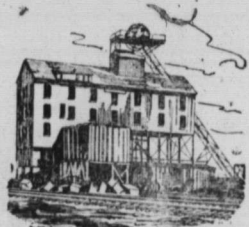
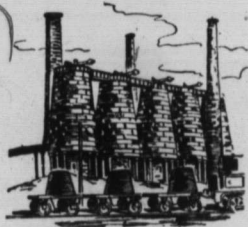


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MARITIME MINING RECORD AND COAL AND METAL TRADES JOURNAL



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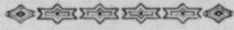
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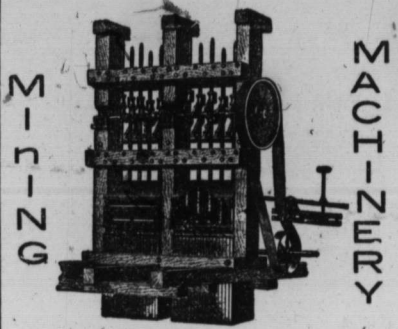
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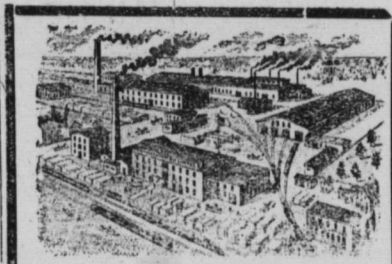


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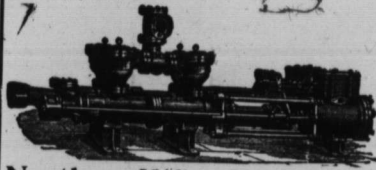
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ROCKMANA,

**A Strong, Full Flavoured,
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—TEA—**

Lord Roseberry is always a charming speaker on general topics, and we feel that his graceful tribute to the coal trade made lately at the opening of a miners' cottage hospital at Bishop Auckland ought not to pass unacknowledged. His lordship expressed a just sentiment when he said that no army, no class of our nation deserved so much the sympathy and admiration of those who are interested in the welfare of the empire as those who are engaged in getting coal. His lordship went on to twit a certain sort of philologist with the idea that everything should be done by State help. He said that the State in these days is constantly appealed to do everything for us from the cradle to the grave. But he pointed out that the true greatness of any people must be built upon its independence and self-reliance. He was therefore glad that the miners of that district where the hospital was to be, would help to support it.

If you are a **GOOD COOK** you will **APPRECIATE**

—the—
FRAGRANCE & FLAVOR which

Sovereign Flavoring Extracts

will impart to your cooking. Do not lose time and patience experimenting with worthless and unreliable goods, when you can get the best from your Grocer by asking for **SOVEREIGN Brand**.

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The....



MARITIME MINING RECORD



VOL 2—NO. 8 STELLARTON, N. S. — NOVEMBER 8TH '99. NEW SERIES

Browne's Vacuum Bailing Tank.

(PATENTED)

The handling of the water which slits through and flows into the opening when sinking a shaft is frequently a source of delay.

The usual practice has been to lift and force the water to the surface by means of suction and lift or force pumps with reciprocating buckets, pistons or plungers operated by steam compressed air, electric motors, etc., or by rods actuated by steam machinery on the surface.

The pump is placed in the shaft 15 to 25 feet above its bottom and draws the water by suction through a strainer and suction hose to the pump cylinder, whence the bucket piston or plunger lifts or forces it upward.

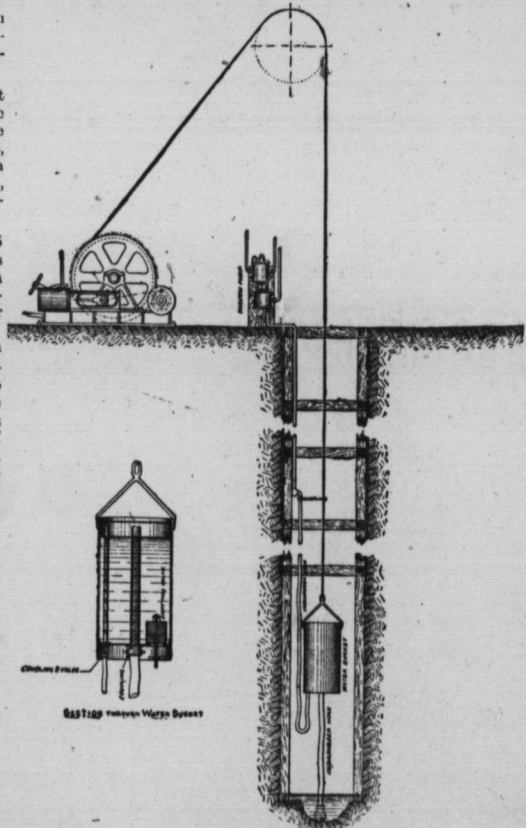
While the work of sinking is in progress, it is not practicable to provide more than a very small sump in the bottom of the shaft for the water to collect in and to pump from; the pump must therefore adapt itself to draughts of air, water, mud, sand, etc. resulting in much wear to the reciprocating parts and necessitating frequent re-packing, repairing and delays.

The pump must be lowered from time to time as the work progresses and the water columns and power supply pipes must be extended and re-connected.

During blasting operations, the pump must be removed or at least protected by a bulkhead of heavy timbers otherwise serious injury to the pump from flying missile is very probable.

The loss of time thus caused by handling, adjusting, etc. is no inconsiderable item of expense of sinking the shaft.

After the shaft is completed a deeper sump may be provided from which the water may be dipped by means of



(Continued on Page 18.)

MINING QUESTIONS AND ANSWERS.
SELECTED.

Q. 1.—What do you understand by the term Coil Friction? How do you calculate the amount? Give any examples where Coil Friction is found useful.

A.—The term 'coil friction' means that when a rope or other band is coiled around a cylinder or drum, motion on the part of either rope or drum produces friction. For one complete coil a force of one pound at one end of a rope will balance a pull of nine pounds at the other end. As the number of coils increases the friction multiplies itself by nine for each coil. For example, the friction for one coil as stated is nine; for two coils, 81; for three coils, 729; and so on. The most common examples of 'coil friction' are seen in a mine where the haulage is done by endless rope.

The branch ropes will be seen coiled $1\frac{1}{2}$ or $2\frac{1}{2}$ times round the driving wheel, and this gives sufficient resistance at the wheel to drag the whole length of rope and its load along the road.

We always see a pit winding rope clammed to the drum shaft; there is really little strain upon the clam, and there are always three or four coils of rope on the drum when the cage is at the bottom, and these supply sufficient pressure on the drum to sustain a big weight.

Q. 2.—Describe the proper positions in which 'Props' should be set and 'Checks' or 'Cogs' built in working a seam in Steep Measures.

A.—When setting props to support the roof in inclined seams, two forces should be taken into consideration; first, the crushing force at right angles to the inclination; second, the force which bears down from the high to the low level. Therefore I think the best position to set timber is not exactly at right angles with the dip of the floor and roof, but a little uphill from that position. Where checks are necessary, I would build them at right angles to the inclination, for two reasons. First, the pieces of timber forming the checks are generally two feet in length, when these are crossed at right angles they have an area of four square feet top and bottom, thus it would be impossible for the down hill force to change their position. Second, if built in the same position as the timber is set, the inclination of the checks at the top and bottom would not correspond with that of the seam, consequently pieces would have to be put in top and bottom to tighten them, or to bring them to that inclination, this would not be as strong a check as the one built at right angles with timber of equal dimensions. If the checks are erected to stand for a length of time, the space in the interior should be filled with dirt, this gives additional strength. Some prefer timber set at right angles to the inclination.

Q. 3.—What shape and quality of Rope would you adopt for deep winding, and why? What precautions would you adopt to have a good rope and not to overload it?

A.—I should adopt the round rope in shape, and the quality to be of the very best character, especially if the men have to be wound up the same shaft, as too much safety cannot be obtained where the lives of men depend upon the same. The round rope is said to cost half as much as the flat one, while it lasts twice as long. Some ropes are made to taper towards the lower end for the purpose of lessening their own weight, ropes as a rule being so heavy a load in them-

selves, but my preference is given to the round rope with a circumference uniform, as at the tapered end it requires much strength on account of the load being such a dead lift upon the engine at the commencement of the wind.

Lang's patent lay, and Lock Coil ropes, seem to have the most advantages, but I prefer Lang's patent lay, the other being more suitable for conductors. In the patent lay rope the strands have a uniform twist and the same can be examined from the top of the rope which is of great importance, for in the examination of some ropes defects may be present and yet cannot be detected on account of the twist.

The precautions I would adopt to have a good rope and not to overload it would be as follows:—I should make ample provision between the safe working load and breaking strain, as the rope carries the cage, chain coal, &c., besides its own weight upon the engine. The formula for calculating the circumference of a rope with its own weight included is as follows:—

C = Circumference of rope in inches.

L = Load—full cage and chains in tons.

M = Factor of safety.

X = Figure denoting kind of rope used.

