the erection of a large mill at Porcupine, etc.

7. It is a little too soon to trace any perceptible benefit to the coal mining industry in Nova Scotia.

8. The college has been of some assistance to the Coal Mining Schools. Before these schools were handed over to the supervision of the collection was given by officials of the

colliery in every locality who taught in the evenings after a hard day's work. Now most of the teaching is done by selected teachers who have long practical experience in actual coal mining and who give their whole time to teaching. Under the old regime it was difficult for a man to get instruction in the schools much higher than that which would qualify him for underground manager in a colliery. Then he had to go to the correspondence schools for most of the additional instruction required for manager's papers or work it out by himself. Now he can get all the knowledge he needs for a manager's certificate in the Schools themselves.

The college has held summer courses for the instructors in the coal mining schools where they have been better prepared for their work of teaching their subjects.

8. and 9. The teaching in the mining schools has been on the average, so much higher quality that the examiners have been able to set a higher standard for colliery certificates and thus make these certificates worth more.

10. The college has no special instructor in coal mining itself but has a Professor of Mining and an instructor in mining. The Professor in Mining graduated in Mining Engineering from the Massachusetts Institute of Technology in Boston, reputed to be the best engineering college in America. He has had practical experience in Montana, British Columbia, and Mexico, as Superintendent and Manager. The instructor graduated in Mining from Dalhousie College and took a special post-graduate course in mining at Columbia University in New York and has had practical experience in Nova Scotia.

It might be well to state here that it is not the claim or intention of the Technical College to turn out a mining engineer. A graduate from the College is given a degree as a Bachelor of Science and not a degree as a Mining Engineer. He is supposed to be only an engineering "cadet" who has received a thorough education in applied science and who can become an engineer only after a number of years of practical experience in his chosen line of engineering. Most people make a mistake in supposing that the college turns out full fledged engineers.

I may also state here that nearly every one of the mining engineers in the college works in the coal mines of Nova Scotia in the summer at regular underground work or in the metal mines of the West and thus gets good practical experience while studying.

11. I do not understand or remember the reference made in this question but will be glad to hear it if more details are given.

Here again most people make a mistake in the purpose of the College. It is intended to give the students a thorough training in the fundamentals of mining engineering and not to make them specialists in coal mining. They are just as well fitted to start in their practical life in metal mining, in steel works or in coal mining. Metal mining seems to offer the graduate a better field on account of more rapid promotion and more pay. All the students get a special course in coal mining and are able to pass the examinations for manager's certificate when they graduate if they

(Continued on page 17.)

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—in the Maritime Provinces.

Advertising rates, which are moderate may be had on application.

Subscription: 1 year Single Copies 5 cents

R. DRUMMOND, PUBLISHER.

STELLARANTO, N. S.

Sept 27 1911

MINERALS COMMISSION

The suggestion is made by the Mining Review that the government of Nova Scotia should appoint a commission to inquire, as we take it, into the prospects and possibilities of successful gold mining in Nova Scotia. To some this may appear a peculiar request in view of the fact that gold mining operations have been conducted in Nova Scotia for over half a century. And if all stories are true, and taking the later years' operations with the earlier, it has cost two dollars to procure a dollars worth of gold. Of course some have made money out of gold mining but the great majority of investors in gold mines have lost. Speaking from his own experience the writer knows of over half a dozen concerns who managed easily to sink the money of the shareholders in a fruitless effort to produce gold in paying quantity. Of course all these failures may have been due to bad management or unscientific methods of working. We have our own opinions but refrain from expressing them. It is possible a commission might do some good. Geologists who have gone carefully over the field are inclined to be optimistic, and old gold miners are not without hope. If the work of a commission would result in inducing moneyed men to take up mining energetically then its appointment will have been justified. The government did make an honest attempt to find out whether gold abounded or not, and for this purpose brought to the country one who had the reputation of being a foremost expert. From some cause, either from the inefficiency of the honorarium or from inability to give sufficient time for inspection, the report was not published. We believe this was done at the request of the gold miners, who maintained that no expert, however great could correctly report on the possibilities of gold mining who covered the field with a hop, step and jump, or in other words skipped from point to point with the speed of an aviator. The report of Mr. Ricard was so contradictory of the opinion held by the gold miners and by members of the Canadian Geological staff that the government was wise in suppressing publication until further inquiry was made in the matter. In the matter of minerals the government may not have done all that it might have done, but there is no gainsaying the fact that it has gone far to meet the views of the gold miners when these were put forward in an intelligible manner. The curious thing is that the concessions sought and obtained have not been gen-

erally taken advantage of, if at all. While we have no objection to a commission with a single eye to gold, we would much rather that the government could see its way to appoint a commission whose object would be to make known what really Nova Scotia has in the way of economic minerals. What minerals has Nova Scotia, really of commercial value.

