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AND NATIONAL ECONOMIST.

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AND NATIONAL ECONOMIST

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THE IRON QUESTION.

The battle for protection to Canadian industry is, ever yet, by any means. As we have repeatedly said in these columns, the National Policy is still incomplete, and requires to be carried a step or two further. In iron manufactures we have made a good start, but we need not boast too loudly of our situation and progress as long as we are unable to secure the metal itself, and have to depend upon the supply of it from abroad. Within the limits of what may now be called Eastern Canada, say in the latitude of Toronto to that of Sydney, in the Breton, there are many and large deposits of the iron ore, also of coal and of material for making charcoal, all in quantity practically inexhaustible. Nevertheless we make no iron to speak of, and we still stick to the old, foolish plan of sending millions of money out of the country every year to buy for what we should make and easily could make at home. No gift of nature forbids our doing so. Providence has been bountiful in endowing this country with wealth of material; we lack only the will to use it. It is much to be regretted that two years ago, when nearly all other producing interests were considered in the scheme of the new tariff, being effectual was done for the business of iron production. The duty of two dollars per ton on pig iron has not sufficed to start smelting furnaces; nor the 12½ per cent. advance in the duty on bar iron (to 17½) sufficed to start rolling mills. We have caused the consumer to pay a little more for his supply of imported iron, but we have not gone far enough to secure to him the benefit of a new and national supply made at home. It would not be, however, to put all the blame for this upon the Government. The truth is that the Government in carrying the new tariff actually went a good deal further than people generally expected. Up to the very time that the details of the N.P. were announced in the House, not one man in ten the whole country over imagined that the measure would be as large and as complete as it actually proved. Ministers, we doubt not, were even then willing to have gone farther than they did. But public opinion was too backward to sustain them in taking the other step forward; the people were not yet educated up to the point of seeing any Canadian National Policy is still incomplete which does not provide for the production as well as the manufacture of iron. It was really a great step forward that was taken two years ago, and the Government did a bold thing in taking it. That Canadian businessmen were found with courage enough to take such a step was a surprise to people generally, both at home and abroad. It was a surprise to the Canadian public that they had really got the length in 1878 of demanding a National Policy for the country. The chains of a false political economy, forged across the sea, lay heavily upon us; we were bound with invisible fetters, strong to hold down this young country, and to prevent its advance. Under the circumstances it is not wonderful that we should have been unable to start with a complete National Policy all at once.

All this may fairly be considered, in mitigation of blame upon the men who, as we have said, really surprised ourselves, as well as people outside, by being so bold as they were and doing as far as they actually did. But may we not consider, as well, whether the time has not come for taking up what we yet lack, and for taking that other important step forward, which is necessary to complete the National Policy of Canada. Supposing that we are excused for not completing the new system the first time of trying, for the Dominion, the excuse may not suffice for neglecting the duty now. Two years' trial has well vindicated the success of Protection, in the case of all those industries that are really protected. But some important industries have not been protected at all, to speak of, and now the question comes up why these, too, should not obtain the same measure of fair play as the rest. The feeling that the time has come for something more to be done, has been gaining force of late, both in and out of Parliament, and members of the House, to the number of forty or more, have joined in a memorial to the Government on the subject of iron production. Precisely what is suggested as the best thing to be done we are unable to say, but we do know that, among those who have given much attention to the situation and prospects of the iron-making business, there has been a prevailing impression in favor of duties on iron—just half the American duties. These are—on pig iron, seven dollars, and on bar iron, twenty dollars per ton, which at present prices make from 50 to 75 per cent on the value. The Canadian duty on pig iron is \$2 per ton, which is 15 per cent. on British pig metal, and 6 per cent. on American, at present prices; our imports from the States being mostly of the high priced charcoal iron. Our duty of 17½ per cent. on bar iron is only from one-fourth to one-third of the American duty, reckoning the latter *ad valorem*. On iron bars there are different rates as specified in the American tariff—1 cent, 1½ cents, and 1½ cents per pound; the bulk of what is actually imported coming under the description to which the duty of one cent is attached. It will be seen, therefore, that between the Canadian and the American duties a wide margin of difference still lies, and that we may on our side make a considerable increase while still keeping far below what our neighbors consider the right thing for their circumstances. In the fiscal year 1879-80 there were imported into Canada, of steel and steel rails, iron rails, and of bar and other heavy wrought iron direct from the rolling mill or the forge, about 140,000 tons, valued at about \$5,000,000. Of pig iron the imports were nearly 60,000 tons, valued at about \$920,000 in round figures. Of these direct products of the blast furnace and the rolling mill we may call the whole import 200,000 tons, and the aggregate value \$5,900,000. Supposing all this to have been produced at home, it would have caused the payment of five million dollars, at least, for labour. For if we start with the coal and the iron ore, both in the mine and untouched, the value of these materials there is nil, and all the value given to them comes from labor, something, of course being allowed for interest on capital, and for profits. We may very fairly say five million dollars at least, which would be paid out in a year for labor did we make all our consumption of iron at home; for, if we were to take a series of years together, including the time before the depression came on, the average annual value imported would be found much higher than for last year. But even if we did not do quite so well as to add five million dollars annually to wages paid within the Dominion for labor, what a benefit only three millions or two millions thus expended, more than at present, would be to the country. A million dollars in wages means a living for 2,500 families, or 10,000 people, young and old, at least; and five million dollars means the same for 12,500 families, or a population of 50,000. But then there should be added to this many thousands more, for those not belonging to the workmen's families, whose living would come from supplying the latter with the necessities of life. Perhaps these considerations are worthy the attention of statesmen and legislators. Already, from those who can see no better destiny for Canada than that of being for all time dependant upon England and the States for her supply of iron, comes a repetition of the old objections against a patriotic National Policy in this matter. If we put 25 per cent. on pig iron, and 30 per cent. on bars and other wrought iron and steel, that will be taxing the raw material of many iron manufacturing industries, which will thereby be crippled and unable to compete. Unable to compete with whom, we ask? With the Americans chiefly, of course, inasmuch as nearly all manufactures of iron (outside of those

heavy iron productions which go to make up the millions worth of imports above mentioned), now presented on anything like a large scale in Canada, are precisely such as Britain is in competition with our neighbors. Instances railway cars and locomotives, agricultural and other machinery, carriages, stoves, etc., in which our competition is almost wholly with the States, and very little with England. If we protect iron-making by additional duties, then the Americans will be able greatly to undersell us in manufactures of iron, so it is said. But how can they do this, when their duties on imported iron are more than double what anybody proposes for Canada? Oh! but they have cheap iron to work with. It will be replied, and there is where they would have the advantage of us. And pray could not we have cheap iron, too, if we were to do as they have done, that is—add a new home production to the old foreign production, thereby increasing the supply and reducing the price? Since the new Canadian tariff came into operation the complaint has been a thousand times repeated that it puts a burden on our consumers, by preventing them from buying many commodities, iron manufactures included, in the cheap markets of the neighboring States. But if commodities be cheap there, then we have the confession that cheapness and a very high tariff are actually found together. It might look plausible to say that, with increased duties on pig iron and wrought bars, we would be unable to compete with England in manufactures of iron. But the fact being that as above stated, our competition in manufactures of iron—that is, in those specialties upon which we have to any extent entered—is far more with the States than with England, the objectors commit themselves to the position that the States is "a cheap country to live in," as far as the supply of iron goods is concerned. If they like the position, let them take it and we shall be glad to see them stick to it, too.

A REMINDER OF 1877.

The budget debate of this session may be counted as an important victory for the National Policy. Last session the opponents of that policy stoutly maintained that the state of the country had not improved a cent's worth in twelve months, now, the fact of a great improvement is admitted on all hands. It is something to have even this much admitted, if no more, though the question as to what mainly caused the improvement is still hotly debated. According to the speakers on the free trade side of the House, two good harvests and the better American demand for lumber did it all; while on the N.P. side the new tariff is credited with having been the principal cause. The benefit arising from an improved market for lumber is no doubt considerable, and nobody questions the fact. But the important fact should not be lost sight of, that the revival of business has been great in some sections of the country which have but small interest in the lumber trade, and that there has been a great improvement in many lines of business which are but slightly affected by the ups and downs of lumber. As for the two good harvests 1879, 1880, the fact that the crops of these years were good, and that the surplus brought at least fair prices is not questioned. But, as has been pointed out, it is pertinent to remind the public of another fact, which some people appear to be in a great hurry to forget—that of the extraordinary good crop and good prices of 1877. As to the abundance of that year's harvest, let us quote from the *Globe* of July 26th, 1877:—

"From all sides the news reaches us every day that the fall wheat, of which a much greater breadth than usual was sown this season, is not only far above the average in the amount of the yield, but is the finest sample of grain we have seen favored with for a long time. . . . In many places there will be twice the average yield, and from fifty to sixty bushels to the acre will be no uncommon return in many parts of Western Ontario. . . . There is reason to believe that spring wheat will not be much more than an average crop, it reaches that point, though at its present rate of progress it is possible that it may turn out much better than is now expected. The other spring grains are, however, excellent crops. Oats are in many places better than they have been for years, and so are peas and barley, though neither of these are of so much importance as wheat. Root crops promise well, and there is every likelihood of an excellent yield of fine potatoes in spite of the ravages of the Colorado beetle. On the whole, the prospect is a very cheering one for the farmer, and as all classes depend upon him, all will share in the pleasant anticipations he is now fairly entitled to indulge."

After summarizing what the *London Free Press* had said as to the then certain fact of a bountiful harvest, and the prospect of better times in consequence, the *Globe* thus continued (Aug. 6th, 1877):—

"So we are really to have good times, notwithstanding all the organs have declared that the country was going to the

hell, as rapidly as possible, and that only 'Sir John' could be relied on to turn a deaf ear to the *Mail*. It cannot deny that the harvest is good, in spite of the blight. 'It is some satisfaction to know,' it says, 'that they [the Grates] cannot prevent us enjoying the benefits of a bountiful harvest. It would take several million dollars to represent the difference between a poor crop and a good one.' Still, considering whence it comes, this is a very large admission."

On September 21th, 1877, in the course of an article on the appointment of the 22nd November following as 'Thanksgiving Day,' the *Globe* said:—

"Nor is the bountiful field of the harvest field the only cause for thankfulness at the present time. There are signs on every hand that the clouds are breaking, and that before long the depression shall have become a thing of the past, like an unpleasant dream."

These descriptions of the abundant harvest of 1877 do not go beyond the truth, but are well within it. In fact, they do not exaggerate the reality, but rather fall short of it. Other crops were on the whole good, but the fall wheat crop of 1877 was positively the best seen in Canada since that of 1855—twenty-two years before. We make this statement advisedly, and with perfect confidence that it will not be contradicted. That year will be remembered by many people as the year of the fall of Sebastopol (on some date in September), and the close of the Crimean war. Many farmers will remember the extraordinary fall wheat crop of that year, the two dollars or more per bushel which was being paid for it in the early part of the shipping season, and the tumble to about \$1 25 which came when the war was over. There were more than a few Ontario farmers who held their wheat when they might have got over two dollars for it, and who sold it a year or two afterwards at from \$1 to \$1 25. Twenty-two years had to pass, and 1877 had to come, ere there was another such crop of fall wheat in Canada. And in 1877 other crops were good, while fall wheat was extra good. But what about prices—what did that year's grain crop sell for in the market? To answer this we quote the following averages of the Toronto market, for the shipping season in three years respectively, say for the three months next preceding the close of navigation:—

	1877.	1879.	1880.
Fall wheat	\$1 25	\$1 20	\$1 07
Spring wheat	1 15	1 17	1 14
Barley, No. 1	65	70	74
Oats	53	54	54
Peas	66	64	64

The big fall wheat crop of 1877 was mostly marketed at high prices—higher than have been received since—while other grains brought at least fair prices. Now, those who argue that a good harvest and a fair market suffice to bring good times in Canada, are called upon to explain why no good times, or even a semblance of them, followed upon the abundant harvest of 1877. The good prices, too, let us add, continued on far into 1878; it was not until the last quarter of 1878 that a decided fall came. Why did that prosperous harvest year for the farmers—September 1st, 1877, to August 31st, 1878—bring no mitigation of the depression then prevailing? That it brought no appreciable relief we have the best of evidence to prove. When the result of the elections of 1878 became known, the defeated side gave this as a reason—that the country had taken a general craze over the cry of "hard times," and in the excitement of a day, voted for a change of government with the vague unreflecting notion that this particular change might bring relief. If the very abundant harvest of 1877, and the good prices that ruled for twelve months following, had done anything appreciable towards making the times better, the country would have felt it, and Mr. MacKENZIE'S position would have been better than it was. But with all the bountiful harvest, and good prices besides, any mitigation of the depression there did not appear to be. Testimony from the other side is to the effect that, so severely were the "hard times" felt, during the summer of 1878, that the people in a manner lost their senses, and voted in desperation for a change of Government. With the "other side" it now rests to explain why, if the good harvest of 1879 had such a wonderful effect, the far better harvest of 1877 appeared to have none. Why was there no fulfilment at all of the *Globe's* prophecy made after the big harvest of 1877 had become a certainty, that the depression would soon have become a thing of the past, like an unpleasant dream? Mr. FARROW touched on this point on Friday, but not half enough has been said about it yet. The argument raised is a pertinent one, and should be driven home. The failure of the splendid harvest and high prices of 1877-78 to bring good times is something that remains to be accounted for.