F = Depth of pit in fathoms.

$$C = \sqrt{\frac{L}{M} \frac{P}{1.2 \times 2240}}$$

The safe working load should not only be the weight wound up on an average wind, but the pulleys, ropes, &c., which have to be taken down the shaft should be calculated. Also precaution should be taken not to let the rope bend on too small a circumference; it should also be well greased, and frequently examined to comply with C. M. R. A., then, again, it should not be jerked at commencement of wind, as this tends to shorten its life. To have a good rope we should observe that it is flexible, and the matter forming the strands should have an equal and uniform twist, as stated before, also to have elasticity in the material, and also of good tensile strength. Then, again, the construction of the rope should be such as will stand both a side or full pressure, and not be injured by the same. If the above precautions be adhered to we should have a good rope, and also no necessity to have it overloaded.

Q. 4.—Describe how you would timber a road 9ft. wide and 7ft. high.

A.—In moderately good ground I would put in sets of timber (larch preferred) 2ft. apart, the head-trees 10ft. long, to allow for end hold, the forks 7ft 3in. long sunk in the sollar, which keeps them in position. I would collar the forks, as the collar prevents the head tree from rolling. To prevent the forks from slipping out at the top I would put in a hog or short plug of timber, which is fixed in the head-tree, to keep the roof and sides secure. I would have spiles 2in. thick, 6 to 8in. wide, and from 4 to 6ft long, made of Norway pine or larch. These are placed over the top and along the sides of the level behind forks. This is an ordinary method of timbering in the iron mines of North Lancashire, and gives very fair results. Additional support is given by putting the sets close together, which is called solid timbering.

THE DOMINION IRON AND STEEL COMPANY.

A few weeks ago in consequence of the sinking of a steamer in the Sault Ste. Marie river, by which navigation was suspended for about a week from all Lake Superior to lower ports, great distress was felt, especially by the Chicago, Cleveland, Buffalo and other iron furnaces because of the interruption of their supplies of ore; and this emphasizes the fact that although American furnaces that depend upon ore mined in the Lake Superior region enjoy remarkable facilities for obtaining them, there is always a possibility of interruption through just such incidents as that here alluded to.

Their ores are exceedingly rich in metallic iron, their mines are easily worked, they are contiguous to good harbors and deep water, their ore-carrying vessels have very large capacity and are speedy in their movements, and the facilities for loading and unloading and otherwise handling ore cannot be excelled, perhaps not equalled anywhere. It should be observed, however, that the locations of these lake port furnaces are such that they are not contiguous to their sources of supply of either ore or fuel and that water transportation is possible to them only about eight months of the year. It should also be observed that under the advantages possessed by these furnaces, and in the face of the disadvantages, the iron industry and the collateral trades incident thereto in the lake regions of the United States, have assumed the most remarkable importance, and have contributed to a great extent in placing that country far in the lead of all iron producing nations.

Whatever may be said of the lake regions and centers of iron production of the United States, considering their facilities for production, may with equal force be spoken regarding the lake regions and centres of Canada, for if we are so inclined we can draw upon these American sources for our supplies both of ore and fuel, the water facilities being common to both countries; but it is only a matter of time when our own iron mines bordering on Lake Superior will be opened up; and the same may be said of mines in the more eastern portions of Ontario. Of course we know that ore from some of these mines is now being used in both Canadian and American furnaces.

Great as are the possibilities of Ontario in the development of an iron industry similar to that of the United States bordering on the Great Lakes, those of Nova Scotia are infinitely greater in that the supplies of both ore and fuel are cheaper, more accessible and not handicapped by a limited season during which water transportation is available; and it really seems that the recently organized Dominion Iron and Steel Company, who are now pushing the construction of their new furnaces and other works in Cape Breton, having control of all the capital they may require, will soon be in a position to manufacture iron and steel at lower cost than any other concern in the world. In addition to the command the Company have of most of the known iron ore deposits in different parts of Nova Scotia, and in New Brunswick also, most of which are of superior quality, they also own or control some very remarkable deposits in Newfoundland that are contiguous to deep water harbors that are accessible the year round. Nothing has contributed so much to the cheapening of iron in the West as the increase in size of the vessels that navigate the upper

lakes. It is well known that the larger the cargo a ship can take the cheaper freight rates will be. But there is a limit to the size of ships that can go through the Sault canals and they would have to be greatly enlarged and the lake harbors would have to be deepened at enormous expense, before boats drawing twenty-four feet of water, such as can reach the piers at low tide, in a great many harbors in our maritime provinces and in Newfoundland could be accommodated. Indeed these provinces abound in magnificent harbors capable of accommodating not only the largest ships now on the ocean but much bigger ships than any yet built.

Ore from the Lake Superior mines can only be shipped by water for about eight months of the year, lake navigation being closed during the winter. There are thirteen harbors in New Brunswick and Nova Scotia open throughout the year, viz., St. John and St. Andrews in New Brunswick, and Halifax, Lunenburg, Yarmouth, Annapolis, Barrington, Liverpool, Lockport, Lunenburg, Parrsboro and Shelburne in Nova Scotia, besides a host of good harbors which are open nine months of the year. The iron ores in every section of the Maritime Provinces are within easy reach of seaports and could be transported to Sydney or Lunenburg at all seasons of the year.—The Canadian Manufacturer.

BIG CONTRACTS.

One of the largest contracts ever placed in Pittsburg is that given to the Riter-Conley Manufacturing Company, of that city, for the building of a steel plant for the Dominion Iron and Steel Company, at Sydney, Cape Breton, Canada. Some time ago the Riter-Conley Manufacturing Company took the contract for four blast furnaces for this concern, each to have a daily capacity of about 400 tons. The Riter-Conley people took the contract for all the work on these furnaces above the ground, the price being close to \$2,500,000. This has been followed by the placing with the same concern of a contract for the building of a steel plant for the Dominion Iron and Steel Company, the contract price being close to \$2,500,000, or \$5,000,000 for both contracts. The contract just placed calls for everything necessary in the way of mills and furnaces for the immense plant, and to make it complete and ready for operation. It includes ten 50 open hearth furnaces and a large blooming mill, the latter to be built by Mackintosh, Hemphill & Co., machinery builders in Pittsburg. In addition, all the necessary machinery needed to operate the plant will be furnished by the Pittsburg concern. It will be eighteen months before this large work is ready for operation, but the work will be pushed as fast as possible.

The comparative statement of pauperism which has been issued by the Local Government Board supplies figures for England and Wales over a period of forty-three years. In 1857, taking the month of July, there were in every one thousand inhabitants 42.2 paupers. For July of the present year there were only 21.2. It is no spasmodic improvement; down the whole long range of years this levelling up of the masses and reduction of pauperism has been ever-fading and regular.

MARITIME MINING RECORD.

The MARITIME MINING RECORD is published the first and third Wednesday in each month.

The RECORD is devoted to the Mining and Manufacturing Industries of the Maritime Provinces.

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

Subscription \$1.00 a year. Single Copies 5 cents.
R. DRUMMOND, Publisher.

WEDNESDAY, NOVEMBER 8th. 1899.

RECORD'S POINT OF VIEW.**WHAT THE DOMINION COAL COX. IS DOING.**

Whatever might be his reception were the business of one, in approaching the officials of the Dominion Coal Co., to ask for an increase in wages, I am not in a position to say, but nothing can exceed the courtesy with which he is met, when he goes simply in quest of information. Even when the questions put may be a little 'close', it is not conveyed to one even by a look that the question verges on the impudent. The General Manager, Mr. Donkin, busy man as he must be, makes time to receive every caller, and his assistant, Mr. Johnstone, tries to make clear to the dullest comprehension points on which the questioner is not clear. And what may be said of the 'chiefs' may be said also of the Superintendents Messrs McVey, Mitchell, Brown, Hudson, Christianson and other officials.

The total shipments of the Dominion Coal Co. for ten months ending October reach the large figures of 1,293,716 tons. The shipments for the whole of '98 were 1,118,241 tons. From this it is seen that the shipments for ten months of '99 are 175,000 tons greater than the shipments for the twelve months of '98. Assuming that 207,000 tons will be shipped during Nov. and December, and nothing but an accident will hinder this, then the total sales for the year will reach 1,500,500 or three hundred and eighty two thousand more tons than in '98. This is a phenomenal increase and the more astonishing seeing it is the increase of one coal company alone.

The shipments to the States are gradually increasing. These for Oct were not so large as in the previous month, but that was owing to there being a large stock on hand in Boston, the accumulations of previous months when comparatively few ovens were lighted. From this out, or, more correctly speaking, from the close of the St. Lawrence navigation, which occurs about the middle of this month, the shipments to the United States will show a remarkable increase. Some time ago it was stated that four of the Turret boats, in addition to the Company's own vessels, would be employed carrying coal to Boston this winter. Instead of four Turrets there are six that have been chartered, viz Turret Bell, Turret Crown, Turret Bay, Turret Chief, Turret Court, and Turret Age. The average carrying capacity of these boats is 3003 tons each. Each steamer it is calculated will make four trips a month carrying on the four trips 12,000 tons, per month. The six will carry 72,000 tons per month not taking into consideration the quantity to be carried by the smaller class of steamers. The shipments

to the U. S. should reach their best about Jan'y. It is likely that one of the Turrets will be a month late going into the Boston trade as she will be employed during that time in carrying coals to Halifax, which has been a little neglected by the company the past season. During the winter and next spring months it is probable that 100,000 tons of coal per month will find its way into the United States. This means at least half time for all the collieries in getting coal for shipments. But beside the coal to be shipped there is that to be banked. The International mine will bank during the winter about 45,000 and the big dump at Glace Bay will receive from 250,000 to 300,000 tons. Between shipping and banking the collieries should be kept fairly steady during the winter and spring months, or until navigation again opens.