Rubs by Rambler.

Though people have for long known that it is the most unsafe thing to predict election results, many of them will persist in prophesying. Age does not exempt one from this folly nor does experience or past failures. Why even the good old Sir Richard Cartwright delights in a rubber now and again. He said that Borden had only one chance in a hundred of winning. In this case the one had it. There were scores of predictions by eminent persons, from Sir Wilfred down, that the government would be sustained by about the same old majority, C. H. Cahan's prediction was about the closest I have come across. It was that Borden would have a majority of twenty-eight. A majority of the tory predictions fell short of the result, though a few were over the mark. The Morning Chronicle, as in the Finn case, made a terrible fiasco of prophesying. There was not the ghost of a chance of the tories getting as many as they had, in fact if they got any at all it would be a surprise. The result of the elections is a surprise to the grits and possibly to the tories though they now declare they knew all along there would be a change. As for our own little province reciprocity as a bait did not allure the fishermen. Lunenburg, the leading fishing county, so far as fine fishing vessels and good equipment goes, went against the pact, and Kings, as good a farming county as in the province, would have nothing to do with it. And there is Shelburne, the Finance Ministers own county, and a fishing centre to boot, in turning the minister down turned down the pact. What is the matter with the people. Staid and stubborn papers like the Montreal Witness gravely asserted that reciprocity was the peoples' policy and that it was opposed by mandarins, monopolists, and money changers. Well, in the light of events it only remains for me to conclude that there are more of the latter than of the former the people in Canada. The RECORD, not being a political paper, viewed the election and took the result, I am sure, philosophically. I am sure it extends its sympathy to all disappointed ones. The grits must feel put out, but they had at least this consolation, and is it not a great consolation, they were saved the affront of a further parade of the Chronicles ill-mannered rooster. That of itself should be ample satisfaction for the loss of a few seats.

Oh, but elections are funny things. Here in Nova Scotia we have the counties most likely to gain from the pact going square against it, and three of the counties that it would not help, and might possibly harm going for it. Such is, or are, politics.

LABOUR AND THE UNREST.

Commenting on the proceedings of the Trade Union Congress held in Newcastle, Eng. end of August a foremost British Journal, among other things, says:

The trade unions believe in discipline. The Congress condemned unanimously the outbreaks of violence on the part of 'morganized men,' but expressed the belief that it was provoked and due in a large and military. There will not be universal agreement with the Congress on this point. It was deplorable that people should have been shot by the military during the recent railway strike, but there are many in the country who honestly believe that the presence of the soldiers saved a good many more lives than were destroyed. It was, however, to be expected that the Congress would condemn the action of the Government in utilising the military to keep open the railway lines. The Congress could do no other, but the resolution they passed shows that the trade unions would have condemned the use of the soldiers even if no single shot had been fired. They are obviously of opinion that the soldiers broke the strike because they interfered with picketing. Now there is more than one kind of picketing. Nobody in his senses objects to peaceful picketing. But can the trade unionists honestly say that all the picketing that has taken place this last twelve months has been 'peaceful'? Without the right to picket strikes would be impossible, and the workers have shown this week that they will not give up the right to strike as the ultimate weapon. It is difficult to see what law could take away the right to strike. No Government in this country dare ask Parliament to pass a law to say that a man must go to work whether he likes or not. What good government will see to do is to prevent disorder.

But this Congress, while insisting on the right to strike, has also expressed the view that conciliation and arbitration have proved more or less a failure. Now there are only two possible policies in trade disputes. On the one hand we have conciliation and arbitration, and on the other hand war. Is it always to be war? Surely the common sense of the community will find some better way. It seems almost necessary to have an exhaustive inquiry as to why conciliation and arbitration have failed. The main reason, in the opinion of the men, seems to be that the process takes too long. Surely some method can be found of speeding up Conciliation Boards and such-like machinery. Meanwhile, both capital and labour are becoming better organized, and are arming themselves for a fight which both seem to think certain. During the last few weeks the membership of the trade unions has grown apace, as it always does when the Unions are engaged in vigorous fighting. There is, by the way, a good deal to be said for the contention of the Union leaders that they really represent a very large proportion of non members of the Unions. Very often the bulk of these are men with very poor wages and it does not need very much knowledge of the working classes to realise that a man with 17s. a week and a family to keep cannot very well spare even his Union subscription.