ONTARIO RAILWAY BILL
A bill to amend the Ontario Railway Act...

UNESIDED FREE TRADE IN ENGLAND
The free trade movement in England...

EDITORIAL COMMENTS.
The following is a statement of the increase of the Customs returns...

The following is a statement of the increase of the Customs returns of a few cities for February, 1880...

THE SENATE TUESDAY
A statement containing the outline of a bill for the registration of the state of health...

THE NEW YORK WORLD'S WASHINGTON CORRESPONDENT
A long conversation with Prof. Baird about the Hind charges...

THE INLAND REVENUE RETURNS FOR FEBRUARY LAST
The Inland Revenue returns for February last are largely in excess of those of February of last year.

THE NEW YORK WORLD'S WASHINGTON CORRESPONDENT
A long conversation with Prof. Baird about the Hind charges...

CANADIAN AND BRAZILIAN TRADE.
The ventilation of the proposed new trade between Canada and the Brazil has so far been in a dormant state...

According to recently issued British Board of Trade returns for January, the total declared value of exports was 17,318,911, against 16,912,376 in January, 1880...

YACON A RETURN
A return recently published, it appears that the number of British friendly societies or branches, not including branches of orders which print their own forms of returns...

THE SENATE TUESDAY
A statement containing the outline of a bill for the registration of the state of health...

IRON PRODUCTION IN CANADA.

The following is the memorial to the Finance Minister, the subject of iron production in Canada presented Tuesday, the 11th Nov. S. L. Tully, K.C.M.G., etc., Minister of Finance.

The undersigned members of the House of Commons, beg respectfully to address you on the subject of iron production in Canada, and the means to be adopted for establishing this industry on a large scale on a permanent basis, as an important element in building up of the future strength and greatness of the Dominion. While recognizing the great benefit which the National Policy of the Government has even already conferred upon the Dominion, and the still greater mass of good results which it is bound to bring about in time to come, we are nevertheless, deeply impressed with the conviction that the work of beneficial, patriotic legislation, now so begun, requires to be carried still further, and that more is yet necessary to complete it. In the production of iron Canada has already made good progress, and under the new policy is progressing more rapidly than ever before. But in the production of the metal itself, from the ore, and of wrought iron from pig iron, we have as yet made only small beginnings. From the experience gained in these small beginnings, however, it may be drawn, that something important is yet lacking, to wit—the extension of the National Policy so as to bring within its vivifying influence production as well as the manufacture of iron. And we are hopeful enough to believe that from the Government which has so signally benefited the country by establishment of this new policy, and particularly by your own efforts, as the Minister who from official position chiefly to do with such matters, the proper measures in view to this end may reasonably be expected.

Some idea of the magnitude and importance of the trades in manufacturing countries may be had from the following figures:—

Table showing large and value of pig iron produced in the countries named in the year 1877. Columns include Country, Tons, and Value.

In 1878 the production of pig iron in Great Britain was 6,381,051 tons; and in 1879 6,995,837 tons. The average of the last ten years is about six million tons. We may compare Canada with Belgium, which has about the same population as our four millions. The area above shows, with all our vast natural resources and extent of territory, we are behind the little Belgium in the production of iron.

Total imports into Canada of iron and manufactures during 10 years—1870-71 to 1879-80—

Table showing total imports into Canada of iron and manufactures during 10 years from 1870-71 to 1879-80. Columns include Year, Value, and Tons.

This large amount, of ten years importation was made up under—

Table showing the breakdown of the large amount of ten years importation. Columns include Category, Value, and Tons.

It will be seen that for the last ten years the imports of iron, steel and railway iron and steel averaged seven million dollars per annum, and of machinery, general hardware and other iron manufactures, five and a half millions more; or a total average of twelve and a half millions. The question may be considered, whether a greater part of this seventy millions worth might not have been produced at home, instead of being imported from abroad, all this vast amount of money being out of the country to pay for it. But what a gain to the Dominion it would have been had we produced at home only the half of this consumption of seventy millions worth.

What the above figures show may be put in another way thus. Our average import of iron manufactures generally, including machinery, hardware, and such like, is \$3,500,000 per annum. Our imports of the direct products of the smelting furnace and the rolling mill in the shape of pig iron, bar iron, steel, railway iron, etc., average \$7,000,000. What is wanted is something to give a Canadian production of the latter as well as the former.

We may assume that it is not necessary here to cite figures and statements, from recognized authorities, to prove the fact that there are in the Dominion vast treasures of iron ore in great variety, of superior quality, and in quantity practically inexhaustible. It may be taken for granted that yourself and colleagues are well enough aware that in Canada we have iron enough in its natural state, and that there is no question as to the existence of the raw material of excellent quality and unlimited supply within our borders. Nor is there any question either of the fact that some of our most extensive iron deposits are in localities very convenient of access and very favorably situated as regards facilities of transportation. What does appear to be the practical question is, however, the topographical relation of these iron deposits to available supplies of fuel for smelting furnaces and rolling mills. The different kinds of coal used in iron making are these:—bituminous coal and coke, anthracite coal and wood charcoal. From bituminous coal and coke nearly the whole of Great Britain's immense production of iron is made, while charcoal is used in various countries, and anthracite only in the United States, to any extent worth mentioning. East of Lake Superior our coal deposits, as far as known, are all in the Province of Nova Scotia; but within that comparatively small area there are inex-

haustible supplies, of bituminous coal only. Anthracite we might bring from Eastern Pennsylvania, but in our view the effort should be made to develop iron production as far as possible from our own resources entirely. Bituminous coal we have in quantity sufficient; but a main point to be determined is, how best to bring it and the ore together. There are in Nova Scotia considerable deposits of iron ore, lying near to the coal, and there the convenience of the two, each to the other, is not in question. If, however, coal is to be used in connection with the iron deposits in other provinces then the question as to convenience and cost of transportation becomes a practical one. On this point we would suggest that coke, made at the pit's mouth in Nova Scotia, might be cheaply delivered in Quebec and Ontario, at or near the various localities where the principal deposits of iron ore, as far as known, are found. On the Intercolonial and other main lines of railway there are always long trains of empty cars going west, which might just as well as not carry coke to furnaces and rolling mills in Quebec and Ontario, though of course facilities for cheap transportation by water are not to be lost sight of. Coke would be a comparatively clean, light and easily handled, freight, and its transportation westwards, in cars which would otherwise go empty, should not cost much. With a view to the development of an important inter-provincial trade, which would be of large benefit, both to coal mining down by the sea and to iron production along the line of the St. Lawrence and the lakes, the Government might reasonably grant the best facilities and the lowest rates practicable on the Intercolonial Railway. As bituminous coal must be made into coke before being used in the smelting furnace, and as by taking coke from the pit's mouth an enormous saving in weight to be carried would be effected, the advantages of this plan are obvious enough. The supposed disadvantages of having to carry fuel long distances would in fact be reduced one-half or more, by the simple plan of carrying the light, clean, and easily handled coke instead of the heavy natural coal. This relates to fuel for smelting furnaces only; soft or bituminous coal in its natural state being the fuel used in rolling mills, or in the making of bar iron.

With regard to the carrying of coal to the ore, and of ore to the coal, a very general and serious misapprehension prevails. Because in Great Britain and the United States most of the old iron mines and furnaces which have long been worked are in the immediate vicinity of coal deposits, it is popularly supposed that all furnaces are supplied with both ore and coal native to the spot, and that without having the two lying together iron-making cannot profitably be carried on. A few facts will show that while the bulk of the iron production of these countries is from districts where coal and ore are found near together there is in both, but in the United States especially, a large production from furnaces which are supplied with coal or iron ore, or with both, brought from long distances. Great Britain imports large quantities of iron ore from Norway, Spain, Northern Africa, and other places. The quantity of iron ore smelted in Great Britain in 1879 was 15,797,000 tons, and of this 1,417,343 tons, or nearly 10 per cent., was imported from abroad. And the import of iron ore from foreign countries into the United States is now about six hundred thousand tons annually, valued at about a million and a half of dollars. Ore from the Lake Superior region, on the American side, is carried several hundreds of miles to furnaces in Ohio and Pennsylvania; Canadian ore, from the Ottawa district and the county of Hastings, is carried all the way to Crown Point and Troy, in Eastern New York, to the State of New Jersey, to Cleveland, to Pittsburg, and other points even further distant. It is just as easy to carry the coal to the ore as the ore to the coal; nay, easier, we should say, if the plan of first reducing the coal to coke be adopted.

In the Maritime Provinces whatever iron deposits there may be, have the coal so near at hand that there the convenience of the supply is not at all in question. In Quebec and Ontario, however, the cost of bringing coal or coke, as we suggest, from Nova Scotia will always be an important element in the problem of iron-making. Either soft coal in its natural state, or the coke made from it, must be fuel for furnaces and rolling-mills, with which a large proportion of Canadian iron is made, if an iron-making country Canada is to be. But the problem of iron-making in Canada is not wholly dependent for its solution upon the supply of mineral coal from any source. There might and should be a very large production of Canadian iron from charcoal, the material for which exists in superfluous, overwhelming abundance in "this wooden country." It so happens that the principal Quebec and Ontario mines, as far as discovered, are situated close beside inexhaustible supplies of waste timber, which is positively of no commercial value whatever, except for the single purpose of making charcoal for iron furnaces. In connection with the increasing demand for charcoal iron, the importance of this circumstance can hardly be over estimated. Every year the use of iron is extending; every year it is being taken for new uses; and it is a remarkable fact that for these new uses the prevailing demand is for iron of great strength and superior quality, capable of standing heavy and long continued strains. In shipbuilding, in iron bridges, and for many special railway requirements, charcoal iron or other iron approaching it in quality is in increasing demand, and the demand is sure to keep increasing very largely in time to come. Still more remarkably increased would the demand for this kind of iron be, should the time come when Governments, with a view to public safety, shall insist upon the use of the best iron only in permanent constructions of all kinds, as well as in railway rolling stock. In all parts of the same where the use of inferior iron might put life and property in danger. That legislation will more and more take this direction in time to come is certain, and equally certain is it that an increasing demand for high-class iron will be the consequence. In strength and resistance to strain and shock charcoal iron is before all other, and therefore its greatly extended use in time to come is a moral certainty. The bearing of all this on Canada's unequalled facilities for the production of the best charcoal iron, in large quantity, is obvious at a glance. As an exaggerated idea of the importance of anthracite as an iron making fuel appears to prevail with some

people, it may be well to note the fact that in the United States the proportion of anthracite furnaces is decreasing, while the proportion of bituminous coal and charcoal furnaces is on the increase. The New York Iron Age, a good authority, gives the following figures, showing the number of furnaces of each kind in blast on the 1st of January, in the years 1880 and 1881, respectively—

Table comparing the number of anthracite and bituminous furnaces in blast on Jan 1st, 1880 and 1881.