The company, in view of the largely increased demand, when the new Steel Works are once started, are taking time by the forelock and making preparations for erecting machinery to make coal suitable to use in the coke ovens now in course of construction at Sydney. For the Sydney coke ovens crushed coal or in other words, artificially made slack coal will be employed. It may be thought this is rather an expensive process to employ to get slack coal for coking purposes. Really it is its cheapness that commends it. The natural—so to speak—slack of the Cape Breton coals contains all or nearly all the impurities. If round coal is used, the impurities which go into the slack, will still be there. If slack coal be used then it has to be washed. By means of Jeffrey desintegrators coal will be made suitable for coking, and free from impurities,—which will go into the duff, and be either washed or thrown away. This crushed coal, then, will be better than round coal, and of course much better than slack, as it will contain the smallest quantity of the impurities, interfering with the production of good coke. These Jeffrey disintegrators have a capacity of from 60 to 120 tons per hour. Four of them will be put up at Dominion No. 1. This is more than necessary, but it is better to have a spare one in case of breakage. It is possible that a couple may also be placed at Caledonia Mines. It is expected much better results will be had from the disintegrators than from the washing plant, as the weather has no effect upon the former.

Two or three years ago there was talk abroad of the company sinking a shaft with a capacity of 10,000 tons per day. It is now denied that the company ever had any such intention. There was great talk at one time of the company centralizing their works and doing up a few more collieries as they are said to have done up Victoria. From the first talk of this great central shaft the RECORD recorded its protest, and we are now glad to state that if the company ever had any such intention it has been abandoned. And it is well that it has, for the axiom in reference to carrying all ones eggs in one basket applies with force to coal mining. The company's present policy is to have numerous openings to its coal seams, even if that does mean the payment of an extra boss, an extra clerk, and a man or two extra.

A new slope is now being sunk to the Emery seam. The situation of the slope is three quarters of a mile or so from Caledonia Colliery. The first lift will be six hundred feet, when the levels will be driven; places will be driven up four hundred feet leaving 200 feet of top coal. Until this year the

Emery seam has not been worked since the company took hold. Several analyses have been made lately of the coal and it is believed to be of exceptional quality. The height is 5 ft 2 inches. Engines, and other necessary machinery are being placed in position and bankhead and screens will follow. The work will be proceeded with vigorously. By the first of next May it is calculated the colliery will be producing 600 tons per day, to be increased to a thousand tons by the 1st of Sept. of next year.

All the cry at the present time by users of coal is for the Phelan seam. They won't have any other if they can help themselves. Well, they are to have their wants supplied, for though the Phelan at this time is being extensively drawn from it is to be subjected to further drain. A new slope is to be driven to this seam. The location of the slope will be midway between Reserve Mines and Caledonia, a mile and three quarters distant from either. In order to have the making of the slope done speedily operations will commence above and below ground, that is, while men will be engaged driving the slope up from the West level in Caledonia, at the same time men will drive down to the surface to meet those driving up. The length of the slope will be sixteen hundred feet, which is a fair length for a first start. This slope will not be what one might call an independent colliery, as there will be no screens at its mouth. The intention is to haul the coal after it is landed on surface, to the Emery Bankhead. The mine will be worked it is thought wholly by machines. Though the slope will be sunk rapidly and places for machines prepared, it is not expected to ship coal from the mine for some time to come. This mine will be called the Emergency Slope, and will be used only in cases of a great rush, or an accident to some other mine. The loss of coal consequent upon the Caledonia explosion has impressed the officials with the necessity of having a spare mine to fall back upon.

The effects of the fire in Caledonia Mine have been a little heavier than at first supposed. Not until next May will the mine be so favorably situated for a big output as it was previous to the explosion.

It is the intention of the company to build a low level pier at Louisburg for the handling of freight. This pier is to be built strong, and by and by used as the foundation or substructure of a pier for shipping coal on the lines of the present pier at that port. There is also the possibility that a large coal pocket may be erected at Louisburg. If the pocket is built there will be attached to it a Robbins Belt Conveyor for quick loading of the coal into vessels.

A few months ago there was a discussion in some of the Cape Breton papers about a race track being built in Sydney. It was claimed that horse racing was legitimate sport and that miners had as much right to enjoy it as others. That is, I suppose, if they could afford the money and the time, which they cannot. If workers at collieries were wholly their own masters one might say not a word against their injuring their business. But when it comes to employees disarranging the work of their employers and interfering with the work of their fellow employees, horse racing or any other kind of sport, should receive scant encouragement. Once a year is often enough to see a horse race; when it comes to once a month the thing

is a nuisance. The figures were shown of a colliery employing say 450 men where on a late occasion no fewer than 98 men were off work. I do not say positively the occasion was a horse race, but on horse racing days it is just as bad. The absence of so large a number of men placed the colliery at a serious disadvantage. I would say it handicapped it to the extent of at least 600 tons for that day. I am told that a horse race is eagerly embraced by a lot of the men as a pretext for getting to Sydney. Once in Sydney a great many forget all about the horse race, and betake themselves to other sport, and that so uses them up that they do not care for so hum drum a thing as work for a day or two. These remarks apply only to a portion of the men, but a portion big enough to disarrange their employer's business. The men should not forget that it is not so long since that times were dull and earnings small. Let them make all they can now, if not in proportion for a rainy day in the mines, which now seems a long way off, then for the time when having gathered a snug sum they can leave the mine for some surface pursuit. This is rather long a screed in the middle of news items, but it is penned in the best interests of the men.

Coming back to Dom. No. 1 the output has fallen off a little owing to the loss of a few places from the little crush that came in the mine lately, and owing to the horse haulage being too long. Owing to the very large and steady output it was impossible to get new haulages ready, or to keep up the haulages in operation, as fast as the coal was mined. The horses were not equal to the long haulages: This, however, is being remedied. The angle deep is driven back 2050 ft. deep to bottom, roads are being laid and other preparations on foot for next year's increased output. The manager will not give Dom. No. 1 credit for having done its whole duty until an output of 2,500 tons daily is maintained. There is plenty of air in the mine, and of compressed air for machines though there may be a little shortage of the latter in some places through pipes being small and drain heavy. Larger pipes are replacing the smaller. With the machines already in the mine an output of 2,500 could be maintained if—if the loaders would not get tired. There is in operation at this mine a 500 electric light plant. There are 30 lights at pit bottom, landings, engine house etc. The pit-head, engine houses and boiler sheds on surface have all electric lights. The thirty ton steel cars are in use here and are a great convenience, but they cannot properly be utilized until the screens are raised. The Company is not stingy in some respects. It will give Dom. No. 1 all the plant it needs for the biggest possible output. The engine is good for 3000 tons daily. The pit is to have another section delivering coal to the shaft, that is, there are to be three independent sections in the mine instead of two. This will make the output more uniform and spread the work better, besides giving the places a longer life. On the surface, ready for emergencies, is an ambulance wagon with all the accessories. Every colliery in N. S. should have one of these. Mr. Mitchell the Supt. of the colliery, after holding bravely out for years, now gracefully admits that the Reserve Mines can beat Dom. in output, but though he admits so much he never forgets to add—"but, mind you, there are three slopes there."

RESERVE MINES.

Even if there are three slopes, to hustle 60,000 tons of coal over one bankhead is no small affair. At the largeness of the output the genial superintendent Mr. McVey, is of course not the least pleased man. Not so bad, he declares, for a colliery that has few new fangled notions and is considered an old timer. The bankhead is the scene of bustling activity. It is marvellous how, amidst the din and noise of the cages, and especially of the knocking screens, that the weighmen can take tally of the weight of the coal. John Ross is still the principal weighman for the company, while Will Cobbett, faithfully performs his part for the men. The average output is 2,500 tons per day, and the fact that for the 10 months of '99, the Reserve has 470,000 tons to its credit speaks volumes for the management. No other colliery in Nova Scotia ever came within sight of this, through Spring Hill slopes have often made a remarkable showing. The new McKay, or East Slope as it is known by the company, is contributing its share to the output. About 350 tons daily is the output and this will gradually increase as the places for men are obtained. The slope is an ease to the French slope from which the men to work it were drawn. A short railway and a large trestle connect the slope mouth with the screens at Reserve. The endless haulage system is employed and works well.

INTERNATIONAL MINF.

Everything is working excellently at this mine. Owing to the force not being larger than the requirements the men made a pretty fair wage this year. The colliery it is expected will work steadily, on a moderate scale, during the winter. Mr. Christianson the superintendent is pleased at the prospect of his colliery shipping 200,000 tons in '99, which beats any previous output by at least 50,000 tons. Mr. McEachern the underground manager, and Mr. Robt. Crosby, overman, are deserving of credit, or should it rather be said increase of pay, for the heavy work they have done during the past summer.