No one could listen to the debates during the early part of this week without wondering whether capital and labour must always be at war. Is there no other way of adjusting their relations but continual strife? In the present temper of the trade unionists it will take a good deal to make them even look at proposals for conciliation and arbitration, and it is certain that no-

body could at the moment persuade them to approve of compulsory arbitration. What might be possible if it is an application of the principal, 'Arbitrate before you fight.' Very few strikes or lock-outs are fought when both sides are willing to listen to the peace maker, and there are many disputes even now that are settled by friendly intervention. If it were a generally understood rule that in case of a possible conflict between employers and employed a quick investigation and report could be had from an entirely impartial body, it would, while preserving the ultimate right to strike, make prolonged fights arising out of disputes extremely rare. It is still true that public opinion is the greatest of all factors in deciding disputes, and public opinion would always be powerfully influenced by an impartial judgement on the merits of a dispute before temper had been aroused by active hostilities.

THE EFFECTS OF CHANGE OF PRESSURE.

(Written for MINING RECORD by John McDonald, Inverness, C. B.)

If all the fire damp evolved by the coal were to pass straight out of the upcast there would be little need to pay attention to barometer changes and thermometer readings. The fact of the matter is that an extensive mine has large spaces where fire-damp and black-damp can lurk unobserved, but susceptible to atmospheric changes. A large mine contains acres of goaf, or gob, where the coal has been taken out, and the roof allowed to come in, and it is here that the fire-damp finds its way and lodges, only requiring a sudden drop in the barometer to convert it from a roof of the mine to a very immediate danger. Should the reservoir for gas, by long contact with the gases given off from the coal, therefore a sandstone may become impregnated with these gases; and the same is true. Now let us find by an example the effect of a drop in the barometer of, say, from 30 inches to 25 inches. Consider the effect on 100 acres of gob in a three foot seam. One hundred acres can be expressed as 4,356,000 square feet, so that the volume of coal worked out over the area was 13,068,000 cubic feet. Some of this will be taken up with pack walls and stowing of some by the slight expansion of the rocks, owing to the released pressure, and some will be lost by subsidence of the strata, but a large part will remain as cracks and cavities above the roof filled with a mixture of fire-damp, black-damp and air.

Let us take as a low estimate that of the original 13,068,000 cubic feet 20 per cent.—i.e. 2,613,600 cubic feet—is now occupied by the mixture of gases. It is a well known physical law that when the pressure on a gas is altered—its temperature being kept the same—the effect on the volume may always be known by means of the familiar $p \times v = \text{constant}$. Applying this law to our present case we find that if the atmospheric pressure were to drop from 30 inches of barometer to 25 inches of barometer our original volume of 2,613,600 cubic feet of gob gas would take up the space of about 2,800,300 cubic feet; in other words there would be an increase in volume of about 186,700 cubic feet, and this amount

would make its way into the road ways, and working places of the mine, to be carried away by the ventilating current. The gob gas in some of the mainland mines contains about 8 per cent fire-damp. Taking this figure we find that of the 186,700 cubic feet under consideration 14,936 cubic feet would be fire-lamp.

This amount of explosive gas would be thrown into the workings whether the drop of 2 inches in the barometer took place in two hours, or in a week, but the amount discharged per minute would be very different in the two cases. Suppose that 20,000 cubic feet of air were circulating about or near the 100 acres of gob gas, and the barometer dropped from 30 inches to 28 inches in two hours the percentage of fire-damp in the return of the district would be increased by 0.63 per cent., an amount which would change a safe colliery atmosphere into a very dangerous one. On the other hand had the fall in the barometer taken a weeks' time the fire-damp in the return would only be increased by 0.067 per cent. which is very small, so we see that the question of time enters very largely into consideration, and that what really matters is not the amount of drop but the rate of drop of the barometer. Had we taken the height of the barometer as 28 inches instead of 30 inches, and that it had fallen to 26 inches, we should have found that instead of 14,936 cubic feet of fire-damp there would have been 16,084 cubic feet thrown into the workings. This goes to prove that the lowness of the barometer has some small effect on the volume of gas ejected and that a fall of a certain amount in the barometer, when it is high, is not so dangerous as a fall of the same amount when the barometer is low.

It cannot be expected that the gas pent up in the waste, and elsewhere, will make itself apparent immediately on a sudden fall of the barometer. It has many different roads to traverse before reaching the open roads and workings, and accordingly the maximum output of gas will occur some little time after the minimum barometer reading. The foregoing conclusions, regarding the effect of atmospheric changes on the gas output of a mine have been verified by the writer under actual working conditions in the old Drummond Colliery, Westville. They have also been given a far more striking proof in the number of explosions caused by fire-damp being drawn into the workings from the goaf, and elsewhere, by a sudden fall in the atmospheric pressure. It has been shown that one per cent. of fire-damp is dangerous if coal dust be present. Watering road-ways of the mine, to lay the dust, is a secondary consideration; the detection of fire-damp is a primary one and should always be treated as such.

BRITAIN'S COAL SUPPLY.