In connection with the statement from which these figures are taken, the remarks of the Iron Age are suggestive. "It will be seen," says this excellent authority, "that the number of charcoal and bituminous furnaces in blast this year is greater than at any time within six years, while the number of anthracite furnaces is less this year than last. One of the most marked features of this report is the large number of charcoal furnaces reported in blast. This (the month of January) is usually the season when these furnaces blow out for repairs, or in accordance with a belief that short blasts are better for charcoal furnaces. This year is an exception to the rule. The chief reason for this is doubtless to be found in the heavy demand for cold-blast charcoal iron, arising from large orders for car wheels made from it.

We come here to a point where there are two things to be put together. First, it is shown that the demand for charcoal iron is sure to be a rapidly increasing one. Next, we have the fact that no country in the world can match Canada in natural facilities for the production of charcoal iron. No other iron mines on the face of the globe have such a vast, inexhaustible background of charcoal timber supply behind them as ours. Already, in Sweden and Norway, the supply of charcoal timber is insufficient, and there being no other fuel for the purpose in the country, in order to save the industry from extinction, the Government has interfered to limit the annual make of iron. Other countries, Spain and Algeria, for instance, have iron ore in great quantity, but neither timber nor any other fuel. The inference is clear that Canada needs but to take the right course to become the greatest charcoal iron producing country in the world. While this should be held established, it leaves untouched the certainty of another fact, that we have within our own borders, and independent of any foreign supply whatever, the material for a production besides of iron from bituminous coal and coke, in quantity to be limited only by the demand for it.

The estimate is made by experts that a blast furnace producing 100 gross tons of iron per day would employ 60 men, at an average of \$1.25 per day wages. This would give:—

Table showing wages and value of product per annum for a rolling mill making 100 gross tons per day.

Such estimates as the above may be extended to the various products of iron, through successive stages of manufacture, showing an immense expansion of work and wages for the industrial classes, and the building up of the country's strength, both moral and material.

The high average of wages paid for labor, in connection with smelting furnaces and rolling mills, and the attraction which such employment would have in the way, both of retaining our own population and bringing in more, is a consideration that may well engage the attention of our statesmen. In actual results, no other immigration policy whatever can equal that of providing the powerful attraction of ready work and good wages, to bring in new arrivals, and to retain those who are already here. Create the work and the wages, and to the place where these are, people will flock of themselves, if no disagreeable circumstances forbid. Even very high wages might not suffice to draw English, Irish and Scotch emigrants or emigrants from anywhere in Europe, north of the Alps, to anywhere in America south of the Potomac, and to keep them there. But in Canada, if only plenty of work at fair wages be secured them, emigrants from anywhere in Northern or Central Europe find themselves at home and contented at once. Not only as a means of increasing population, but also of developing a back-bone of material strength for the Dominion, the importance of making iron for ourselves, in our own country, and from home materials, cannot be overrated. Not alone the labour directly employed in iron-production, but the employment which this industry creates for various interests outside, should be considered. Take for instance one item, the gain to railways and other agencies of transportation alone. Before the Committee of Ways and Means at Washington, last year, evidence was given respecting the outlay made at home by one single industry, that of the production of Bessemer steel, in connection with which the following figures were cited:—

Table showing capital invested and annual expenditure for freight on railways.

Leaving out scrap iron, the Bessemer steel works created a market for the following materials, one year's supply:—

Table showing the materials used in Bessemer steel works.

The interest which railways and other transportation lines have in iron-making at home is no small matter. Making iron abroad creates business for foreign railways; making it at home creates business for our own railways. Above we see the item of eight million dollars paid in one year to American railways and vessels by the Bessemer steel works; were there no such works in America the greater part of this sum would have gone to European railways instead. In the year 1870 the American Congress imposed on Bessemer steel rails a duty of 1 1/2 cents per pound, or \$8 per gross ton. That year the American production was only 30,257 tons, and the home price \$106.75 current, or about \$94 gold per ton. In 1880, ten years after, 917,992 tons were produced in the country, and the average home price was about \$60 per ton. By the duty a large

American production, which otherwise would not have existed at all, has been created through this American production being added to the English production the price of steel rails has been reduced one half. In this case protection has had the effect of making the article, not scarce and dear, as some contend, but abundant and cheap. It would be strange indeed if doubling the capacity of manufacture were to raise the price. The Bessemer steel works of the United States have now an aggregate producing capacity fully equal to that of the English works, and this addition to producing capacity has been wholly created by the duty.

The rise of the Bessemer steel industry in the United States, and its present magnitude and importance, are shown by the following figures:—

Table showing production of Bessemer steel ingots during nine years (1872-1880) and production of Bessemer steel rails, same period.

The Weekly Bulletin, which is published at Philadelphia by the American Iron and Steel Association, states as a certainty that, large as the Bessemer steel production of 1880 was, it will be greatly exceeded in 1881.

It is our firm belief that the way to cheap iron, by the creation of a new Canadian supply, in addition to the existing British and American supply, lies through such a measure of protection as will suffice to bring this new Canadian supply into existence. And from inquiries made we believe, further, that such a measure of protection, sufficient to create this new Canadian production of iron, would be found in the imposition of duties on the following basis, namely:—\$3.60 per ton on pig iron, with a proportionate increase on bar iron and manufactures of iron. But, while asking for this increase of duties, we do not by any means admit that there would be any permanent rise in prices to consumers in consequence. Fortified by the lessons of experience, many times repeated, we hold it certain that a new or largely increased Canadian production in the various lines of iron-making and iron manufacture would soon bring about the result of more abundant supply and lower prices than before. But without a safe and sufficient basis of protection to rest upon, it is idle to expect that capitalists will sink large amounts of money permanently in such costly fixtures as blast furnaces and rolling mills. We have spoken of some small beginnings already made in Canada, but these are only experiments as yet—experiments that may not be very long continued, unless iron making be placed on the same satisfactory footing as most branches of manufacturing industry already are in Canada. The collapse of these new enterprises would be a most undesirable result, and both at home and abroad would injure greatly the prestige of Canada's new National Policy, now in the way of being made conspicuously successful before the world. The present Government has doubtless adopted and boldly acted upon the general principle of building up home industries in the mass by means of protection, with, as we believe, the hearty support and approval of the Canadian people. And what we now ask is that the same principle be extended to the iron making as well as to the iron manufacturing and other industries. We hold that the logic of our country's position requires that we take this other step forward in the path of industrial legislation, lacking which the National Policy still remains incomplete. The present duty of \$3 per ton on pig iron merely adds so much to what the consumer has to pay for it, while it falls short of being enough to benefit him by the creation of a new Canadian production of the article, in addition to the supply from present sources. After much consideration of the subject, we come to this conclusion, that what will best suit Canada's circumstances is the imposition of the proposed increase of the duty on pig iron, with other changes to correspond. And we believe we are warranted in assuring the Government that, were the changes made which we suggest, capital for the enterprise of iron making in Canada on a large scale would be forthcoming at once, and that very soon the success of the new step forward would be established by results. Hoping that the Government may see the way clear to such legislation as is above indicated.

We remain, Your most obedient servants, JAMES DOUGLASS, Chairman.

Edward Haycock, Secretary. March 1st, 1881. Signed besides by nearly forty members of the House of Commons.

The New York Mercantile Journal furnishes the following interesting statement respecting the public debts of the United States:—"The special agent of the Census Bureau has prepared a statement of the indebtedness of all the cities of the United States which have over 7,500 inhabitants. The bonded debt of three hundred cities foots up \$684,000,000. This is an average of a little more than 2,000,000 for each, but a very large proportion of the aggregate sum is owed by a few large cities. Seventy-five New England cities own \$62.18 for each inhabitant, and the average for seventy-two cities in the Middle States is \$16.51, for thirty-eight cities in the South \$35.60, and for one hundred and fifteen Western cities \$32.28 for each resident, while the average for all is \$38.53. If to this \$684,000,000 of municipal indebtedness be added the county debts, which are estimated at \$200,000,000, the indebtedness of town and school districts \$100,000,000, and the State debts \$250,000,000, we have a total burden of \$1,234,000,000, in addition to the national debt. Such amounted on the 1st instant, in round numbers, to \$1,892,000,000. The load of debt which our people are carrying is thus upwards of three thousand and one hundred millions of dollars."

SPRIT OF THE COMMERCIAL AND INDUSTRIAL PRESS.

THE PROTECTIVE SYSTEM AND THE WAR OF COMPETITION

(Chicago Journal of Commerce)

Competition in trade has some resemblance to war, and the Fourteenth century carried out the principles of the Quakers, when they excluded it from their system. But it is the operations of defensive not offensive war, that protective tariff resemble. They merely protect the home market to the native producer, and leave the foreigner to enjoy that of his own country undisturbed. The year the forts which defend our own harbors in the ships which attack the harbors of other countries. What is true is said to be fair, but free trade, because it involves unfair competition, is no more necessarily fair trade than free love is fair love. A nation is not a fair one, where one justice is heavier than the other, unless the latter can carry weight, so a pitched battle in the open field, whether it be a contest between armed hosts or between commercial rivals, is not necessarily an equal antagonism. The army or one set of traders may be more experienced, or better disciplined, or more numerous than the other, and thus the trial of strength becomes unequal. When the veteran troops of Bonaparte met the raw levies of Spain in the vast open plains, they gained an easy victory, but when the French scattered in small detachments, and unacquainted with the country, were waylaid in the intricate ravines and difficult mountain passes, they were destroyed by an invincible enemy. In which of these two cases did the French and the Spaniards fight on equal terms—in both, or neither? The war of competition is subject to equivalent limitations. A protective tariff is designed to equalize the inequalities in each case. There is also another analogy between the competition of trade and a battle—that in both cases the strength and skill of the weaker party count for nothing. Merit is not encouraged by a first prize and a second prize; there is only one great prize and a blank. The French at Waterloo were not few or cowardly, but being surpassed somewhat in numbers and in valor, their bravery did not render their defeat more complete and ruinous. In like manner, if free trade prevailed, and the French manufacturer could not afford cheaper than ten cents a yard the goods which his English competitor sells for nine, it would be security for him that his article was good and the price intrinsically moderate. The result would be, not that he would make nine-tenths as much profit as the Englishman, but that his business would be broken up, his workmen thrown out of employment, and himself ruined. But this result would be as disastrous to France as if her army had been defeated in battle by that of England. The French consumer would gain but one cent a yard, and even that would not last long after the British manufacturer had gained a monopoly control of the French home market; while the French manufacturer and the French operative would lose the whole ten cents, deducting the cost of the raw material. The protective system, by setting the wits of the different nations to work upon the same business tends very much to advance the cause of invention and improvement. This may be shown by a variety of examples. The progress made in the cotton manufacture, within a hundred years, is perhaps the most striking. The manufacture of cotton in India can be traced back as far as historical records extend. The oldest historian, who wrote 400 years before the Christian era, speaks of the existence of that industry in his time. In a work written in the second century, or about 1,700 years ago it appears that the same description of cotton goods were then exported from the same ports in India as in modern times. After the discovery of the passage around the Cape of Good Hope, India cotton began to be imported into Europe in considerable quantities. Although the material was carded, spun, and woven entirely by hand, without any help from machinery, the Hindoos were so dexterous and their wages so low, that no goods of any material, of a similar quality and fit for the same uses, could be made so cheap in Europe. Such large quantities of India cotton were imported into England toward the close of the seventeenth century, that the use of them interfered very seriously with the sale of the English-made goods in the Englishman's home market. In order to protect their own manufactures, Parliament, in the year 1700, passed an act prohibiting entirely the use of India cottons. It is somewhat interesting to see the manner in which Deane, the author of Robinson Crusoe, and one of the ablest political writers of the age, who supported this prohibition, treats the matter. Speaking of India cotton, he says—"It crept into our houses, closets and bedchambers, curtains, cushions, chairs, and at last beds themselves, were nothing but calicoes of India stuff, and in short almost everything which used to be made of wool or silk, relating either to the dress of the women or the furniture of our houses, was supplied by the India trade. What remained then for our people to do but to stand still and look on, and to see the bread taken out of their mouths, and the East India trade carry away the whole employment of the people? What had the masters to do but to dismiss their journeymen, and take no more apprentices? What had the journeymen to do but to sit still, grow poor, run away, and starve? The several goods brought from India are made five parts in six under our price, and being imported and sold at an extravagant profit, were yet capable of underselling the cheapest thing that we could set about. Let no man wonder that Parliament, as soon as they were made sensible of this, came readily into the prohibition." Such was the superior cheapness of India calicoes over any similar goods which could be made in Europe one hundred and eighty years ago, but the prohibition caused the manufacture to be carried on in England, although at first at a disadvantage. A day's labor of an Englishman, although it cost several times as much money as in India, produced no more cloth than the day's labor of a Hindoo. But the attention of an ingenious nation was directed to the business. The genius of Hargreaves, Arkwright and Compton added one invention to another, to be operated by the steam-engine of Watt. Labor-saving machinery gained step by step upon cheap labor, until the cotton goods of India have been driven out of the market of their own country, thus inflicting upon India the destruction of a native industry which had threatened to destroy, and which, but for countervailing legislation by Parliament, would surely have destroyed in England the important textile manufactures of wool and silk. And these inventions can be clearly traced to the protection, under the most discouraging circumstances, of the cotton manufactures of Great Britain against the competition of India goods. A high duty was deemed insufficient, and a complete prohibition was resorted to. Now if India cottons had been admitted into England, Arkwright could never have invented the spinning frame; for the spinning of cotton would not have been an occupation carried