In this issue there is not space to speak of the Caledonia Mines; or the big shafts, which I visited in company with Mr. John Johnstone, the Coy's most energetic assistant manager. In Mr. Johnstone the Dom. Coal Coy have a man in ten thousand, and one who in the writer's opinion, could not be replaced in a hurry—Next issue the Record expects to give some particulars as to Caledonia and the shafts.

In response to a demand by the steel smelters for an advance in wages of 10 per cent., the Employers' Association, representing Scotland and the north-east district of England, offered last month an increase of 5 per cent., which the workmen's executive have decided to accept. There was a conference held amongst the steel smelters, at Glasgow, September, 15th, and they and the steel manufacturers have met on the subject of another advance of wages, which are claimed by the workmen on account of the rise in selling prices. The steel manufacturers offered 5 per cent., and this the men accepted.

Andrew Carnegie has put his own name in writing to a document wherein he says most distinctly that for the sum of \$125,000,000 he will part with his entire holdings in the Carnegie-Phipps-Frick plants.

WHAT IS BEING SEEN AND HEARD IN SYDNEY.

During many visits made to Sydney, during the past eighteen years, only once—and that his latest visit,—has the writer returned without the phrases "Times are awfully dull" and "Money never was so scarce" lingering in his ears. There are no grumblers now. If there be any inclined to growl they are afraid openly to do so lest they be charged with incapacity to take the tide at its flood which is bearing many to fortune. There are no anxious looking faces; all countenance now beam with joy or eager anticipation. The more familiar of his acquaintances seizes the visitor by the coat sleeve and gleefully says "Ah, it took a long time to come, but the old town is booming at last."

And so it is—most undoubtedly.

And so are prices at the Sydney Hotel; and why shouldn't they; unless it be not desirable that everybody go into the hotel business.

But about the boom. "It is a boom, the biggest without exception that ever struck Nova Scotia, that ever struck any portion of Canada, within similar limits. Buildings are going up in all directions—except on areas which are without doubt submarine and inaccessible. Lots are changing hands at New York prices. Banks are being established by the half dozen. Four and five storey brick buildings are going up, in stead of 1½ storey frame ones. The hotels are crowded with visitors, and the streets present a bustling appearance. The most pleasing feature of the boom is that only one man in a dozen is met with who has not already made ten thousand dollars out of it—or is perfectly confident that he can make it at any moment. The first question put to a visitor by his friends is "When are you going to move down?" If the reply be that he has not yet given the matter serious consideration, a look of blank astonishment comes over the face of the inhabitant of the favored town, followed by a facial expression which conveys to the interrogator no other impression than that he is looked upon—by the interrogator—as one of the 'blame-est' fools ever born.

There's no place like Sydney—so thinks a Sydney man.

And I am, since my last visit, almost of a Sydney man's opinion.

A Sydney man when one gets into his confidence, or when he is sure not to be given away, gives away his whole heart. One is assured that in less than ten years Sydney will be a bigger and a better city than Halifax. And then follows the mathematical demonstration—unless one is in an ill natured hurry. The Steel Works alone will bring two thousand employees. Taking an average of five to a family the population will then be 10,000. The Rolling Mills will bring another 2,000 employees, and add another 10,000 to the population. The Steel Works and the Rolling Mills are sure to bring at least a dozen 'allied' industries employing from 100 to 1000 men each, or, say, an average of 400 each. These with their families will add 24,000 more, to the population. There are at present 3000 native born Sydneyites who, added to those to become natives by adoption, give a total population, in ten years, of 47,000, or, adding births, say, 50,000.

The thing is quite feasible, and they don't look like fools who figure it out in this way.

By others the visitor is assured that the boom is to be an abiding one, and these endeavor by the employment of logic to impress him with their beliefs. 'Look here' said one 'there is no doubt this boom is to go on and Sydney is to be the place in Canada. See that young fellow over there. That is young V. H. He is an only son. His father could command for him the very best position in all of Canada: Well the father and the lad talked it over, and the advice of the father to the son was "go to Sydney young man" and do you think, knowing all that he knows, and all he can command, his influence, his millions, etc, that he would have advised his boy to come here unless he was pretty sure this was to be 'the' best place in all of Canada.

I wouldn't, if I could, argue the point.

The old saying is "All things come to those who wait."

Of friend A. C. Ross this may be said almost literally. After long and arduous waiting, with a bound he has at last come into his kingdom. If he still wears that imperishable suit it is not because he has to. He's a good looking man and looks well in any style of dress. He's in luck and is reported to be rich. He has been doing big things of late. First there is the large brick building which is being constructed for him, then there is his acquiring by purchase at about half cost the Sydney Hotel, and lastly there is the order he has given for the construction of no fewer than two hundred workmen's houses at Ashly. The contractors for the building of these houses are the well known firm of Rhodes & Curry of Amherst and Shurman and Co. of P. E. I. It is thought that Mr. Ross is not the principal in this big transaction but is an intermediary, not for the Dom. Iron & Steel Coy., but for certain of its big shareholders. Big companies after this are going to alter their past policy as to building houses for workmen. If private individuals can be had who will build the houses the companies will not enter into competition but may rather grant assistance in the collection of rents etc. Only fifty of the houses may be completed this year, the remainder will be rushed up next spring. The average cost of the houses will be \$1600.00 each. Mr. Ross sold a corner of the Sydney Hotel property, for a better site, for \$6000.00. The hotel, seeing the boom is on, is said to be worth its original cost. If so Mr. Ross falls to make \$22,000 by the transaction.

Mr. Whitney and party spent a busy yet a pleasant week in Sydney. Mr. Whitney was in great spirits and hopes. He takes great interest in the work now being done on the site of the new steel works. Indeed his heart is bound up in the work. He considers this by far the most gigantic undertaking in which he ever was engaged, and on its success he is building higher than ever he built, feeling assured that it will be a great success and a most profitable undertaking. So great is his interest in the work that he will build a house next summer in which he will reside a portion of each month the year round.

There is talk of Sydney having a street railway in the near future. It is said that Mr. D. J. Kennelly has something like this in view. Six of the leading banks will soon have agencies here. The banks seemingly believe in the boom and they have good sources of information.

Of the great works being erected within the

town limits I scarcely know where to begin to speak. Adjectives such as gigantic, stupendous, applied to the undertaking fail to convey a proper conception of the great work now going on. As one walks over to scene of operations, sees the hosts of men at work, and notes what has been done in the way of digging and building he realizes what things of magnitude may be accomplished by money and brains.

At present there are probably 1500 to 2000 men employed between the site of the coke ovens and the new wharf at International. The ground in every direction is torn up and shovels and wheelbarrows are in motion everywhere. I noticed but one steam shovel and really its performances were not creditable. A large number of shanties are on the ground for the accommodation of the workmen and there are large sheds for the storage of cement. A great pile of bricks is on hand ready for use. Work goes on night and day. Already a large wharf for the reception of supplies has been completed, the substructure of a bridge to connect the town proper with the works is already laid. The foundation for the store house, a building 1000 ft by 250 has been begun; the new offices will be occupied by Mr. Nicolson and the engineering staff in a day or two; two large sheds for fire brick, etc. have been built; there are already several branches of railways and there will be over a dozen miles of branches about the works; a large piece of the main foundation work has been finished, and the first of the furnaces, with heavy concrete as foundation for immense iron columns, looms high up in the air; other of the furnaces have been begun and the click of the hammer now mingles with the rumbling of the trolleys.

With plans and details at command it might be possible to give an intelligent description of the great works, otherwise it is impossible. To obtain an adequate idea of their extent one has to visit the locality. The best way to view the whole site is to drop off at the crossing, that is, where the Sydney and Louisburg Ry. intersects the railway to the Pier. Here the coke ovens are to be erected, 300 of them to begin with. The ground is damp, not to say boggy, and immense drains, or let it be said canals, are being cut all around in order to drain the water. These canals seem to be 10 ft deep, it being necessary to go that depth in order to get to a level of the brook. The water for the use of the coke ovens and also for the steel works will be brought a distance of 9 miles in pipes 36 inches in diameter. Having 'done' the coke works site, follow the railway townwards until the Dom. I. and S. Coy's crossing is met. Take this crossing which leads to the pier. Between the crossing and the pier are situated all the works in course of construction, the distance between the coke ovens and the pier, by rail, being about two miles, and along all that route with the exception of a small spot, the ground will be occupied by the largest plant in Canada.

Sydney has four newspapers. Mr. Fred Muggah, who assumed charge of Sydney's daily—the Record—is doing good work on that paper. For a time it was considered doubtful, by some, whether the paper would or would not be a success. Its success is now assured. With so much favor is the paper received, and so rapidly is its subscription list and advertising patronage extending, that it will be necessary to enlarge the paper at no distant date. The Record is in the enviable position of having almost as many advertisements as can be found room for. The paper is in every way a credit to the town.

AROUND THE COLLIERIES.

The time charter boats of the G. M. A have completed their season's contract.

The Dominion Coal Coy. shipped 48,061 tons more coal in Oct. '99, than in Oct. '98.

The International Mine, Bridgeport has so far this year shipped 180,000 tons. This has been by far the best year in the history of this colliery.