Referring to an address, by Sir William Ramsay, at the annual meeting of the British Association, the British Weekly says:

"In one of the least known but most bitterly sarcastic books, 'The Mudfog Papers,' Charles Dickens gave the views of science and scientific men held in his period by the man in the street. Long after Dickens the same spirit of contemptuous ridicule was strong among many. But now, when Sir William Ramsay informs us from the Chair of the British Association that

we are in no very remote danger of exhausting our coal supply, he is heard with attention and respect. We know as yet but one practical source of energy, and that is coal, and our supply of coal is limited. Sir William Ramsay calculates that if the rate of working increases as it is doing now, our coal will be completely exhausted in 175 years, a span in the life of a nation. The President tells us, indeed, that the greater part of the energy potential in the coal mine is wasted, and that we can economise, both in the domestic grate and in the factory chimney. But even if we reduce or altogether avoid waste, we do no more than retard our impending doom. For Sir William Ramsay tells us that we cannot expect much help from other sources, neither from the tides, nor the winds, nor water power, nor solar heat, nor radio-active substances. All-rotation would do some good, but timber can hardly be used economically as an alternative to coal. Perhaps most of us will be content to believe that the mighty energies of scientific men will not work 175 years longer without providing us an effective remedy. It is many years since Stanley Jevons raised the alarm, and commended the coal question to the study of all intelligent persons as a problem "of almost religious importance." He made little impression at first. Punch disposed of the subject as follows:—"Mr. Beete Jukes, F. R. S.—at least I think it was Mr. Jukes—said he had got something to say on coals. He proceeded to make a statement. Professor Tyndall offered to haul Mr. Jukes over the coals for that remark (I didn't catch it, but Jukes did). The discussion was at its height when it suddenly occurred to me that I could sing 'Old King Cole,' I rose." But many among the public were alarmed, and made more or less brilliant suggestions. One was that copies of the Times, printed as they were on good paper, made most excellent and efficient substitutes for blankets, and should be universally used by the poor. Such men as John Stewart Mill and Gladstone handled them bravely. Mill considered that Jevons had proved his case, and advocated a scheme, afterwards proposed by Gladstone, for the extinction of the national debt. Since then the subject has been intermittently discussed, but without much result. As we cannot legislate for a thousand years hence, so we shrink from legislating for two hundred years hence. We cannot tell what circumstances may then be in operation, and so, wisely or unwisely, we set aside prophetic legislation and look to no further horizon. But if scientific men will tell us how we may reduce our coal bill without suffering we shall all of us be exceedingly thankful.

ELECTRICITY AND EDUCATION.

Experiments are being carried out in Stockholm (Sweden) to determine the influence of electricity on school children. At one of the schools fifty pupils have been divided into two groups. They are identical in point of health, height, and weight, and are placed in two class rooms of the same size and having the same amount of light. Exactly the same teaching is given in each class-room, but one of the class-rooms is subjected to discharges of electricity, and the other is not. Though the experiment is not yet concluded, it has been found possible already to report that the "electrified" children have responded by showing greater mental and physical development than the children not so treated.

AROUND THE COLIERIES.

The day after election Dominion Steel stock went up five points, and Nova Scotia Steel a couple of points.

The output of iron and steel from the Nova Scotia Steel & Coal Co.'s works at Sydney Mines for August make a record. It is the largest since the plant started.

They now tell us we will be dominated by Ontario; formerly we were dominated by Quebec. Poor, poor little Nova Scotia, ever between the devil and the deep sea.

We have been asked if the change of government will affect the coal trade of the county. The RECORD has no fears on that score. Pictou will continue to get a fair share of all government contracts.

Mr. T. H. Cantley, General Manager of the Nova Scotia Steel & Coal Co. is presently in Wabana. Now that reciprocity is in the back ground the company will enlarge its energies and strive after largely increased operations.

Changes of government in no way affect the revenue of the stationary department of the MINING RECORD. The paper never asked and never received a cent's worth of printing for a federal government. In that respect we are quits with both parties.

The P. W. A. intend to ask for the expulsion from the mines of coal cutting machines run by electricity, not so much on the ground of security to life, it is said, as to the inability of the machine runner to do as much work as with machines run by compressed air.

Mr. Ralph Smith, who was leader of the Nanaimo colliery workers for many years, until the foreign order tried to create discord in the union ranks and who has been member for Nanaimo for several years, in the federal parliament, went down to defeat last Thursday. Ralph was a very decent chap and deserved a better fate.

The U. M. W. leaders, when that organization was trying to obtain a foot hold in Nova Scotia, gave as one reason why our miners should join the foreign order that wages would be raised to the level of United States miners. Two of the most important mining sections in the United States are W. Virginia and Illinois. The average yearly wage in the former during the past six years was \$531.00, and in the latter \$524.00 or say \$47.00 and \$44.00 a month respectively. For the past six years the average monthly wage of Nova Scotia miners has been \$50.00 per month at the least. And a strange feature in the case of W. Virginia is that while the wages are higher than in Illinois the former is free from the rule of the U. M. W., while Illinois is 'in the Union.'