on in England at all during his time. He never would have seen the power, and therefore the idea of its improvement would not have entered his mind. The only shape in which he would have been likely to see cotton, of whatever description, would have been in the shape of finished fabrics from India. We do not expect improvements in ship-building from men whose whole lives are passed in the interior, where ships are never seen, and the art of navigation a sealed knowledge, or improvements in the plow from those Chinese who spend their lives, from birth to death in boats which are never brought to the shore. Successful inventors have generally been men whose daily experience at their work has shown them some defect in its processes, or suggested some more productive mode of reaching its results. Very few great discoveries have been made by chance or by ignorance. They are usually accomplished by persons of competent knowledge, and who are in a search of them. Nothing is so suggestive to the inventive faculty as daily contact with needs of improvement in the arts of reproduction. Where these are not carried on, the latent power of invention is not aroused from its lethargy, because it is entirely out of reach of intelligently perceiving what is lacking, or what is amiss, in the methods of manufacture. The legislation by Parliament, prohibitory of the import of India cotton, established the beginnings of the cotton industry of England, and thus provided those favorable circumstances without which the merits of Arkwright and his competitors would not have had any inducement or suggestion for their career of invention. It was the same with the cotton gin derived by Whitney—an appliance which revolutionized both the cultivation and the manufacture of cotton throughout the world. Whitney was teaching school in Georgia, where the idea of a quicker and cheaper mode of extracting the seed than by manual labor entered his mind through often witnessing the slow, tedious, and expensive method in vogue, but had no cotton been grown in the United States it is altogether unlikely that any suggestion of his machine would ever have engaged his thoughts and efforts. Thus does the protective system help a country to the highest degree of excellence in production, and bestow upon it the most operative of automatic agencies, through the establishment of the beginnings of diversified industry which it effectuates.

RAILROADS AND POPULAR RIGHTS.

(New York Tribune.)

It is a pleasure to see a great public question discussed with vigor, frankness and courage. There is so much demagogism and so much shallowness in current discussions of the more difficult problems of the time, that few or friend, if capable of appreciating real merit, must rise from the perusal of Governor Leland Stanford's letter on railroad regulation with a feeling of great satisfaction. Whether one wholly agrees with him, or wholly disagrees, it is impossible not to feel glad that the subject has been handled with such manifest sincerity and thoroughness of conviction, such singular courage, such complete mastery of the matter in hand, and such breadth and power of reasoning. Mr. Stanford, as is natural, looks at the matter from the railroad owner's point of view. It was time for some one to present that side. With fairness it may be said that there has been a great deal too much attempt to assert and set forth what are loosely called "the rights of the people against corporations." Cheap demagogues in every village, in most of the corner groceries, and in all of the legislative bodies, have been spouting for years, in utter ignorance of the fact that the interests of the people, and not their rights, are at stake. Strip the question of all husks, and it is this: Can the people afford to deprive certain property and enterprises of rights or freedom, in order to wield such control as it is possible for the people to exercise over the means of transportation? Is it for the interests of the people, in the long run and all consequences considered, to take from property employed in transportation the measure of freedom enjoyed by property employed in farming, manufacturing or trading? The correct statement of the question does not answer it, as some hastily suppose. It is possible that there are sound reasons, of public necessity and public welfare, for denying ordinary freedom or ordinary rights to property employed in this branch of business. But one thing is certain. No progress whatever toward a correct decision of the question can be made, until the question has first been correctly stated. All the clatter of shallow demagogues about the rights of the people is as barren, useless, and irritating as the popping of firecrackers on Independence day. In this country the people have now, and will have, all the rights and all the powers that belong to them. The question is whether they can afford to exercise all the powers that they have, or to deprive individuals of any rights that they now enjoy. Governor Stanford maintains that the people cannot afford to deprive those individuals who are engaged in transportation of any part of their property or their freedom. He loses a little time, as we think, in questioning the legal soundness of the decisions of the supreme Court in the granger cases. In a free country, denial of popular omnipotence only stirs up all the demagogues. The railroad companies have generally made a mistake in denying the power of the people to do this or that. What the people want to do, in this country, they will do—wise or unwise, just or unjust, sensible or unsensible. The only way to prevent the doing of a bad thing is to convince the people that it is a bad thing—either unjust or inexpedient, or both. Governor Stanford sets himself to do just what the railroad companies ought to have done long ago. He presents frankly and forcibly the reasons for respecting and guarding the rights of property employed in transportation, and for leaving it as free as property engaged in other business. It cannot be said that his argument upon the legal phase of the question is particularly effective. It all turns upon the plea that the right of eminent domain is exercised only by the state, and only "upon the theory that investment by the railroad incorporators of their time and private property is of a character highly beneficial to the public." Very true, and in order to keep it beneficial to the public, as the State assumed and hoped that it would be, the State exercises, sometimes in charters or grants, sometimes in laws and sometimes through commissioners, its powers of restriction or regulation. All investments must be presumed to have been made in the understanding that the State could and would, if necessary, exercise whatever powers it has to that end. The question of questions is whether it is either necessary, or wise, or just, to exercise power in the modes or to the extent proposed. Upon this question, the argument of Governor Stanford is exceedingly forcible and clear. No one else has made it so plain that railroads have power to the minimum rates only where they have power to charge maximum rates upon business that is not thereby impeded or

checked. By depriving them of power to charge high rates upon freight which easily pays such rates, the state would deprive them of power to give low rates to other classes of business which can exist only if low rates are granted. Still more for this is his argument: that it is always and everywhere the interest of transportation companies to build up new business which will yield a permanent revenue to themselves. In the encouragement of immigration, of agriculture, of development of mines and of manufacturing, the railroads have done, and are doing, vastly more to build up the country and to insure its prosperity than is generally understood. In order to encourage this expansion of industries, it is often necessary for railroads to make donations, because they cannot live if they give to all shippers and to all kinds of freight as low rates as are often given to establish new enterprises. It is well worth while, also, to observe what Governor Stanford says of the practical effect of charges in rates. The consumers, as he urges, do gain comparatively little in times when low rates are secured by competition or by legal restriction. Neither do the benefits go in large measure to the producers. The middlemen or traders reap most of the benefit. It is, therefore, a pertinent and important question whether the advantages which they derive are, with respect to the welfare of the whole community, sufficient to outweigh the disadvantages which result from a policy of restriction. The argument has been clearly and forcibly presented in Governor Stanford's paper, and it must be regarded as a most valuable contribution to the discussion of a difficult question.

THE PACIFIC RAILWAY COMPANY.

(Shareholder and Insurance Gazette)

Now that the question of building the Canadian Pacific Railway has been definitely settled by the Governor's assent to the measures passed in the two houses, we may fairly consider what the effect of it will be upon the country. Since British Columbia entered the Confederation in 1871, the obligation has rested upon us as a people to build the road. Both the great political parties of the Dominion have stood fully committed to this action. In every one of these ten years leaders on both sides have again and again committed not only the country, but their respective supporters to this course. Not only is this the case, but both parties have on every possible occasion committed themselves to the construction of the road in precisely the manner in which it is now to be built—that is, by a company, aided by grants of the public money and lands. As Sir Charles Tupper very properly remarked, he had a right to expect that the efforts of the Government, commissioned as they had been by the almost unanimous voice of the representatives of the people, and crowned with such brilliant success, would have been allowed to pass unanimously. The unanimous adoption of the measure would have followed upon the credit of the country. It would have enabled the company to enter the money markets of the world with immense prestige, and though we cannot conceive of any difficulty arising in the way of floating the necessary bonds, still the unanimous adoption of the measure would have been a grand thing for Canada and for the contractors. The measure has, however, passed, notwithstanding the supreme efforts put forth by the party in opposition. As to the gentlemen who have been entrusted with this great work, many of them are known to us intimately. Of the Canadian members of the company (now no longer a syndicate), the name of the president and vice president are familiar as "household words," and synonymous for everything that is high in character and successful in business. Whether as merchants, bankers or railway men, both have had extensive experience. Their whole record stands out prominently before the public mind as having lent success to all they have ever undertaken. They are men of immense material resources, both rank as millionaires, and this very essential element in business is pre-eminently at their command, and forms an undoubted guarantee of their ability to grapple with the enormous problems to which they have devoted their future lives. We say their future lives, for nothing short of the expression can give an idea of the magnitude of the task to which they have devoted themselves. And here it might be fairly remarked that whatever hope of gain such men may see in the future as the reward of their labor, it ought above all things to be remembered that they are giving themselves up to a task, the faithful prosecution of which will entitle them to all the profit they may derive from the undertaking. Mr. Angus, who is the third essentially Canadian officer of the company, is a product of the best business school that Canada has ever afforded. Mr. Angus entered the service of the Bank of Montreal some twenty years ago, and after a career of unprecedentedly rapid promotion, found himself, while still a young man, at the head of the executive of that institution, shortly before the advent of that period of depression in trade which shook the banking world to its centre, and fell with full severity upon Canadian institutions. How he discharged that duty is a matter of history. Unlike most of the older banking establishments of the country, some of which indeed fell before the storm, and many suffered the severest reverses, the Bank of Montreal came out not only unscathed, but with undiminished prestige, having paid handsome dividends to its proprietors during all that period of distress. The price at which the stock of that mammoth institution, the second or third in the world with respect to its paid-up capital, sells speaks louder than words as to the skill with which her commander piloted her through the breakers into the smooth water of commercial prosperity, leaving her service only when the day of danger had passed away. The past career of all those gentlemen inspires us with hope for the future. Want of space prevents us from glancing at the other prominent gentlemen associated with these Canadians in the great work they have undertaken. They, however, require no eulogy at our hands, their reputation is as world-wide as those of the gentlemen we have named, while the means at their command, through their well known standing, is sufficient to build the road ten times over. And what does the building of the road mean to us in Canada? We might reply by asking what does it not mean? We have the authority of Sir Charles Tupper for saying that these gentlemen mean to have the road built to the foot of the Rocky Mountains within three years. That means that nearly the whole fertile belt of the North West, its valleys and plains, with their inexhaustible resources, will echo to the tread of pioneers within a very brief space of time; that hundreds of thousands of impoverished fellow-creatures will there find, within an incredibly short space of time, homesteads where they will throw off the shackles of poverty, of landlordism and of landlord, and develop, in a generation or two, into sturdy, self-reliant and prosperous citizens. It means also that the burden of securing immigration has been

transferred from the shoulders of the taxpayers with all the disadvantages a government might impose upon labor under, to those of an enterprising business corporation, whose future depends on the success of this matter, and who will go about it in a more energetic way with the utmost economy of means, and the greatest results. Immigration is the most beneficial to the company, and they are not to neglect it. Already, through the exertions of the men of the company, Canada and the Northwest occupy a more prominent position in the public eye in Europe than ever before, and in the ability of their resources, the enthusiasm they have inspired, the influence they wield, and the power they organize all the vast schemes they now carry out, the condition of their existence, the people of the world will recognize in a greater degree than they have the wisdom which has transferred the burden of securing our formidable wilderness, and of constructing our great national work from the backs of the taxpayers to the shoulders of a powerful and laborious class of capitalists.