The output of Dom. No. 1 colliery for the 10 months ending Oct. was 412,000 tons. This is a fine showing for a mine that has only one outlet for coal.

The Dominion Coal Co. will pay out in wages this year no less a sum than 1,250,000 dollars. The sum of course includes wages paid on construction account.

The Jubilee shaft at Sydney Mines which had been re-opened for a short time for the purpose of getting three or four hundred tons for some special purpose has been again closed.

It is estimated that by the close of navigation the Dominion Coal Coy. will have shipped 820,000 tons to Montreal. The shipments this year leave all previous years far in the shade.

It costs the miner about 2c. a ton to blow his coal—where the conditions are favorable. It costs a coal company about a cent a ton to hoist coal and about $\frac{1}{2}$ cent per ton for timbering, where the roof is fairly good.

It is said over 500 laborers will be discharged in a few weeks from the big works now going on at and around Sydney, C. B. Unless a number of these men return to their homes in Newfoundland the labor market will be glutted.

A bore hole for pumping purposes is being put down at International Mine. When the hole is completed it will be utilized for pumping the water from the Reserve and Dom. No. 1, until such times as a connection can be made with Dom. No. 2.

To show how large is the output at some of the collieries we give the figures for the Reserve Mine for 10 months of the present year viz 465,945 tons. By the end of the year the Reserve Colliery alone will have shipped more coal than came from all the collieries in N. S. thirty years ago.

Mr. Naismith, Supt. of the Sydney & Louisburg Railway leaves the employ of the Dominion Coal Coy shortly to fill an important position at Lethbridge, with a salary almost equal to that of a cabinet minister. Mr. A. N. McLennan, of Glace Bay, a gentleman who has brought himself forward in the Company's employ, will take the position when vacated.

The people of North Sydney are a little more than mildly agitated over the belief that the Nova Scotia Steel Coy. will establish works there. The specific grounds for this belief are not boldly asserted, but it is stated that Mr. Graham Fraser and Mayor Bertram would not have been seen going around spying the land unless 'something' was in view. May it not be the case that the consultation was over a locality for coke ovens.

Eleven cars of copper ore from the mines in Colchester arrived in Pictou last week for the new smelter.

More coal has gone to the U. S. from N. S. this year than in any year since 1873 when coal was in great demand everywhere.

The P. W. A. at Reserve Mines are talking about building a hall in which to hold their meetings, as there has been a disagreement between the lodge and its late landlords.

Newfoundlanders are arriving at Sydney in droves. On a recent trip of the Bruce a hundred and fifty came over and the succeeding trip fifty.

A question engaging the attention of some of the people of Broad Cove is 'what place should Mr. Hussey be given in developing coal mining in that locality.'

Mr. Wm. Blakemore, formerly of the Dom. Coal Coy. and latterly manager at Fernie, B. C., has given up mine managing for a season and is now in the insurance business.

There is no scarcity of miners in C. B., but laborers around the collieries are somewhat scarce at times owing to men from the collieries seeking and obtaining work, at fully bigger wages—perhaps—with the Steel Coy. in Sydney.

Almost anywhere in the vicinity can be seen prospectors engaged in searching mother earth for minerals. Recently since Cape Breton became known to be rich in mineral wealth, scores of outside speculators and prospectors have come in and are spending money and time in their search for all kinds of minerals.—N. S. Herald.

Steady work means something to the operators as well as to the men, for instance, when a mine is not working steadily or when its output is small, only 27 tons of coal—less or more, is hoisted for every ton of coal used in raising the coal, pumping etc. When times are brisk and the output large sixty tons are raised for every ton consumed.

The miners at International send up on an average $3\frac{1}{2}$ tons of coal per man. An average of $3\frac{1}{2}$ tons means that some men may put up as many as from eight to ten tons on occasional days. The coal in this mine is of varying height. The lowest price paid 40c. is for coal which is called 6 ft. 6 high. Coal 5 ft. 6 or under is paid at a higher rate.

A number of papers which did not take their infirmation direct from the RECORD but through another source where purloining had been resorted to, made the funny statement that "by the end of the year the Dom. Coal Coy will have shipped the large quantity of 60,000 tons over last year." The shipments of the Dominion Coal Coy. will be nearly 400,000 tons more than last year.

The Dominion Coal Coy. shipped in Oct. 110,106 tons of coal to Montreal against 84,843 for the corresponding month in '98. The shipments to Montreal from the beginning of the season up till the end of Oct. were 784,634 tons against 628,394 for corresponding period of '98. This shows an increase for '99 of the large quantity of 116,000.

The parties who recently acquired the Port Hood areas evidently mean business, as machinery for mining purposes has recently been landed. It is understood the new company have secured quite a few areas.

A long siding is being put down at the Albion closely adjoining and running parallel with the main line of the I. C. R. This siding is for the accommodation of the coal eastward bound, and will be a great convenience not only to the Acadia Coal Co. but to the government. It is laid at joint expense.

The Dom. Iron and Steel Co. has a number of smart young fellows as engineers who are kept busily employed and who take interest in their work. Among them are young Gilpin, son of Dr. Gilpin of the Mines Office; young Poole, son of H. S. Poole of the Acadia Coal Co., and Van Horne, only son of the only Van Horne. The Company are fortunate, in having such promising fellows—and these are fortunate in falling upon a place where so much can be learned.

Mr. Charles Fergie of the Intercolonial Coal Coy. is coming to the front as a Mining Engineer. He is the consulting engineer of Messrs. McKenzie and Mann and the exploratory and initial work on the coal areas at Broad Cove is being conducted under the direction of Mr. Fergie. Mr. Jos. Quigley of Westville is at Broad Cove at present carrying on some work at the suggestion of Mr. Fergie. It is understood that the best location for a slope or shaft, or both, to win the submarine areas which are believed to be very extensive and to contain excellent coal, is being sought for. Mr. Fergie was out at the "Coast" as B. C. is frequently called inspecting some coal areas held by Messrs. McKenzie and Mann.

Some of the papers are saying that the mining of coal will be brisk at Port Morien next year. The RECORD would advise no one to 'bank' largely on that. It will be two years at least, at the present rate of progress, before the Newcastle Syndicate will be in a position to put their coal in the market and that is supposing things pan out as proposed. The six foot of coal reported to have been struck is the Gowrie Seam. The shaft is now sunk to the coal, but before the company can reach their area a slant over 500 feet in length has to be driven through the 'barrier' of the Dominion Coal Coy. And after that the levels in the Newcastle areas have to be driven. Besides all that there will be a great deal of work to do on the surface in order to put in an endless system of haulage by which it is expected to bring the coal from the faces to the shipping pier. Mr. McDonald, who is in charge of operations will not rush things as this opening of a colliery is only a little side show of his employers. It may be that friend Ochiltree is a longer headed chap than some give him credit for.

A steamer is kept busily employed carrying railway ties from the I. C. R. terminus at Mulgrave to Port Hastings for the Inverness and Richmond Railway. In the construction of this road considerable and commendable energy is being displayed. So energetically is the work being pushed that 3000 ties daily are required to keep the track laying force in operation. About a mile and a quarter of track is laid daily. The road is now completed 22 miles out from Hastings. It is expected that Port Hood—twenty-eight

miles, will be reached, by a completed road, by the twentieth inst. A large part of the road east of Port Hood is graded, so that work of track laying will go on without interruption. Astonishment is expressed on all sides, at the rapidity with which the work is being pushed. There has been nothing like it in the history of railroad building in this province. Mr. Sinclair the chief engineer is not only a genial but a go-a-head gentleman. As an instance of what Mr. Sinclair and his force can do may be cited the case of a cutting a hundred and fifty feet deep. The cut was through solid rock. Old time railroaders said it would take two years to cut through. The job was done in nine weeks.

COAL SHIPMENTS.

DOMINION COAL COMPANY, LIMITED.

Approximate Output and Shipments, October, '99.

	Output.	Shipments.
Caledonia	39,246	
International	18,734	
Dominion	47,417	184,700
Reserve	60,680	
	166,077	184,700

Shipments to the United States during October, 1899—32,718.

The total shipments for the 10 months ended 31st Oct. are 1,293,716 tons.

The shipments to Boston for the 10 months are 161,217 tons.

The shipments from Int. Pier were 134,300 tons; from Louisburg 43,400 and by rail say 7000 tons.

ACADIA COAL COMPANY, LIMITED.

Sales for October, 1899.

Acadia	7,668
Albion	12,210
Vale	5,083
	24,961

Increased over October, 1898—3,707 tons.

Coke sales October, 1899—2,015 tons.

Increased over October, 1898—1,483 tons.

INTERCOLONIAL COAL COMPANY.

Drummond Sales, October, 1899—19,166 tons.

The Venezuela arbitration award gives the British control of nearly all the territory in that country from which gold is obtained.

Notwithstanding the partial stoppage, owing to the war, of gold mining in South Africa, the world's gold production for '99 will be twice as large as it was ten years ago.

The miners' strike in the Slovan district, B. C., seems to be spreading. A number of Italians have been brought to the Payne mine. These are said to have been brought in under contract. This is an infringement of the Alien Labor Law and the miners have appealed to Sir Wilfred Laurier.

MR. J. B. NEILY'S NEW SCHEME.