The output of the Vale colliery suffered greatly during August from a scarcity of water. The rains of September removed this interruption and now work goes on steadily.

Some of the papers have fearful and wonderful ways of computing the tory majority. The Toronto Globe places it at 37, while an ultra tory paper places it at 65. The RECORD puts it somewhere between 46 and 51.

The liberal orators in Springhill came down like 'a hummer o bricks' on the editor of the RECORD, not for anything he had said therein, but because—well, just because. He was classed with Bourassa. That's going it some.

Everything now goes on briskly at Springhill. The P. W. A. has a good hold again. Our correspondent is rejoiced with the situation and delighted with the prospects. The output is very satisfactory though the cost of production is still high.

It is reported that during the past ten years the population of Nova Scotia has increased, and that this increase is confined to Halifax and the mining districts. This is what we expected, and we hope it will turn out that the better part of the increase is due to activity in coal mining, which we have maintained attracts population from outside as well as from within the province.

The chances of the shipbuilding plant going to St. John are weakened and the chances of it going to Sydney or Halifax strengthened by the advent of Borden to power, that is if a shipbuilding project is to be carried out. The member for South Cape Breton, though elected in the hope that he could bring influence to have the proposed plant located at Sydney, need not lose heart for whether in Halifax or Dartmouth, Sydney is bound to be benefited.

Efforts are being made to bring about a national strike of miners in Britain, and in consequence of the unrest the price of coal is advancing. An unofficial move to precipitate a national strike by bringing out the South Wales Miners was made by a committee of miners in the Rhondda Valley, but they did not meet with an encouraging response to circulars they had sent to other parts of the coalfield. 'Mabon' (Mr. William Abraham, M. P.) issued a manifesto warning the men against rash action, and reminding them that continual breaking of contracts and sporadic strikes would ruin Trade Unionism. The mineowners have consented to meet the Miners' Federation of Great Britain to discuss the question of minimum wage in abnormal places, in places where coal is so difficult to get that the miner cannot earn a fair day's wage on the piece rates. Apart from this, there is a movement gathering in volume among miners all over the country to demand a minimum wage of from 6s. to 8s. a day for all colliery workers.

AROUND THE COLLIERIES.

The heads of the steel companies in Nova Scotia are highly pleased with the result of the elections, however some may feel.

While there are many thousand idle men in the U. S. there is a dearth of labor at some of the Nova Scotia mines, and accordingly output is handicapped.

The annual meeting of the Grand Council of the Provincial Workmen's Association, which closed in Halifax last week was very successful. Messrs. S. B. McNeil, John Moffatt, and Ronald Nicholson were appointed to the respective offices of Grand Master, Grand Secretary, and Grand Treasurer. Mr. Thomas Pigott, the veteran P. W. A. man of Springhill, was appointed Grand Associate Master.

The six ton coal hoppers which were all the vogue in former years are now almost a thing of the past. The I. C. R. authorities are burning them up at a rapid rate and are substituting fifteen ton hoppers, and a car of larger size, between a hopper and a gondola. The Dominion Coal Co. has lately made an addition of thirty ton steel cars to its stock. The Acadia Coal Co. too is getting a lot of big cars for use in water shipments from the landing. Having cars of their own will enable the company to give quicker despatch to steamers and thereby save demurrage.

Owing to the rapid increase of business since taking over the Silliker plant, the Nova Scotia Car Works, Halifax, has found it necessary to duplicate its power plant. The original plant was supplied by the Robb Engineering Company, South Framingham, Mass., and the duplicate order has been placed with the same concern. The new installation will consist of a 600 horse power Corliss engine for direct connection to electric generator, three 200 horse power return tubular boilers with self-supporting steel smoke stack, five feet diameter, ninety feet high, also feed-water heater, piping and other accessories.

The members of the C. B. mining society being unable or disinclined to answer the questions propounded them in last issue we are forced to fall back upon the several deputy inspectors of mines, who ought to be experts on the subject. The copy of the agreement published in the press says:

1st. That the duty on all coal such as will pass through a half inch screen shall be fifteen cents per ton of 2240 lbs.

2. The duty on bituminous coal such as shall not pass through a three-quarter inch screen shall be forty-five cents per ton.

The question then is:—As some of the coal that will pass through a three-quarter inch screen will not pass through a half inch screen, what is to be done with this latter coal which at the collieries is classed as slack, or put another way, what is to be done with the coal over a half inch and less than three quarters.