THE BIGGEST LAKE VESSEL

At Bailey Bros. shipyard, Toledo, is building the largest vessel on the lakes. She will be the first masthead vessel that fresh water owns. Her dimensions are as follows: Length of keel, 265 feet; length all, 278 feet; breadth of beam, 38 feet; depth in shallowest part 21 feet; in deepest part 24 feet 6 inches. She is to be a double-decker, lower deck 11 feet; between deck to spar deck, 11 feet; two upper board boxes, the forward one 27 feet long, the aft one 25 feet long. She is also fitted in solid forward by a solid breast hook, oak timber, 12 by 14 inches, long through and through by 1 1/2 inch iron. She can be locked off by square fastenings. Her deck beams, lower ones, are 10 by 11 inches, her upper deck beams numbering 255 and 200 are 6x6, galleons 6x6, and Kelsons are of the heaviest descriptions to give a good deck beam, 5 feet 8 inches high and 21 inches thick, running through and through. Her mainmast is 4 by 14 inches and will have a monkey rail in forward and aft, and to give the vessel added strength she has one arch or iron bolt that runs around the whole vessel, of 8 inches wide and 1 1/2 inch thick, also a diagonal strip outside of the frame of an angle of forty-five degrees, of iron four inches wide by three-fourths of an inch thick. Her rigging and forecable will be above decks. She is to have windlass and four capstans furnished by the famous patent windlass company, R. I. Her blocks and sheaves are to be all nickel-plated. Her rig of five spars are to be fitted out with square rig on foremast, the other four spars to be rigged with four and aft sails, including three jibs, square foremast, double top sail, main and mizzen topmast staysail. The canvas will spread when it is shaken out to the breeze 5,500 yards. It is expected that she will be in service about March 1st, providing the necessary arrangements can be launched. Her estimated cost will be in the neighborhood of \$25,000, her carrying capacity up will be 140,000 or on 14 feet 6 inches water depth from 30,000 to 35,000 bushels of corn. Her name is St. D. Carrington of the grain commission, Messrs. Carrington & Casey—Lumberman's Gazette.

NEW PROPELLER LINE

Arrangements are now so nearly completed for starting of a new propeller line from the city of Montreal, with the opening of navigation in the spring, that there is no doubt the enterprise will be undertaken. The boats which will comprise the line are chiefly owned in Canada. They are all of the staunchest propellers, of good size and can be easily handled in the rapids of the St. Lawrence. The headquarters of the line will probably be Kingston, Ont. The line is already chartered for all the boats (the boats can carry except dock freight, by a Liverpool firm, and the bulk freight will be grain). The success this season is secured. The point which the grain will be taken is not definitely settled, but will be Cleveland if facilities for loading are advantageously assured here. If not, the propellers will run to Toledo. If the grain is taken here the boats will proceed direct from Cleveland to the city, where they will connect with the Toronto boats. From the canal they will run direct to Kingston, Ont., then down the St. Lawrence through the Thousand Islands, touching at Alexandria Bay, N.Y., Brockville and Prescott, Ont., and at all towns below the Canadian side. The run through Lake Ontario will be during the night, and this will be the only tedious part of the journey, the remainder of the run will be by daylight, and afford travellers ample opportunity to see the most delightful river on the globe. It is very evident that this is the initial step toward a much needed line of steamers touching at the large and important American lake and river ports, and running down the St. Lawrence river. It is in furtherance of the purpose of enterprising Canadians, in enlarging the Welland and St. Lawrence canal locks, to open a capacious water way from the western granaries to Europe, via the St. Lawrence. Those who are interested in the enterprise should take the intention to be early in the field, and invest into a first-class daily line of steamers, if the success promised at the beginning is realized to an appreciable extent. In connection with this enterprise, steamboat men are canvassing the revival of the weekly steamer line to Port Stanley, Ont., on the opposite side of the lake. The business of this line was destroyed when the N.T. boats changed their route from Ogdenburg, N.Y., to connect with the Grand Trunk Railway at Sarnia. All but four—probably three—of the N.T. boats have been sold by Chamberlain, and the line broken up. The line is now open from Cleveland across the lake for an enterprising line to make some money as before. The business in former years was excellent across the lake, and the growth of Cleveland has been such that nothing definite has been settled in this line. The enterprise is occupying the attention of several enterprising men.—Cleveland Leader.

The salt industry of Michigan has been a leading place in the saline production of the world. Works that used to produce 10,000 to 20,000 tons now produce 40,000 to 60,000, by reason of improvements, and the cost of manufacture has been reduced from \$1.50 per barrel to 45 and 50 cents. The operation by the steam process is now producing a larger portion of salt made in Michigan. A comparison of the Saginaw product with that of Onondaga shows that for several years past the former produced largely led the other as a salt-producing point. In 1880 the salt product of Onondaga amounted to 3,000,000 bushels, and that of Saginaw to 1,500,000 bushels. Saginaw is now the largest salt-producing district in the United States. The bulk of this product is consumed in the Western States.

TORONTO PRICES CURRENT.

Table of Toronto prices current, including sections for Groceries, Canned Goods, Hardware, and various commodities like flour, sugar, and oil.

Table of prices for various commodities including Paints, Petroleum, Wool, Hides and Skins, Leather, Produce, Provisions, Salt, Boots and Shoes, and Liquors.

WEEKLY REVIEW.

Weekly Review text covering market news for various commodities such as wool, hides, leather, and produce, including price fluctuations and market conditions.

Additional market news and reports, including sections on vessel freight notes, international trade news, and general economic observations.

Advertisement for WINANS & CO. located at 13 Church St., Toronto, featuring a list of wool products and contact information.

SCIENTIFIC AND PRACTICAL.

ECONOMY IN FUEL

For the purpose of economy in fuel, the Siemens process of electric smelting is...

ANOTHER NEW DISINFECTANT.

Preserving and disinfecting agents have in recent times acquired an importance and scope regarding the methods of using them that could scarcely have been suspected at a relatively recent date.

There are three essentials for keeping ice, as follows: 1. A closely packed non-conducting substance surrounding the ice.

An interesting discovery of a good deal of native crystalline sulphur, of recent formation, has been made during excavation in the Place de la Republique, in Paris.

Ammonia, especially the stronger kinds, is very dangerous, a few drops being enough to injure a person. When used for cleansing purposes it should be handled with great care.

It is only when it is used in a judicious manner that it can be said to be a valuable addition to the arsenal of the chemist.

PRODUCTION OF MALLEABLE NICKEL.

The malleability of metallic nickel has always been an object in the way of manufacturing it. The quality has long been supposed to be due to the fact that the metal in the course of its preparation absorbs oxygen to a greater or less degree.

There are three essentials for keeping ice, as follows: 1. A closely packed non-conducting substance surrounding the ice.

An interesting discovery of a good deal of native crystalline sulphur, of recent formation, has been made during excavation in the Place de la Republique, in Paris.

Ammonia, especially the stronger kinds, is very dangerous, a few drops being enough to injure a person. When used for cleansing purposes it should be handled with great care.

A correspondent of Nature, referring to a recent discussion in that journal, writes: "I think the assumption of the impossibility of volatilizing carbon by any heat which man can produce is not warranted by experience."

INSURANCE MATTERS.

MULTIPLICATION OF FRAUDS UPON LIFE COMPANIES.

Several attempts have been made by insurance companies to have the law amended to their advantage. The most recent of these have been the amendments introduced in the House of Representatives...

The first case of that of a house painter in humble circumstances in Evansville, Ky., named Charles A. Lucas. About the first of last month Lucas was seen to fall overboard from the Ohio river steamer...

The officers of the North-Western Mutual Life Insurance Company, through its Portland agent, for \$8,000, in the course of a few months allegation was made that Moses, while rafting with his uncle on the Columbia river, was drowned.

Another case of false substitution by filling a coffin with sand was unearthed days ago at Fillmore, a village in Andrew county, Missouri. The coffin was supposed to contain the remains of James Biggin, and was exhumed in consequence of well grounded suspicions of fraud.

The Metropolitan Life, of New York, has recently been victimized in a small but audacious way in its industrial department. The offenders are Joseph Adler and Lion Ritter von Hiller, the latter professing to have been an Austrian cavalry officer.

Albert and von Hiller to Justice Wadsworth. The latter remarked that the case should be treated against the defendants in this description. It would be a case of men like the above to a strict justice...

LIFE ASSURANCE.

Opinions of Eminent Men.

Life insurance is not only a human institution, but a Christian one. It is a policy of life insurance is always a policy of profit for the night, and no man should die a family in debt from a policy of life insurance.

Such a society is one of the most beneficent institutions in our land. It is a policy of life insurance is always a policy of profit for the night, and no man should die a family in debt from a policy of life insurance.

Life insurance is not only a human institution, but a Christian one. It is a policy of life insurance is always a policy of profit for the night, and no man should die a family in debt from a policy of life insurance.

Once the question was, can a Christian rightly seek life insurance? That day is gone now, the question is, can a Christian man justify himself in neglecting such a duty?

A policy of life insurance is the cheapest and safest mode of making a certain provision for family. It is a strange anomaly that men should be careful to insure their houses, their furniture, their ships, their merchandise, and neglect to insure their lives—surely the most important of all to their families, and far more subject to loss.

Associations for the assurance of lives are ranked among the very noblest institutions of civilized society, and their usefulness can be attested by thousands of happy and independent families rescued by their means from the bitterness of poverty and the degradation of charity.

The assurance of life is one of the most Christian things that I know of for what it is? It is taking the load that would crush one family, and spreading it over twenty thousand families; so that a mere drop falls upon each, instead of the overwhelming torrent falling upon one.

Life insurance companies not only undertake the equalization of life, but also the return of the money invested with compound interest. They are capitalists, constantly looking out for long investments and well organized to deal profitably in securities.

No matter what may be the object of your soliditude—be assured—whether you are thinking of the maintenance of general health, or of comfort and competence in your old age, or of the interest of wife and children when you may be no more, or of a provision for your boy when he reaches maturity, or of the happy marriage and the wedding portion of your little daughter, one day to be, you have a blushing bride, now a tiny prattling fairy of two or three years—never mind the subject matter—be assured.

The prejudices, so strong and yet so wholly without foundation, which have proved a barrier between so many and the security against the evils of old age which is within easy reach, will in a few years be melted away; and any one doing a fair business, or living on a moderate income, who does not provide against the possible contingencies of ill-health or death, will be regarded as a very rash and unwise man; and the life insurance policy, tested or being what it has been—a thing to be dreaded—will stand like a strong shield between fair daughters, lonely widows, and helpless orphans, and the temptations of vice and the plucking agonies of poverty.

I am free to express my opinion of their value, especially to men in the circumstances in which ministers of the Gospel are. I have wondered that they have availed themselves so little of the advantage of such institutions. I know of no way in which they could so well provide for their own wants in advanced years, or of their families when they die, as by availing themselves of these advantages.

The report that silver in paying quantities has been struck at the McKellar's Island silver mine lacks confirmation. It is not at all improbable that such is the case, but there has been no communication with the island for some time, so far as we can learn.

A surveying party left Prince Arthur Landing, yesterday, for the purpose of locating a railroad line from the Ironstone mine to Port Hedstrom, a distance of about five miles. This is the commencement of the season's operations by the Thunder Bay Iron Co., and we trust will be supplemented by others of equal importance to the mining interests of the district.