BESIEGED AFRICAN TOWNS.

It is known in gold mining circles that J. B. Neily has been bonding a number of properties. In a letter published in the 'Industrial Advocate' he gives the names of the mines he has bonded and tells what he intends doing.

"I own and have purchased under bond or lease the following properties: Five properties at Caribou; the Stuart-Hardman properties at Goldenville which include quite a number of properties; also three properties from Mr. George W. Stuart, and the New Glasgow property at Goldenille; Klondike at Killar; Lake Catcha, Lake Porter, Cow Bay, East Mine, North Brookfield, and Gold River properties; and I am now about making arrangements to purchase the Gold Lake and another large property. There is no person associated with me in the purchase of these properties, and I have paid for and on account of same to date about \$156,000. This is exclusive of the amounts I have invested in Tangier, Cochran Hill and Oldham properties, in the United States and Ontario.

"It is my intention, at an early date, to amalgamate these properties, personally owned or held under bond or lease, with a number of others and form one large proposition.

WAGES IN BRITAIN.

The annual Government return on wages and labour was issued lately for 1898. The rises in wages last year far exceeded even those recorded for the previous five years. The bulk of the large increase went to the miners, who received 60 per cent. of the total increase in the wages of all workpeople. As an average, every British miner last year received 1s. 3½d. a week more in wages than he did in the year preceding, and this year, so far, the average weekly increase above 1898 for miners has reached 1s. 1½d. a week each more, so that it will be seen the wages of workers are considerably increased as between now and 1897. It may be added that in no other group of miners did the average weekly increase in 1898 exceed 3d. A very favourable feature of the report is the circumstance that, taking the trade of the county generally, increases in the wages of the workers were effected without friction, for though more than a million people obtained increases of wages, in only 5 per cent. of these cases was there any resort to a strike. This shows that workmen may trust to the liberality of their employers. With respect to the general state of trade and employment as it is illustrated by this return it is interesting to note that from 1894 to 1898 each year shows an increase in the amount of time worked at the collieries. In 1894 48 days were worked; in 1895, 47; in 1896, 49; in 1897, 51; and in 1898, 52. On the whole the return affords convincing proof of the stability and probable continuance of the present trade revival.—Colliery Guardian.

after the wife of Sir. Harry Smith, the Cape Governor after whom the Free State town of Harrismith is named, is a town of 2,000 or 3,000 inhabitants, and is chiefly noteworthy as the sight of the important military camp where a large part of the British force in Natal is now assembled.

An eminent legal authority has advised the management of the Payne mine, B. C. that the eight hour law is unconstitutional. A test case will likely be made.

Mafeking is a smart little town on the Bechuana-land Railway about eight miles from the Transvaal border, 875 miles from Cape Town. It has a cricket ground and a race course, a 'Surrey Hotel,' and others, English, Dutch and Wesleyan churches and is the head quarters of the Bechuana-land Border Police. It is bound to be a place of important observation and supplies, and the Barolong tribe being very friendly to us, their services will be readily available and very useful, although they are no fighters. From Mafeking carts run regularly in time of peace to the Malmari gold fields and the Marico valley, where some of the most fruitful Dutch farms are to be found.

Vryburg, about a hundred miles south of Mafeking on the railway to Cape town, was the capital of British Bechuana-land until that colony was incorporated with the Cape. The country around is undulating but very bare and sandy, and Vryburg itself is by no means an attractive town, although when it was the northern terminus of the railway it did considerable trade, with wagons coming from the interior. It has two or three thousand inhabitants and a number of government buildings of an unpretentious character, including a hospital.

Kimberley, 647 miles from Capetown and about 230 south of Mafeking on the railway, is well known as the centre of the diamond industry, of the whole world. At the last census its population was about 29,000, of whom rather less than one-half were whites. It has a number of hotels, as well as a hospital and a sanatorium, a public library containing one of the best collections of books in South Africa, a club, a Masonic temple, a park with cricket and football fields, Anglican Wesleyan, Presbyterian and Roman Catholic churches; trams, cabs, and a couple of daily newspapers—the 'Daily Independent' and the 'Diamond Fields Advertiser.' A short distance away is Beaconsfield, practically a suburb, with a population of 10,000, half whites, around the mines of Du Toit's Pau and Bultfontein. At Kimberley the diamond mines and De Beers offices would offer an irresistible temptation to the Boers, but, notwithstanding the Cape Government's endeavor to weaken the volunteer force there by recalling the civil servants, Kimberley will doubtless be a hard nut for the Boers to crack. Its defenders are North Lancashires, volunteers and engineers—about 2,500 in all—with guns and Maxims, and the debris heaps and trenches connected with the mines afford fortifications readily made.

At a distance of thirty-six miles from Charles-town, in the direction of the sea, stands Newcastle, on the Incauth River, at the foot of the Drakensberg. It is a very healthy little town, of some 2,000 inhabitants, and possesses English, Wesleyan and other churches, a town hall and a public library, and it is the center of some highly important coal mines, as well as of a wool industry. When Sir. Henry (now Lord) Loch was High Commissioner in South Africa, he paid a visit to Newcastle, and had a reception on this occasion in its loyalty—a fact which makes the necessary strategic abandonment of the town a very regrettable contingency to think of. The coal-fields extend into the Transvaal and also south-east to Glen-coed and Dundee—small mining towns whose names suggest the energy of Scottish founders in this promising part of Natal. Ladysmith, or Ladismith (named

COKE AS LOCOMOTIVE FUEL.

The Boston & Maine R.R. began the use of coke as a locomotive fuel in April last, and the experiment then begun has proven so satisfactory as to have been continued until 100 locomotives are now in regular service with this kind of fuel. All the switching engines in the larger cities reached by the road use coke and the total number is made up by engines in passenger service. By the courtesy of Mr. T. A. Mackinnon, first vice-president and general manager, and Mr. Henry Bartlett, superintendent of motive power a representative of the 'Railway age' was recently afforded ample opportunity for investigating the use of coke as fuel and for obtaining all possible information. The results of observation may be summed up in the statement that the consumption of this fuel by the locomotive is without indication of smoke except for a slight blue haze, which appears when the engine is working hard. The writer in one ride upon one of the coke-burning engines gave rather close attention to the method of firing practiced, which was in all particulars in accordance with previous information. Most of the firing was done during stops, although with no apparent necessity for so doing, since the rule was sometimes deviated from. The fire box door was kept on the latch at all times. It is stated that it is possible to run from 12 to 15 miles between firing, and on the occasion in question the run into Boston was made without firing beyond Salem—14 miles. The train consisted of ten passenger coaches and baggage cars.

The coke used by the Boston & Maine is obtained from the New England Gas & Coke Co., closely affiliated with the Dominion Coal Co. The coal used is from Cape Breton, and a large plant has been established at Everett, Mass., from which when completed gas will be furnished to the city of Boston. On account of the present incomplete state of the piping, the production of coke, ostensibly a by-product, has been the main business. The Boston & Maine uses about 300 tons per day, and will make use of a considerably larger quantity as soon as increased facilities enable it to be obtained. The Main Central obtains a small quantity from the Boston and Maine and the Boston & Albany, on which road coke has been used to a limited extent for a few months, obtains its supplies from the manufacturers.

There seems to be little question in the minds of those who have given the matter the most careful study, that with the reduction in cost brought about by improved methods of manufacture, coke has assumed a definite place among locomotive fuels. President Tuttle unhesitatingly expresses his belief in it as the ideal fuel, and the experience of his road in its use should go far towards bringing about its consideration by other roads upon which the smoke nuisance is a problem."

The Yukon country is no longer the remote, perilous, comfortless region we had pictured it but the other day. What with railroad and telegraph communication and the commercial and social facilities a modern community is bound to surround itself with, anywhere, Dawson City is to-day a reasonably cheerful place to live in. Among other institutions it has a board of trade, whose first meeting and election of officers has been held.

THE WAR.

The Daily News has a despatch from Ladysmith dated Tuesday at 10.30, which gives the first independent account of the cutting off of Lieut. Col Carleton's column in the engagement at Farquhar's farm. The correspondent says.

"The column was sent out Sunday night, made a wide detour and reached the spurs of the Drakensberg before dawn. Col Carleton stormed the heights with the bayonet and maintained his position against great odds, until his ammunition was exhausted and surrender became inevitable. Nearly 200 had then been killed and wounded."

The report comes from Rome that Portugal will permit the landing of British troops at Lourenço Marques. This coincides with the view strongly prevalent in some quarters here that the British invasion of the Transvaal will be made from that point.

London November 5.—Troopship Kildonan Castle the largest troopship in the world, sailed from Southampton last evening for South Africa with more than 3,000 souls on board with their kits and weapons balloons, bridge pontoons, and machine guns, ammunition and hundreds of tons of other military necessities. She takes 29 officers and 827 men of the First Welsh regiment, 28 officers and 961 men of the second Northumberland Fusiliers and 33 officers and 425 men of various regiments and branches of the service and a mascot goat presented to the Welsh regiment by the queen.

November 5—A feint of artillery firing enabled General White to administer a severe defeat to the Orange Free State forces by the capture of the Boer camp behind Bester's Hill. For this purpose the Lancers, Hussars, Natal carbiniers and Natal Border rifles started under General French at sunrise and got within striking distance before the enemy were aware of their presence. A field battery was also sent and it secured a good position, commanding the enemy's camp which was a large one, laggard with army wagons and other vehicles.