Here are some of the demands of the school boy strikers in Scotland: "No home lessons", "Wednesday half holiday", "cushioned seats," and "a penny a week." There were pickets out who could shout scab, as good as any man, at the boys who would not come out. They did not stone the police but stoned the school windows with much success. "As the auld cock craws, the young yins learn."

The electors were asked by the press from Amherst to Sydney Mines, "What is the use of voting for a candidate who will sit in opposition to the government, what can he do, what can he GET. That's a poser for the members of the incoming opposition in C. B. and other counties. Of course the RECORD has no sympathy with the too prevalent practice of granting favors only to political supporters and constituencies.

"Ontario did the business, it does not want reciprocity, and it looks as if neither the farmers or the fishermen anywhere wanted it. The Dominion has heard the last of reciprocity as far as the liberals are concerned—at least WE HOPE SO."

A prize of fifty cents will be given to the first person, who has not previously read the above quotation, or heard of it, who will give the name of the author. Its awfully funny, and beats to pieces any quick change artist.

The one who made the following prediction may lay claim to be an honest journalist. His claim may well be disputed. A blind man could have read the signs of the times:

"According to the best and most reliable information available the polling should show something like the following result:

	Lib.	Con.
Maritime Provinces.....	27	8
Quebec.....	50	15
Ontario.....	40	46
Western Canada.....	22	13
Totals.....	139	82
Liberal majority 57."		

The P. W. A. intend asking the government for weekly instead of semi-monthly pay. In small works weekly pay is feasible, but in larger works it is attended with some inconvenience. The great question is: 'Will weekly pays tend to comfort and thrift.' The argument that applies to weekly would apply to semi-weekly pays. Fortnightly pays strike some as the golden mien, that is for workers who need not live from hand to mouth. If weekly pays would tend to less absenteeism, or idle time after pay days it would certainly pay the companies to give the weekly system of payment a fair trial. As a corollary to weekly pays it might be well to pass a law making the giving of credit a criminal offence.

The question was put to the writer: "What was the matter in the coal mining counties?" The reply

was, don't blame the coal miners; they voted fairly well against a reduction of the duty. Let us see how the vote went in the mining towns in the several counties.

The vote on reciprocity in the three mining towns in Pictou County was, for reciprocity 896, against 985. Majority against, 89.

The vote in Cumberland County, taking the mining towns and villages was against reciprocity.

The vote in Inverness, taking Inverness town, the only one in which coal mining is now carried on, was 213 for, to 307 against, a majority against of 94.

In Cape Breton the figures are, for 3856, against 4028, majority of 172 against.

We present these figures for the consideration of the new powers that be. They must not jump to the conclusion that the miners are indifferent to the tion of the duty on coal. The people in Sydney and the farming districts may have gone for reciprocity, and the same may be said of the farming districts in the other mining counties, but the miners should not be held responsible for these sinners. The prosperity of Nova Scotia depends on the coal industry and Nova Scotia did not do so badly for the new rulers.

Suppose the new government took off the eight cents duty on coal as proposed in the agreement in consideration of the alleged benefits to accrue to Nova Scotia coal mining by placing washed slack in the North and South C. B., Inverness and Pictou have to say in opposition to the proposal. Would they look upon the concession as equivalent to the eight cents reduction.

WIRELESS TELEPHONY.

For some weeks past experiments in wireless telephony have been conducted near Chepstow Britain, and their success has been so remarkable that it may be said wonders have not yet ceased. Indeed, the field of potentialities opened out by the discovery of voice transmission, without the aid of any medium but the natural elements themselves, is so wide that the wonder of wireless telephony is destined to beget still greater surprises in the near future. The discovery is but the beginning of a new era in utilisation of electric air currents. The man who has made the discovery is a young scientist, Mr. H. Grindell Matthews, who was at an earlier age than ever before recorded in the membership rolls of the institution. Mr. Grindell Matthews has been the first to demonstrate the possibility of transmitting the human voice over long distances by his high frequency tests near Chepstow, and the British War Office is already in close touch with him. Matthews has demonstrated to his own satisfaction the possibility of transmitting the human voice through all obstacles without the aid of wires. He submitted his discovery to a severe test in the presence of a number of experts. He was placed in the strong room of a big London commercial house and looked in with nine inches of armour steel, nine inches of fire-brick, and six feet of concrete between him and the outer world. By means of his small portable apparatus he carried on a conversation with an operator in another room on the other side of the building. So distinct and faithful was the transmission that the experts in attendance were actually able to hear the tick of his watch, notwithstanding the almost impenetrable mass between the two instruments. This wonderful success

convinced the inventor so thoroughly of the possibilities of the power he had been able to harness that he is contemplating a test through five miles of solid rock is between Chepstow and Tintern. In the meantime he is engaged in long distance tests, and on Saturday he succeeded in speaking from Beachley, better known as the Old Passage, over five and a half miles away, near the Severn Tunnel outlet, on the other side of the river. This success has met the condition laid down by the Government as the minimum distance that would induce them to acquire the rights of the invention for the nation.