RAILWAY MATTERS.

CANADIAN PACIFIC RAILWAY

General meeting of the shareholders of the Canadian Pacific Railway Company will be held at the headquarters of the company, No 18 Parliament Street, Ottawa, Ontario, on Tuesday, the 25th March...

ONTARIO AND PACIFIC JUNCTION RAILWAY

General meeting of the Ontario and Pacific Railway Company is held, who are geographically distributed as follows: From Toronto, Hon. E. W. Mackenzie and Messrs. A. Morris, M.P.P., H. H. Cox, M.P.P., B. J. Jeffrey, and J. D. Edgar...

The Ontario and Pacific Railway Company are seeking incorporation at the present meeting of the Ontario Legislature, and it was unanimously agreed that their bill should be introduced on Monday and referred to the Railway Commission on Tuesday.

CANADIAN RAILWAYS

The following items respecting the Grand Trunk and the Western Railway appear in the circular of W. & A. G. Co., London:

Notwithstanding the exceptional severity of the weather in Canada the traffic receipts of the Grand Trunk Railway continue very satisfactory, and in this respect the Grand Trunk exhibits a marked contrast to English railways, which have suffered heavily.

The 5 per cent interest on the first and second preferences of the Grand Trunk being now provided for, and the third preference earning a dividend, the whole reversionary value of this Chicago Extension practically belongs to the holders of third preference and ordinary stocks.

Manifestations of concerted action amongst large and influential shareholders of the Great Western Railway of Canada have been exhibited, having for their object the closer alliance of their railway with the Grand Trunk, which I have so frequently advocated.

Shareholders of both companies need keep in view not only of the many advantages to be derived from a union, viz.—that a saving of no less a sum than £2,000,000 per annum will be immediately effected.

THE POETRY OF THE LOCOMOTIVE.

A correspondent sends us a copy of our notice of Mr. Reynolds' "Engine-driving Life," the following lines forming part of an inscription on a tombstone in Bromsgrove churchyard, to the memory of Thomas Scaffe, a driver who was killed by the explosion of his engine—

"My engine now is cold and still, No water does my boiler fill; My coals are all its flames no more, My days of usefulness are o'er. My wheels deny their noted speed, No more my sliding hands they need; My whistle, too, has lost its tone, Its shrill and thrilling sounds are gone, My valves are now thrown open wide, My danger all refuse to guide. My clack, also, though once so strong, Refuse to aid the busy throng; No more I feel each urgent breath, No more my sliding hands they need; Life's railway's o'er, each station's past, In death I'm stopped and rest at last."

This inscription is also to be found at Whickham, near Gateshead, where it commemorates a driver who met his death during the execution of his duty. It is stated in both cases that the lines were composed by an unknown friend.

met his death during the execution of his duty. It is stated in both cases that the lines were composed by an unknown friend. Some very good verses by the late Professor Rankine, "The Engine-driver's Life," appeared in the "Railway Magazine" for December, 1862 and were reprinted in the "Railway" of the 27th of that month.

"Darb'low, crash along, Sixty miles an hour."

"Collisions are, long time I bore, Signals was in vain; Down old and rusty, motor bustled, And rashed the excursion train."

It is predicted by railroad authorities that the consolidation of the Texas Pacific, Iron Mountain, International and Missouri, Kansas & Texas roads will be effected within thirty days. It also asserted that the Vanderbilt will soon link the New York Central, Lake Shore, North-Western and Union Pacific roads.

The report of the Delaware & Hudson Company for the year 1880 will show total receipts, \$12,521,519, an increase of \$2,552,500 over the previous year. Net earnings were \$1,611,942, and deducting from that the amount of interest and rentals (\$3,255,020), leaves the net profits \$1,351,422, as against a deficit of \$839,643 for the year 1879.

The Northern Pacific, according to the report of Auditor French, will make a very neat thing out of its land grants. The lands are valued at \$99,750,000, the cost of the road, at a liberal estimate, will be \$75,000,000, leaving a profit of nearly \$25,000,000 to the managers of the road.

By the purchase of several small railroads in the state of New York, the Boston, Housatonic Tunnel and Western Company has facilities in its hand for a trunk line of four hundred miles from the great lake to the International bridge at Buffalo.

Great Western Railway of Canada traffic for week ending February 14th, 1881, was as follows—

Table with 2 columns: Item, Amount. Rows: Passengers, Freight and live stock, Mails and sundries, Total, Corresponding week last year, Increase.

The Railroad Gazette has reports of the earnings of 51 roads for the eleven months ended with November, 1880, having in the aggregate 32,027 miles of road, 3,734 miles, or 13 2/3 per cent more than they worked the preceding year.

The Railroad Gazette has reports of the November earnings of 57 railroads, having an aggregate of 37,063 miles of road, which is 16 1/2 per cent more than the same roads worked in November, 1879, and about 42 per cent of the total in operation in the country.

The scheme for boring a tunnel under the British channel, so as to connect England and France by rail, is by no means given up. Experiments are in progress, and others are to be made, looking toward the determination of the best places for the shafts and the most available machinery.

Articles of incorporation of the Colorado & Pacific Railway Company, with a capital stock of \$12,000,000, divided into 120,000 shares of \$100 each, have been filed with the Colorado Secretary of State.

According to the Railroad Gazette, the total length of new railroads in the United States built in 1880 was 7,150 miles. Of this, 1,453 miles were of narrow gauge (15 1/2 miles 3 1/2 feet, and the balance 3 feet gauge).

A locomotive electric light which has recently been introduced on some of the English railroads is said to be giving good satisfaction. It consists of a light G-horse power four-wheeled locomotive, with a dynamo-electric machine attached, and any electric light may be used.

This locomotive electric light which has recently been introduced on some of the English railroads is said to be giving good satisfaction. It consists of a light G-horse power four-wheeled locomotive, with a dynamo-electric machine attached, and any electric light may be used.

MINING NEWS.

GOLD AND IRON MINING.

The Work in North Hastings during the year 1880

Following the Grand Trunk Railway at Belleville, the P. & N. North Hastings Railway is taken to reach Malton, which place is at present the terminus of the road, although the track is extended for seven miles north to Eldon, but this part is only used to bring ore from the mine.

The Seymour Iron Mine is worked by Mr. C. J. Pusey, for a New York company, and this being the longest worked mine in the district a depth of 150 feet has been reached. The ore from this mine is of the hard or magnetic variety.

North of the last mentioned mine and on the Hastings gravel road, is situated the Waldbridge hematite mine, lately owned by Messrs. Coe, Mitchell & Co., but sold recently to the Bethlehem Iron Co., Bethlehem, Pa.

From this mine Eldorado is reached, which is the present terminus of the B. & N. H. R., and at the end of the line is the once famous ridge on which the Richardson gold mine is located.

Going west the Hobson Iron mine is reached, where Mr. T. G. Hall has at work a force of about thirty men. There are two classes of ore found in this property; one is said to yield 7 1/2 per cent metallic iron, and the other not so valuable.

Taking the road through the woods still in a westerly direction, the Dufferin Iron Mine is reached. This mine was owned by the Ontario Mining Company, represented here by Messrs. Coe & Mitchell until a short time since, when it was sold to the Bethlehem Iron Company.

Going west the Hobson Iron mine is reached, where Mr. T. G. Hall has at work a force of about thirty men. There are two classes of ore found in this property; one is said to yield 7 1/2 per cent metallic iron, and the other not so valuable.

one mixed lode considerable metallic matters and will be treated at the Severn mill in summer. Two men are employed. It is said to give very good yield of gold by assay. Messrs. J. S. Miller and D. L. K. Stewart opened on several other lodes round Malton last summer, and will test the results of their several workings at the Severn mills the coming season.

The Gatling gold mine, now the property of the Canada Consolidated Gold Mining Company, is the scene of new life since the new company took it in hand. A dam on the Moita has been built and timber for a mill of 100 stamps, or a hundred and twenty-five tons per day, and stone for foundations is hauled also, as well as wood for fuel.

At Rannockburn, 12 miles north of Malton, on the Hastings gravel road, Mr. A. S. Brown, of Belleville, has a 20 stamp mill, which is at present working on quartz from Messrs. Matland & Vandeele's mine on lots 4 and 5, 3rd con. Tudor.

The surveyors of the proposed Toronto & Ottawa Railway are now locating the line near Marmora Village, and it is said, have found a line with good grades so far, and it remains to be seen whether this line will go by the old survey south of Madoc Village, or be run through the Moita Valley by Malton and Eldorado, where the great bulk of the pure gold ores are found.

Parties are here now in the interests of the Prince Edward County Railway, which it is proposed to extend to Sterling and Malton; also to large mines in the townships north should they report favorably on the extent of the traffic to be derived from the mines of this section.

Exploring, or prospecting, as it is here called, for new mines has been carried on with vigor during the last year, and considerable area located. The coming summer is looked forward to with prospects of a fair amount of business in excess of last year.—Montreal Gazette.

DUNCAN MINE.

We have before stated that some of the directors and stockholders in the Duncan Mining Co. are also proprietors in the Batavia Mine, in Mexico. Owing to the wonderful success of which, and the strong recollection of that ground, work has been carried on at the Duncan Mine with unusual enthusiasm.

MONTREAL PRICES CURRENT.

Table of Montreal prices current, categorized by Groceries, Coffee, Flour, Molasses, Fruit, Spices, Rice, Salt, Fish, Liquors, and various other goods.

Table of various commodities including Champagne, Drugs and Chemicals, Window Glass, Corks, Leads and Paints, Oils, Naval Stores, Candles, Iron and Hardware, Pig Iron, Tin Plates, Tinned Sheets, Galvanized Sheets, and Steel.

Table of raw materials and finished goods including Cut Nails, Leather, Boots and Shoes, and Raw Furs.

WEEKLY REVIEW.

Weekly Review text starting with 'The event of the week in financial circles has been the sudden and unexpected stringency of the money market in New York...' and discussing market conditions.

Additional market news and commentary, including sections on Flour, Hides and Skins, Wool, and Coal, providing further details on commodity prices and market trends.

the current rates for logging lots... The egg market is steady, at 24c...

Business having occurred today at both... Butter, wholesale prices are as follows...

Manufacturing Industries of Dundas.

(From our Western Correspondent.)

Dundas is a town of from three to four thousand inhabitants and is situated about five miles from Hamilton on the main line of the Great Western Railway...

DUNDAS COTTON MILLS COMPANY,

which is the pioneer industry of the town, and which gives employment to, all told, about 500 hands. The principal lines manufactured here are shirtings, denim, domestics, tickings, bags, etc.

DUNDAS COTTON, YARN AND WARP FACTORY

owned by Mr. J. Mackay, who directs his attention to the manufacture of yarns, warps and bairns. This is a new industry here, being only started in August last...

DUNDAS WOOLLEN MILLS,

who makes a specialty of the manufacture of wool stock. Business is carried on in the premises formerly occupied by the defunct Dundas Tool Company...

MESSRS. A. LENNARD & SONS,

of the Dundas Milling Mills, are doing a very extensive business in the manufacture of all kinds of hosiery, to which they devote exclusive attention.

CANADA TOOL WORKS,

owned by Messrs. McKeechle & Bertram, have a far spread reputation for the excellence of their machine tools, wood-working machinery, etc.

importance of our manufacturing industries, and have projected an improved class of machinery for wood-working and machine shops...

THE CANADA SCREW COMPANY,

have just started operations, and will employ 150 hands, in the manufacture of every description of wood screws, their capacity being 4,000 gross per diem.

DUNDAS EDGE TOOL WORKS,

Mr. R. T. Wilson manufactures chopping axes, hand axes, picks, mattocks, scrub hooks, and railway contractors' supplies generally...

MALT HOUSE

which have a combined capacity of 70,000 bushels each season, and are capable of being increased to double that extent.

THE DUNDAS FOUNDRY

This foundry is owned by Mr. Thos. Wilson who manufactures engines and boilers and every description of mill machinery...