Bester's Hill was well fortified and provided with good guns. At 9 o'clock the British opened fire, the Boers replying with spirit but bad aim. The British quickly sent a 42 pound shell into the camp, inflicting terrible loss and spreading panic among the enemy. Our cavalry then stormed the position, the Boers fleeing precipitately, leaving many dead and wounded as well as the whole camp and equipments in the hand of the British. The success will upset the plans of the Orange Free State commander and possibly will prevent them giving further trouble from the west.

Daar Junction, November 6.—A citizen of Kimberley, who has just got through the enemy's lines, says the sortie made by the British last week was a brilliant affair. The enemy outnumbered the British but were thoroughly thrashed.

The Ninth Lancashires were the heroes of the day. The manner in which they charged the superior force of the enemy on the hill was as fine a performance as the Gordon Highlanders at Dargai.

Estiourt, Natal, Saturday November 4.—It is reported that the Boers lost 800 in killed and wounded and captured in Thursday's battle on Tatham's farm, near Ladysmith. The fighting was resumed yesterday

(Continued on page 18)

bailing tanks, water buckets or kibbles and hoisted to the surface, but during shaft sinking operations the maintenance of a sump sufficiently deep to dip from is impracticable.

The Vacuum Bailing Tank herein illustrated was patented by Mr. Ross E. Browne and assigned to Fraser & Chalmers.

By its employment the difficulties and inconvenience usually experienced in removing limited quantities of water from the uncompleted shaft are obviated.

The apparatus consists of a large vacuum tank which may be lowered and hoisted rapidly in the shaft by means of an ordinary hoisting or winding engine located on the surface.

The tank is lowered to a point near the bottom of the shaft and connected by means of a coupling with the vacuum pipe leading to the vacuum pump on the surface which may be driven continuously or intermittently by steam, compressed air, electric current, water power or otherwise as may be most convenient.

The operation of this pump produces the vacuum in the tank which draws the water from the shaft bottom through a strainer foot valve, suction hose and suction valve.

When the tank is filled with water, the coupling is loosened and the tank is then hoisted to the surface to be emptied and returned to the bottom of the shaft where it is reconnected with the vacuum pipe and is then ready for re-filling.

The coupling is preferably connected with the vacuum pipe and with the tank by means of flexible vacuum hose so as to occupy a position readily accessible to the miner and is most suitably constructed to cut off the air-intake when uncoupled and open the same when coupled. Similar couplings are in common use for other purposes at the present time.

The tank is best provided with shoes to run in guides in the shaft, its construction also involves the use of a self-dumping valve operated by a rod passing through a stuffing box at the top of the tank and connected with a lever which is automatically tipped by a stationary guide at the surface the discharging water being carried through a water trough. Similar arrangements for automatically emptying the tank are commonly used in bailing.

Additional hoisting capacity is not required where double hoists are already provided as is very frequently the case—one for each of two compartments.

The utilization of one hoisting compartment for bailing while sinking as a rule is not objectionable, shafts generally have two or more compartments only one of which is used for hoisting the rock from the bottom of the shaft.

The tank is described as specially designed for use in vertical shafts, but it may be adapted to inclines.

It is apparent that the apparatus commends itself by its simplicity.

It lifts air, water, mud, sand, etc. with less than the usual amount of wear and tear, necessitates less labor in handling and is more easily kept in order than the sinking pumps in ordinary use.

Further information concerning the device may be obtained by addressing the manufacturers, Fraser & Chalmers, Chicago and London.

(Friday) the Boers firing from a hill near Hepworth's farm. Again they were driven back with loss on their camp.

London, Nov. 7.—A despatch to the Daily News from Escourt, Natal, some distance south of Colenso, on the road to Pietermaritzberg, dated Nev. 3, states that the evacuation of Colenso was absolutely necessary because the Boers greatly outnumbered the British garrison at that place. To continue there meant to invite disaster.

The Boers had been reinforced by a company of Orange Free State troops, which brought the total strength of the enemy up to 5,000.

Nothing has pleased Englishmen more than the reports that crowds in New York, Chicago and St. Louis have cheered the bulletins announcing that the naval guns had silenced the Boer forty-pounders.

Transports have just been secured for the Woolwich Howitzer Brigade, which will be hurried to the Cape. The brigade has ten thousand rounds of five inch Lyddite shells, awaiting it. According to the estimates, a single shell falling into a compact body will kill three hundred men. It was demonstrated in the battle of Omdurman, which destroyed the army of Khalif Abdullah, that large number of Dervishes were killed by suffocation, while hundred of vultures and eagles fell upon the battlefield from the same cause.

Nov. 7.—To-night's welcome despatches from the front have rent the veil of gloom enveloping Ladysmith, showing the British garrison not merely standing on the dogged defensive, but executing a series of brilliant sorties. Reports from different sources agree that the Laconic official description of Thursday's engagement as "an effective shelling of the Boer laager was unduly modest.

It appears that Gen Sir George Stewart White sent a strong force of cavalry and infantry to attack the Boers at Tatham's farm, about ten miles to the northwest, near Bester, and apparently achieved a surprise, the Boers being caught on the open veldt and cut to pieces and camp captured.



SEALED TENDERS addressed to the undersigned, and endorsed Tender for Brookwater, North Bay, Ingonish, N. S. will be received at this office until Friday, 17th November, 1899, for the construction of a breakwater at North Bay, Ingonish, Victoria County, Nova Scotia, according to a plan and a specification to be seen at the office of E. G. Millidge, Esq., Resident Engineer, Antigonish, N. S., on application to the post master at Ingonish, N. S. and at the Department of Public Works, Ottawa.

Tenders will not be considered unless made on the form supplied and signed with the actual signatures of tenderers.

An accepted bank cheque, payable to the order of the Minister of Public Works, for three thousand dollars (\$3,000.00) must accompany each tender. The cheque will be forfeited if the party declines the contract or fail to complete the work contracted for, and will be retained in case of non-acceptance of tender.

The Department does not bind itself to accept the lowest or any tender.

By order,
E. F. E. ROY,
Secretary.

Department of Public Works }
Ottawa, Oct. 28th, 1899 }
Newspapers inserting this advertisement without authority from }
this Department will not be paid for. }

ROBERT LIVINGSTONE'S WARD.

CHAPTER VIII.

Her teachers were very kind. It was simply a pleasure to teach her, she was so eager for knowledge—so determined to master every difficulty that stood in her way; and they were no less proud than Gertrude herself, when, at the end of the year drew nigh, she stood among the first in her class.

She had developed, too, a great taste for painting, while her voice, under careful cultivation, gave promise of becoming a source of delight to herself and her friends.

She heard from Allan regularly once a month, and she replied to every letter faithfully, although her own epistles were always very brief, and she said just as little as possible about herself and her pursuits.

Allan had approved most heartily her plan of going away to school, and was deeply interested in her progress although he had to depend more on accounts from his mother regarding that, than upon Gertrude.

'Who writes to you in such a fine, bold hand, and from a foreign port, too, Gertrude?' Rose asked her one day, as she came into their room, bringing a letter that the professor had just handed her.

'Oh, this is from Allan,' Gertrude returned, seizing it eagerly, but coloring vividly at her friend's question.

'Allan, indeed! And who may 'Allan' be, if you please?'

'Why Allan Livingstone, of course.'

'Oh, your brother?' returned Rose, jumping at conclusions. 'What is he doing in Paris?'

'Studying to be a physician.'

'How old is he?'

'Twenty-one.'

'Well, I must say you are extremely quiet about your affairs!' exclaimed Rose, in surprise. 'No one would have dreamed that you had a brother from anything that you had ever said. Pray, have you a picture of this noble youth?'

'Yes there is one in my trunk,' Gertrude admitted, but feeling greatly embarrassed.

'Do let me see it. I am crazy to know what he is like. Does he look like you?'

'Not at all; he is very handsome,' Gertrude said, unconsciously emphasizing the pronoun.

'Indeed! Do you mean to imply that he is the only handsome one in the family?' demanded Rose, dryly, but with a roguish twinkle in her eyes. 'What do you call yourself?'

'I am a—dowdy,' came from Gertrude's lips, almost before she knew what she was saying.

'What do you mean?' exclaimed Rose, in astonishment, and speaking with indignant emphasis.

Gertrude laughed.

'Oh some one called me that once, and I have never forgotten it,' she explained, but with heightened color.

'I should like to know what reason any one had to insult you in that way?' said Rose, with spirit.

'More reason than you imagine possible,' replied Gertrude, gravely. 'Less than a year ago I looked entirely different from what I do now. My hair was red, coarse, frizzy; my face was one mass of unsightly freckles; I measured and weighed half as much again as I do now; and all this, besides being very careless and untidy in my personal appearance, contributed to make me anything but attractive.'

'Your hair red!' gasped Rose, almost breathless from amazement. 'Whoever would believe it? What changed the color?'

'I had a terrible illness—brain fever—and my hair had to be shav'n off, and when it came out again it was no longer red.'