Says Sir William Ramsay:—

The population of the British Isles is, roundly, forty five millions; we consume in our factories at least fifty million tons of coal annually, and it is generally agreed that the consumption of coal per indicated horse-power per hour is, on an average, about 5lb. This gives seven million horse-power per year, which Sir William estimates is the equivalent of about 175 million man-power.

Taking a family as consisting on the average of five persons, our 45 millions would represent nine million families; and dividing the total man-power by the number of families, we must conclude that each British family has, on the average, nearly twenty 'helots' doing his bidding, instead of the five of the Athenian family. We do not appear, however, to make it possible for the British Isles to support the population which it does. We have in this world only a limited supply of stored-up energy; in the British Isles a very limited one—namely, our coalfields. The increasing very steadily for the last forty years. In 1870 110 million tons were mined in Great Britain, and ever since the amount has increased by three and a-third million tons a year. The available quantity of coal in the proved coalfields is very nearly 100,000 million tons; it is easy to calculate that if the rate of working increases as it is doing our coal will be completely exhausted in 175 years.

Other potential sources of energy have been suggested, but Sir William is sceptical of the supply and the continual reliability of any of them in our climate. We might increase our forests for the sake of wood fuel. Germany and France each spends annually £2,200,000 on afforestation, and gains a net return of £6,000,000. We must rely chiefly on our coal supply, and we must learn to economise it. We can save millions of tons a year by substituting turbine for reciprocating engines, and replacing 'bee-hive' coke ovens by recovery ovens.

THE TECHNICAL COLLEGE AND SCHOLARSHIPS.

Dr. Welldone, President of the British Educational Science Section, in an address on the present state of education had strong words to say against making scholarships and exhibitions the privilege of the rich, though they were designed to remedy the advantages of the poor. Competition for scholarships in the field of secondary education has become so severe that scarcely any boy stands a chance of winning them unless he has been trained for years in an expensive preparatory school. So it happens that rich boys are generally the successful candidates, and they obtain pecuniary rewards for educational purposes which they do

not need. A case of drastic reform seems to be made out. It was, said Dr. Weildon, an urgent matter that, alike in the colleges of the Universities and in the public schools, the pecuniary benefits by which alone deserving boys could rise above their habitual surroundings, whether bursaries, exhibitions, or scholarships, should be strictly confined to the sons of the poor. But would the Bishop exclude the rich from competition? Supposing that the successful rich boy is content with the honour, and leaves the pecuniary reward to others, would there not be considerable advantage in the common competition?

Mr. William George, brother of the Chancellor of the Exchequer, at the close of the quarterly meeting of the Carnarvonshire County Council, of which he is chairman, gave a luncheon to all the members and officials. 'No intoxicants; no toasts,' was the special notice on the invitation cards. The firm of Lloyd George and George has never accepted a brief in connection with the liquor traffic. Once a firm of brewers offered a fee of 100 guineas for a single day's appearance at a local petty sessions, but the offer was refused.

(Continued from page 10.)

have had the requisite number of years of practical underground experiences required by the Board of Examiners.

The Professor of Mining is able to give practical instruction on coal mining in the Nova Scotia Fields.

13. The College offers this stimulus of providing scholarships for every county in Nova Scotia so that any ambitious young miner who wishes a College education may receive free education at the College.

14. The county scholarships give young men of small means the opportunity of getting their education free at the College. It might be mentioned that for the past two years more than half of the students at the College have received these scholarships and, further, that probably many of these students could not have gone to any College, without such assistance. A Majority of the students earn the whole or part of the money to put themselves thro College.

15. Any man who has secured a mining certificate will be credited with the full equivalent which that certificate represents. Unfortunately, perhaps, the certificates—which are for quite a different purpose than the College entrance examinations—do not entitle the holder to be excused from very much that is required for College entrance. Any man from any walk of life in the Province may come to the college and take any of the classes given if he has had enough education or experience to profit by the instruction.

16. A man holding the highest grade—Grade XII—from a county academy may enter the engineering course without any preliminary examination. If he holds a grade XI certificate he has only to take a minor examination in one branch of mathematics. If he holds a grade XII certificate he is also excused from one or two of the classes in the first year course.

17. The mining certificate of Manager is not wholly discarded or discounted. The reason that

it is not more fully credited is that this examination is for a far different purpose than the College examination. The former is a test as to whether a man is fit to take charge of a mine plant and men working at a colliery and get out coal with safety to the men employed and the mine itself. The latter is merely a test of a youth's general education.