DUNDAS WIRE WORKS

of Messrs. Timothy Greening & Son are situated a short distance outside the town limits, on the Government Road. This industry employs on an average about six hands...

AGRICULTURAL IMPLEMENTS

are manufactured by Messrs. Gurney & Russell, who have extensive shops and provide employment for 40 hands.

THE DOMINION CARD CLOTHING WORKS.

Mr. W. R. Gray, the proprietor, manufactures every description of card clothing, such as filleting, fancy, diamond point, doffer rings, etc.

THE GORE PAPER MILLS

of Messrs. I. Fisher & Sons are situated close to the G. W. R. station, and comprise some substantial buildings of stone and white brick.

consequently, form with their families a large percentage of the population of the place. The great advantage of such a large number of workmen living here should, and does, add materially to the prosperity of the farming community...

From 1848 to Jan. 1, 1881, California mined out 10 gold and silver \$1,137,278,000

The revenues of the Sultan of Turkey are \$10,000,000, of which \$5,000,000 go to the army.

The Austrian census report credits Vienna with 707,537 inhabitants, an increase of 104,118 since 1869

The French senate has passed the bill granting subsidies to merchant shipping, which will soon become a law

It takes about \$2,500,000 to pay the annual expenses of the 20,000 hounds which are said to be owned in Great Britain.

There are now 500 cities in the United States supplied with waterworks, involving 13,000 miles of pipe, 10,000 of which are of cast iron

In a recent sun disturbance a protuberance was thrown up from the surface which was 235,000 miles long, but in a few hours it subsided to only 18,000 miles.

A Paris manufacturer claims to have discovered a process for substituting the leaves of the eucalyptus tree, which, in burning, emit a delicious perfume, for tobacco leaves in making cigars.

The total traffic of the Suez Canal during 1880 amounted to 2,926 ships of 4,319,548 tons, producing a revenue of 33,750,000 francs, thus enormously surpassing the traffic of any year since the opening of the canal ten years ago

The cost of the Suez Canal is said to have been \$92,273,007. The receipts last year were \$5,973,180, and the expenditure, including 5 per cent. interest upon the share capital as sinking fund, \$5,415,542, leaving a balance of \$557,645.

Hearne, land agent to the late Lord Mountmorris, has been fatally shot at Ballinrobe. A band of armed men in Kerry county went to many of the farmer's houses, compelling the occupiers to swear to pay no rents higher than Griffith's valuation.

This year the gross receipts of the Richelieu and Ontario Navigation Company were \$476,629.37, while they were \$439,632.81 in 1879, an increase for 1880 of \$37,000.56. The expenses in 1880 were, however, \$385,908.82, or an increase over the year previous of \$1,260.77.

The defeat of Colley's force on the Spitzkop seems to have been due to the General's over-estimation of the strength of his position, and not to the want of ammunition. General Roberts has been appointed to succeed General Colley, Sir Evelyn Wood meanwhile acting as commander.

It is said that there are 243 spoken languages in India, and including different dialects, 549. The use of the English language, however, is fast supplanting them, particularly among the young. From 8,000 to 10,000 candidates are annually examined at the three great universities of India, and English is the chief language employed.

It is affirmed by the collectors of statistics in regard to intemperance that in the year 1879 there was paid out for intoxicating drinks by the people of Germany the sum of \$50,000,000, and by those of France \$50,000,000, of Great Britain \$750,000,000, and of the United States \$720,000,000—making a grand total of \$2,700,000,000.

The director of the bureau of statistics at Vienna has made some interesting researches concerning the comparative longevity of women and men in Europe. He finds that, out of 102,831 individuals, who have passed the age of 90 years, 60,303 are women, and only 42,528 are men. In Italy 241 alleged centenarian women are found for 141 men of that age

A surveying party left last week to lay out the property on which is the newly discovered gold vein, near Lake Shabandowan, which is known as the mammoth gold location, containing 600 acres. Mr. W. H. Furlong, P. L. S., with several assistants, will be accompanied by Mr. Church, the discoverer, to the scene of operations, which, although only 85 miles in an air line, will necessitate a travel of about 200 miles by the circuitous route which they at present have to take. They expect to be absent about a month.

Notwithstanding additional precautions which have been taken in recent years, the number of boiler explosions in Germany show no diminution. In 1877 there were twenty explosions, killing twenty-one persons and injuring thirty-seven others, fourteen of the latter being seriously mutilated. In 1878 there were eighteen explosions, causing ten deaths and injuring twenty-two persons, five very seriously. In 1879, the last year for which the statistics have yet been made up, there were eighteen explosions, in which thirty-six persons lost their lives and forty-two others were injured, ten being seriously mutilated.

At a recent meeting of the Societe Francaise de Physique, M. Naudet presented an apparatus by M. Ader, intended to show the action of telephonic currents. It is a kind of electro-dynamometer. The current traverses two fixed coils, and a movable one placed between these two; this movable coil is fastened to the end of a magnetizable needle. The rotation axis of this needle is formed of two pieces of metal, each communicating with one of the ends of the wire of the movable coil, and separated by an ivory insulator. The deviation is greater with sharp than with deep sounds, very clear with the sound O or Ou, feeble with I.—Electrician.

Attempts have been made to propel boats on canals and rivers by conducting a column of water through a pipe and ejecting it forcibly at the stern, but they did not prove successful. An Englishman now claims to have got over the difficulty by showing the force exerted by one fluid pouring into or against another depends on the contact of surfaces, and not on the sectional area of the flowing mass, after it be once set in motion. Instead, therefore, of tubes with large orifices, he makes use of tubes with narrow outlet, a mere slit, and thus obtains a large superficial contact by ejecting water through a series of narrow openings.

A soldering fluid which does not occasion rust is prepared in the following manner: Small pieces of zinc are immersed in muriatic acid and left in it until the acid is saturated with it, which may be

known by the cessation of effluvia of the acid, and also by the zinc, after that stage, being left undissolved; add spirits of ammonia, about one-third of the quantity of the acid, thin with a little quantity of rain-water. When, at the time of adding the zinc, if the muriatic acid is heated to a low degree, the solving of the zinc will be achieved sooner. This fluid does not cause rust on iron or steel, and is excellent for all purposes, even for staining.

Keenly awake to the great fishing industry of Scotland, Edinburgh asks for an exhibition similar to the one recently held in Berlin. In comparing the German fisheries with those of Scotland, the immense importance of the latter is manifest. With the exception of the Norwegian herring fishery, the herring fishery of Scotland is the most important in Europe, representing a money value of £3,000,000 per annum. An Edinburgh journal is authority for stating that the annual value of the herrings brought into the stations on the coast of Aberdeen alone is equal to the whole land rental of the country. In 1876 the boats which were engaged in fishing on this Aberdeen-shire station were 2,093, manned by 12,000 men and boys, the vessels being worth some £200,000, the catch affording employment to not less than 10,500 persons on shore. The fishing grounds of the Orkney and Scotland Islands attend mussels, oysters, crabs and lobsters, with haddock, whiting, flounders and cod, but the complaint is made that these waters are not well boayed, and the land deficient in light.

The interest attaching to the experimental borings now being made with the object of deciding whether a Channel tunnel is really practicable or not will increase as the works proceed. Much progress has already been made with the preliminary operations at Abbott's Cliff, Dover, which Messrs. Beaumont & Co. of Westminster, are now carrying on for the South-Eastern Railway Company, in connection with the proposed Channel tunnel. A trial shaft has been sunk, and the tunnel-boring machine, designed and patented by Col. F. Beaumont, R.E. (which will bore the tunnel to its proper diameter at one operation) has been set to work. A quantity of water was encountered in the workings a few days ago, but this difficulty has been overcome. The strata penetrated up to the present time has been of a comparatively soft nature, and those who are superintending the work are of opinion that no difficulty need be apprehended in connection with the ultimate carrying out of the scheme of a tunnel between Dover and Calais.

The St. Catharines Journal, in reporting the preparations being made for the opening of navigation, says the Ocean, Prussia and Celtic will ply between Montreal and Chicago, a boat passing St. Catharines every week. The Persia is getting her annual refitting for the Montreal route, and as usual will do a fine passenger trade. The Ocean is getting more passenger accommodation and is being painted and refitted. The Celtic, which is being refitted in Hamilton, is to have more passenger accommodations than hitherto. Capt. Emerson Wright will leave St. Catharines on the 1st of March for Montreal to refit the Prussia. The California and Africa will next season ply between Montreal and Cleveland, to engage in the carrying trade of smoked meats for the British market; also, to work up a passenger trade between these points. The Dominion is on the dry dock at Blackburn's, and is getting a thorough overhauling under the immediate supervision of Captain Robert McNaugh. Captain Harry Zealand starts on the 1st of March to put a new wheel in the Colabris, and give the ship a complete refitting in the way of decoration. She will ply between Montreal, Toronto and Hamilton.

JAS. ROBERTSON & CO. Dominion Saw Works TORONTO. Circular Saws, Gang Saws, Butting Saws, Cross Cut Saws, Shingle Saws, Mill Saws. Manufacturers of Superior Quality Circular Saws, Circular Shingle Saws, Gang Saws, Mill Saws, Butting Saws, Cross Cut Saws. INSERTED TOOTH SAWS A SPECIALTY. All Saws warranted to be made of Very Best Material, and only First-Class Workmen employed. SAW MILL SUPPLIES OF ALL DESCRIPTIONS. SAWS REPAIRED RUBBER BELTING, LEATHER BELTING. FILES, FILES RE-CUT. EMERY WHEELS, GRINDSTONES, BABBITT METAL, LUBRICATORS, PACKING BELTING, IRON TUBES, WHITE LEAD, ETC. TORONTO WORKS, 253 KING STREET WEST

R. H. SMITH & CO. (Successors to J. FLINT) SOLE MANUFACTURERS IN THE DOMINION OF CANADA OF THE "SIMONDS" SAWS. ST. CATHARINES, Ont. Sole Manufacturers of the genuine HANLAN, IMPROVED DIAMOND, IMPROVED CHAMBERLAIN, and the NEW IMPROVED CHAMBERLAIN CROSS-CUT SAWS. We also make all other kinds of Cross-Cut Saws, Hand Saws from the cheapest to the very best. THE LARGEST SAW WORKS IN CANADA.

GRAND IRON INDUSTRIES

Following paragraph, as to the condition of the iron and steel business in Ohio...

The prospect for iron miners is thus seen to be very favorable, and as three valuable and highly productive mines have passed into the hands of Pennsylvania...

CAUSE OF HEAT IN MINES

An opinion has long prevailed upon the part of many persons that the extreme heat in the lower levels of the Comstock mines, Nevada, is solely due to their great depth...

VALUABLE OLD COINS.

High Prices for Rare Coins and Medals—A Silver Dollar Valued at \$1,000.

Looking over a large collection of old coins and medals, a New York reporter asked the dealer: "What is the oldest coin you have?"

"Here is an Aegina coin dating 700 years before Christ. It is a didrachma, and was a very common Greek coin. It is worth about \$6."

"Only \$6 for so much antiquity? How is that? Does not a coin become more valuable according to its age?"

"By no means, unless it is rare and in demand as well as old. Many old coins are comparatively plentiful. Here are coins at least 2,000 years old that can be bought for 75 cents, \$1 or \$2."

"How do you know they are genuine?" "By the same tests that manuscripts and traditions and historical facts of all kinds are authenticated. There are societies not only in New York, but in Philadelphia, Boston, Pittsburg and other places, where they make a study of these things. There is no more trouble in authenticating an ancient coin than any other object of antiquity."

ing the times well as the fact. Some of the medals that have been coined to commemorate various events are the most beautiful specimens of the art...

What are the chief coins of the United States that are worth more than their face value? The silver dollar of 1874, with a design of a woman...

How about the famous liberty pennies? There are many varieties, and their value varies from 10 cents to \$10, according to the perfectness of the stamp. There are several kinds of the issue of 1793...

Many are worth more than their face. The \$20 of 1819 is worth \$50. All the \$10 gold issues from 1795 to 1801 are at a premium of from fifty cents to \$2...