'No, it is a beautiful, glossy brown; and Gertrude, there isn't the suspicion of a freckle about you. Your skin is as smooth and fair as a piece of satin; you have a beautiful color, and your eyes are simply glorious; you are just as lovely as you can be, and growing more so every day; you're the queen of the class. A 'dowdy'! Gracious! I'd like to box the ears of whoever said it!'

'Spare me,' Gertrude said, putting her white, delicate hands up to her cheeks, and laughing at her friend's compliments and undisguised disgust over what she had told her. 'I know I am changed, but I am afraid you have exaggerated the improvement.'

'I haven't. But I suppose you want to read your letter from that precious brother of yours; so I'll vanish, until you are through, then I shall insist upon your showing me his picture.'

She did not forget, as Gertrude hoped she would, but made her dive to the depths of her trunk, and bring up a photograph of Allan, that he had sent her the last year he was in college.

Rose was delighted with it.

'He is like a young prince!' she cried. 'You bad girl! Why have you concealed all this beauty in the bottom of your trunk? He isn't a bit like you, though. I guess he must resemble his mother, and you your father. We'll just put this treasure in the most conspicuous place we can find, and it will be such fun to see the girls open their eyes, and wonder who he is.'

'No, Rose, don't,' Gertrude pleaded, with a troubled look, as the gay girl was proceeding to place the picture upon a bracket just beneath their looking glass, because girls always look in the glass the first thing when they enter a room, and they'll be sure to see it here,' she said.

Gertrude could not tolerate anything like deception, so she would not say that Allan was her brother, and she could not tell her miserable secret, and acknowledge him as her husband.

'I would like to know why you are so obstinate about it,' retorted Rose. 'I declare I feel personally aggrieved that you should have kept this fascinating face concealed from me all this time. Have you been afraid that some of us would fall in love with him, and you have other for him? Perhaps he is even spoken for already, and you thought some of our innocent young hearts might be endangered to no purpose. Come, be a dear, now, and let me put the picture where I want to. I'll make the girls think that he is a 'very particular friend' of mine.'

But Gertrude would not; it was too painful a subject to be talked about, and she would not run the risk of having to answer uncomfortable questions.

Rose saw that something was troubling her—something that she did not wish to explain—so she returned it to her after a time, and said nothing more about it, though she could not help wondering how any one having so handsome a brother as Allan Livingstone appeared to be, could refrain from talking about him and betraying a pride in him.

As the long summer vacation drew near, Gertrude began to dread going back to Livingstone Elms. She had been so happy at school. But she did not have to go back. Permission came to Rose from her mother to invite her friend and chum to spend the vacation with her at Long Branch, where the Taylors had a lovely residence, and Mrs. Livingstone, upon being consulted, agreeing to the arrangement, Gertrude was only too happy to accept it.

So the middle of July found the two friends by the sea.

CHAPTER IX.

Mrs. Livingstone went to Long Branch also. She had been very loth to give up Gertrude for the whole vacation, but remembering what she had once said about her dislike for Livingstone Elms, and her aversion to her husband, she had not the heart to oppose her request to be allowed to visit Rose.

She felt, however, that she could not be denied her society altogether, and so she resolved that she would herself spend the summer at the same place.

She had seen her but once or twice since she left home, but she realized from her letters that a great change had taken place in her.

Her accounts of her life at school were very entertaining, and well written, both as to penmanship and syntax. They were very cheerful also, while occasionally she would indulge in little pleasantries that were exceedingly gratifying to Mrs. Livingstone's sympathetic heart, for they told her she was happier than she had been.

Then at Easter Mrs. Livingstone had received an exquisite little picture, painted by the young girl's deft fingers, and which had displayed a rare gift, as well as great care and nicety in execution.

'My daughter will yet be an accomplished woman' was the gratified woman's comment upon receiving this token of remembrance. 'We shall be very proud of her by and by. Allan will never have reason to say again that she is ignorant and uncultured, while as for her personal appearance, she was growing very lovely the last time I saw her, and I foresee that when he returns he will be very likely to fall in love with his own wife. I must really make her sit for some pictures, and send him one.'

When she met Gertrude at Long Branch she found her in perfect health, and greatly improved every way. She seemed happy, yet at times that old wistful, pathetic look would return to her eyes, sending a keen pain through Mrs. Livingstone's heart, and convincing her that the old sorrow was not forgotten.

She brought a whole trunk full of pretty things for her to wear at the sea side, and it was a perfect delight to her to see how charming she was in them, while Gertrude herself betrayed pleasure in her wardrobe.

It was not because she was growing vain of her good looks, but it was such a comfort to know that she was no longer ugly, and that no one could criticise her unkindly.

She never forgot that summer, for it was one of pure, unalloyed pleasure.

Rose had her pony carriage and they drove everywhere together. Mr. Taylor had his yacht and they made such delightful excursions during the long hot days. Mrs. Livingstone was close by in the West End Hotel where Gertrude could see her at all hours, and where too, they often went to hops and receptions. Then she had her letter from Allan and she was becoming conscious of a pleasant change in them.

He no longer wrote in a superior, half-patronizing, sort of elder brother style. It was as if he had begun to recognize a difference in her and addressed her as an equal.

He was making a tour of the Alps and Switzerland that summer, and had a great many entertaining things to write about; and one thing in particular struck her—his letters to her were very much longer than they had ever been, while those to his mother were proportionally shorter. Still, there was never a tender passage in them; not a single word to show that she was anything more to him than she had been in the old days of their childhood.

But all halcyon days must have an end, and so this beautiful vacation time passed all too quickly. September drew on apace and with it the time for returning to school.

(To be Continued.)

--FIVE DOLLARS FOR TWO--

We cannot say that we are greatly in favor of clubbing the RECORD with other papers. But perhaps it would be unwise to adopt any hard and fast rule. The RECORD is not a newspaper in the ordinary sense, though it does give the latest and best news in regard to mining and kindred subjects. Recognizing this fact it may be well that we put subscribers in the way of obtaining a paper that will give to them all the news in the best form. Our readers do not belong to one political party, therefore we do not offer them one choice, but two. For those who are liberals, we are pleased to announce that we have been able to make most extraordinary liberal arrangements with the publishers of one of the greatest of Canadian dailies—the Montreal Daily Herald.

The Herald has achieved a well-deserved reputation for the remarkable value it gives its readers. It is one of the most enterprising newspapers in the Dominion, and in thousands of home circles is welcomed on account of the great interest it manifests in subjects of special interest to the family. It is admittedly the favorite daily of the women of Canada. To the farmer and business man, it appeals through its accurate market price and business columns. To the young men, through the attention it bestows on clean, manly sport. To the lover of fiction, through the excellent stories appearing regularly in its columns. To the politicians through the calm and moderate tone of its editorial expressions.

The Herald also offers, at a nominal figure "THE DOMINION COOK BOOK." In the best sense of the term this is an Ideal Cook Book—ideal in being a practical book a book which the house wife will want to keep constantly by her side and can depend on, because of the simplicity and reliability of every recipe. Throughout its three hundred pages and over there are to be found more than 1,000 recipes, winding up with an excellent chapter on sick room cookery. Following the cookery section there is a department called "The Doctor," in which are receipts selected from eminent authorities, and which will be found invaluable where the doctor is not readily available. Size of page is 5 inches by 8 inches, bound in handsome oilcloth covers. It would be a mistake to confuse this book with any paper bound cook book that would go to pieces in no time.

THE OFFER IS—

MARITIME MINING RECORD, \$1.
MONTREAL DAILY HERALD, \$3.
DOMINION COOK BOOK, - \$1.
\$5.

ALL THIS FOR TWO DOLLARS.

To those who are conservatives we offer the RECORD and the MONTREAL DAILY STAR for a year for the very low price of

\$ 1.50.

The STAR is so well known that it is needless to expatiate on its qualities.

SEND ORDER WITH MONEY TO THE
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Have the largest number of friends of any oils produced for stationary engines.

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- R. S. NEWALL & SON, Limited. -

(Founded by R. S. NEWALL, F. R. S., original patentee.)

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THE CAPELL IS THE FAN

—For the **COAL TRADE**
BECAUSE

- (1)—It allows of one operation, working a larger area than any other fan.
- (2)—It will clean out dangerous and impalpable dust from a mine, by reason of its superior force and positive action.
- (3)—Because it costs less money to install, for every foot pound of actual work done on the mine; and is maintained and run cheaper than any other fan.
- (4)—It is incombustible and cannot burn.
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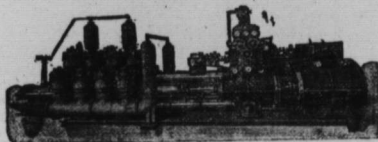
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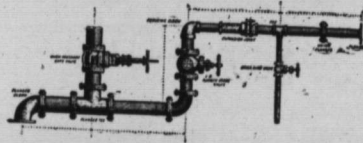
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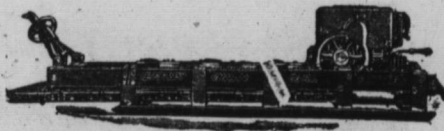


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Fixed Carbon.....	75.29%	67.47%	64.69%
Ash.....	3.75%	3.19%	4.19%
	100.00	100.00	100.00
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