18 and 19. A knowledge of only one foreign language is necessary to the obtaining of a degree of Bachelor of Science in engineering. A "mining degree" is not given by the College as heretofore explained. A knowledge of French or German enables a man to read in foreign periodicals the latest advances in practice of Belgian, French or German mining in some branches of which, especially in the application of electricity, they are ahead of British or American coal mining. It also adds to the general culture and education of the student just as a thorough knowledge of English literature and language does.

20. A knowledge of the higher mathematics will make the average man a keener, clearer thinker, more independent and more competent official. It helps any man to know more than his daily job demands. A man who has sufficient knowledge and experience to get a manager's certificate will make a better overman than one who knows only enough to get an overman's certificate. There is probably no subject that gives a practical man a better grip of things than mathematics.

21. Indeed one of the best objects of technical education is to prevent waste of life, material and time. Technical Education usually accomplishes this object to a greater or less degree, depending on the human and intellectual qualities of the man who is so educated.

22. The Technical College is striving to fill the bill and will keep on striving to the effect that it will probably do so more and more year by year. It is ready to learn where it has fallen short, from either its friends or its enemies, and will strive to rectify such deficiencies when they are pointed out. One must remember that the Technical College has been in operation only two years and that the results in education are not as tangible as in many other lines of human endeavor.

23. The "Advisory Board" of the College—or more properly the "Governing Board" is composed of one representative of each of the affiliated Colleges and the full professors on the teaching staff of the Technical College.

24. Of course the College is ready for fair cross examination at any and all times.

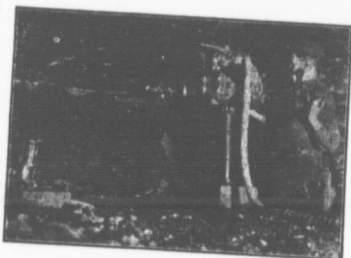
I have tried to answer your questions to the best of my ability and should be only too glad to have criticisms and suggestions for enlarging the scope of the college from those who are most closely associated or engaged in the coal mining industry or indeed from any others who wish to bring the great advantages of technical education within the reach of every young man engaged in the industries of Nova Scotia.

Yours truly,

F. H. Sexton,

Principal of the Nova Scotia Technical College and Director of Technical Education in Nova Scotia.

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A. B. C. (11th & 24th Eds)
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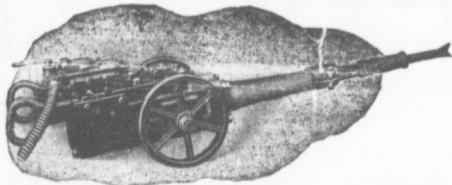
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WESTBOUND Superior Dir.		STATIONS.	EASTBOUND Inferior Dir.	
53	51		54	52
P. M.	A. M.	P. TUPPER JUNCTION	P. M.	A. M.
3 20	10 40	INVERNESS JCT.	3 57	11 00
3 25	10 35	PORT HAWKESBURY	3 55	11 11
3 17	10 29		4 08	11 20
3 00	10 12	PORT HASTINGS	4 13	A. M.
P. M.	10 07	TROY	4 25	
9 57		CRESSBUSH	4 38	
9 54		CRAIGMORE	4 50	
9 27		JU DIQUE	5 05	
9 06		CATHERINES POND	5 18	
8 55		PORT HOOD	5 33	
8 41		GLENCOE	5 53	
8 35		MABOU	6 16	
8 29		GLENDYRE	6 28	
7 50		BLACK RIVER	6 25	
7 25		STRATHLOANE	6 48	
7 12		INVERNESS	7 10	
6 55			P. M.	

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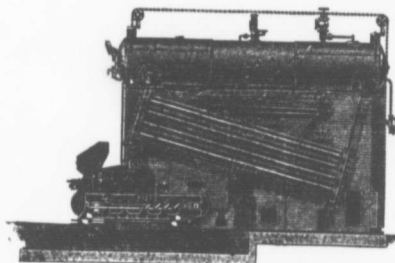
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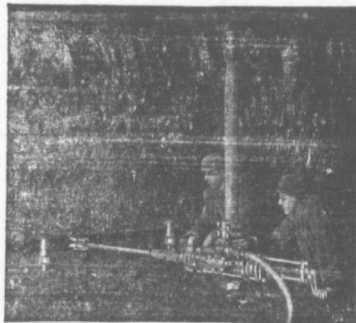
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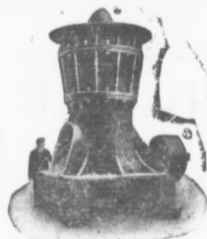
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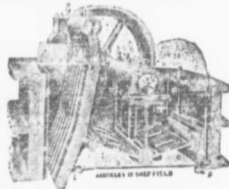
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