What is the most valuable modern coin? "It is the Confederate States silver dollar, which is valued at \$1,000. There were only a few of these coins struck. The Confederate Government had the dies made, and a few coins were struck at the New Orleans mint for the inspection of the Confederate officials..."

"Yes; here is a Cromwell shilling that is only worth \$10. Here is an Athens tetradrachm which is worth only \$10, though it is 8,000 years old. Here is one about 600 years older, worth \$15."

"There are some very curious ones that are celebrated, like the English coin that gave rise to the couplet: 'Cooling and billing like William and Mary on a shilling.' The most celebrated in the history of American coin is the series that was issued to signalize the opposition to and support of the United States bank in Jackson's time..."

The first American money was the pine tree shilling, coined in 1652. For 15 years they were all coined under the same date, so if a man has a pine tree shilling, he don't know when it was made. They are worth but about \$4 or \$5.

In the year 1815 there were no cents manufactured. It being just after the war of 1812, the Government had not settled down to business, and the mint made but very little money. Some persons, ignorant of this, and anxious to make a collection, offer large sums for a coin of this date. This makes a demand, and the demand calls for a supply, so there have been cases where the cent of 1815 has been altered so as to almost defy detection. Again, the silver dollar of 1804 is sought after, and counterfeiters have succeeded in making a coin very similar to the original.

An Austin (Tex) telegram says the sheriff of Lander county has looted on three freight and one passenger train of the Central Pacific railway, to satisfy judgments amounting to about \$24,000, for delinquent taxes for 1880, due from the company. As fast as the trains come in they are taken possession of by the sheriff.

M. C. Bede, formerly professor at the Liego University, has recommended the use of phosphor bronze for wires, instead of iron, phosphor bronze having four times the conductivity of iron, and being from three to four times as strong as steel. Aerial lines had the advantage of being easily inspected, but the disadvantage of being liable to accident, while underground lines are almost free from accident, but difficult of inspection. That inventor would render great service to the telephonic communication who should devise a cheap method of constructing underground lines, that should at the same time permit of easy and complete inspection.

POSTAL TIME-TABLES.

Post Office, Ottawa.

Table with columns for Arrival and Departure of Mails, listing various mail services and their times.

Registered letter must be posted half an hour previously. Office hours from 9 a.m. to 4 p.m. For Savings' Bank and Money Order business, 9 a.m. to 4 p.m.

Post Office, Montreal.

Table with columns for Delivery, Mails, and Closing, listing mail services for Montreal.

Registered letter must be posted half an hour previously. Office hours from 9 a.m. to 4 p.m. For Savings' Bank and Money Order business, 9 a.m. to 4 p.m.

RAILWAY TIME TABLES.

Canada Central Railway

CHANGE OF TIME. On Monday, June 23rd, 1880, the following trains will run as follows: ...

ST. LAWRENCE AND OTTAWA RAILWAY.

On Monday, June 23rd, 1880, the following trains will run as follows: ...

For the East, West, South and South-East 11:15 a.m. For the East 4:00 p.m. For both East and West 10:30 p.m.

Q. M. O. & C. RAILWAY.

Table with columns for Mixed, Mail, and Express, listing train schedules for Q.M.O. & C. Railway.

(Local trains between Hull and Aylmer) Trains leave Mile End Station seven minutes later. 247 Magnificent Palace cars on all passenger trains and elegant sleeping cars on night trains.

INTERCOLONIAL RAILWAY.

SUMMER ARRANGEMENTS, commencing 14th June, 1880. Through Express Passenger Trains run daily (except Sunday) as follows: ...

DUNDAS FOUNDRY AND ENGINE WORKS.

ESTABLISHED 1838. THOS. WILSON, MANUFACTURER OF STEAM ENGINES, BOILERS AND ALL KINDS OF MACHINERY. DUNDAS - ONTARIO.

TO MALTSTERS.

THE undersigned beg to inform maltsters and the trade that, having lately added new and powerful steam machinery for the special purpose of weaving extra strong STEEL WIRE CLOTH for malt and drying kiln floors...

TIMOTHY GREENING & SONS, DUNDAS, ONT. (18-25)

TO LUMBERMEN.

The undersigned is prepared to quote prices to Lumbermen for shanty and all other description of Blanks. Money can be saved by purchasing direct from the manufacturer.

PETROLEUM.

THE BRITISH MARKETS.

ARTHUR BROWN & CO'S PETROLEUM REPORT. LONDON, February 14th, 1891.

Refined Petroleum Oil.—The value of spot improved about 1/4 per gallon early last week, and the advance has since been maintained, the trade however, continue to buy very sparingly. For the month a very large business has been done, with fluctuations of about 1/4d. Prime and Standard White Petroleum on spot, sold at 10 1/2d to 11 1/2d. Month at 8 1/2d to 9d. Marched to 7 1/2d. September and December quoted 8 1/2d.

The following arrivals have taken place since our last—Sherwood J. Ann, C. H. Marshall, and Kinloch, bringing together 29,582 barrels.

Today's market closes firm, spot 11d to 11 1/2d. Month 8 1/2d to 9d.

Naphtha.—Easter, 11d for ordinary, 11 1/2d to 12d for refined.

Coal Oil.—Little doing. Turpentine.—Quiet, 35s on spot. March and April 34s to 35s, Mar. 23s 9d to 34s.

The stock at wharves to-day is 12,649 barrels. The deliveries for the past week 541 barrels.

PETROLEUM OIL.

Table with columns: Prices of S. W. Petroleum, Refined, Crude, 1891, 1890. Includes rows for Stock this day, Landed last week, Delivered last week.

COAL OIL.

Table with columns: Refined, Crude, 1891, 1890. Includes rows for Stock this day, Landed last week, Delivered last week.

ABOUT LOCOMOTIVES.

The numerous and large orders for locomotives which have been given out during the last few months have animated a branch of trade which had been unduly depressed. In the keen competition which has taken place during the last five years, the advantage which some manufacturers have had over others in their better plant and organization has been plainly demonstrated, for profits have been earned out of prices which barely pay cost to makers less favorably situated. The improvement is not confined to this country, but on the continent also the railway companies have ordered largely, while in America the principal firms, though making more engines than ever before, are unable to keep pace with the orders offered to them. In regard to wagons and carriages, so many are built by the principal English railway companies themselves, and the new factories since 1870 are so numerous that, notwithstanding the large quantities of new stock now being built, the prices obtainable by private firms are still very low. The use of iron and steel in the under frames, and even in the bodies of railway wagons, seems, Messrs. Matheson & Grant say in their "Engineering and Trade Report," to be extending, and the American method, which has been adopted by some of the leading English companies, of supporting long passenger carriages on bogie trucks, is likely to become more general, even though in regard to the bodies of the carriages the English type is retained.—Engineer.

HOW TO PREPARE CALCIMINE.

Soak one pound of white glue over night, then dissolve it in boiling water, and add twenty pounds of Paris white, diluting with water until the mixture is of the consistency of rich milk. To this any tint can be given that is desired.

Lilac.—Add to the calcimine two parts of Prussian blue and one of vermilion, stirring thoroughly, and taking care to avoid too high a color.

Brown.—Burnt umber.

Grey.—Raw umber, with a trifling amount of lamp-black.

Rose.—Three parts of vermilion and one of red lead, added in very small quantities until a delicate shade is produced.

Lavender.—Make a light blue and tint it slightly with vermilion.

Straw.—Chrome yellow, with a touch of Spanish brown.

Buff.—Two parts of spruce or Indian yellow and one part burnt sienna.

Blue.—A small quantity of Prussian blue will give a soft azure tint. Dark blue is never desirable. Delicate tints in the foregoing varieties of colors are always agreeable and tasteful, and so great care must be taken that they are not too vivid. The tints will always appear brighter than in the calcimine pot, and the workmen or workwomen must keep the fact in mind when adding the coloring powders. It is a good idea to give the ceiling a calcimine two or three shades lighter than that of the walls, so it may appear merely a delicate reflection of their deeper tones. The ceiling may be calcimined with the lighter tint, and then more coloring added for the walls. For other walls than hard finish an excellent whitewash is made by slacking lime with boiling skim-milk and adding (for half a bushel of lime) three quarts of salt, half a pound of whiting, and a pound of white glue, previously dissolved in water. This is a hard and durable whitewash, does not easily rub off, and when tinted with any of the foregoing shades, has about as good an effect as calcimine. A beginner in the art of calcimining is apt to bestow half the material on the floor, which is a needless waste. By taking a small quantity on the brush at a time, all splashing is avoided, and after a little practice barely a drop will fall on the floor. A bright day should be selected for the work. The wash must be of the proper consistency—rich talk—or it cannot be applied evenly. Two strokes should be straight and parallel with each other. After the first coat is dry, and never before, apply the second one across the first. An expert workman leaves no touch of the brush visible. When applying the first coat a round palm-brush should be used for thoroughly covering all corners and small spaces with the wash.

THE MONEY MARKET.

TORONTO STOCK REPORT.

Table with columns: BANKS, Capital subscribed, Capital paid up, Rest, Dividend last 6 months, Closing Prices March 2. Includes rows for Canadian Bank of Commerce, Dominion Bank, Hamilton Bank, etc.

DEBENTURES, &c

INTEREST PAYABLE.

WHERE PAYABLE.

Table with columns: Debentures, Interest Payable, Where Payable. Includes rows for Dominion Government stock, County (Ontario), City of Toronto, etc.

MONTREAL STOCK REPORT.

Table with columns: NAME, Value, Capital subscribed, Capital paid up, Rest, Dividend last 6 months, Closing Prices March 2. Includes rows for British North America, Canadian Bank of Commerce, etc.

—A meeting of the Land League was held at Dublin on Wednesday. Detectives outside took note of all who attended. A letter from Egan was read which stated that the Paris press of all shades of opinion cordially endorsed the league. Dillon read a telegram from Parnell, advising the league to postpone the meetings which were to be held on Sunday, as it was desirable that the terms of the land bill should be known before the meetings were held.

—The National debt statement of the United States for January, shows the decrease of \$7,382,167 71. The statement notes the following particulars: Cash in the treasury, \$221,674,535.68; gold certificates, \$6,510,480; silver certificates, \$46,800,220; certificates of deposit outstanding, \$4,630,000; refunding certificates, \$887,250; legal tenders outstanding, \$346,681,016; fractional currency outstanding, \$15,520,433.12; less amount estimated as lost or destroyed, act of June 21st, 1879, \$8,375,231, \$7,144,499 12.

—An invention has recently been patented to prevent the explosion of steam boilers by placing a partition across the boiler slightly above the water line, providing an opening through this partition, which is adjustable, and through which the flow of steam can be regulated to be equal to the average intermittent flow required for the engine. It is claimed that this prevents dangerous variations of pressure on the surface of the water, hence preventing explosions. It is an American invention.

—Five new glass works were started in Ohio last year, and several more will be added this year. The latest official statistics give 19 firms engaged in glass manufacture, with 32 furnaces, having 292 pots, and employing 2,032 men. In the production of window glass there are employed seven furnaces with 66 pots, 61st glass, 19 furnaces with 199 pots; green glass, four furnaces with 27 pots. The glass works are at Belleaire, Columbus, Ravenna, Kent, Zanesville, Steubenville, Martin's Ferry, Bridgeport, La Grange and Newark.

—The North Bridge Railway directors' report, which was laid before the shareholders the other day, re-

commends the company altogether to abandon the undertaking and realize assets. They state they have been guided to this course by the Tay Bridge Commission report, which indicated that the board of trade requirements for estuary bridges would entail much greater expenditure than contemplated by the company. All contractors' claims, with one exception, have been settled. The total expenditure to date amounts to over £100,000.

—An American exchange says—The year just closed has been a remarkable one in many ways. In production it was never equalled in this or perhaps any other country. The imports and exports of the United States aggregated \$1,670,000,000. But this foreign trade expresses only a fractional part of the country's prosperity. We raised last year 450,000,000 bushels of wheat, 1,500,000,000 bushels of corn, 413,000,000 bushels of oats, 1,000,000 bushels of rye, 40,000,000 bushels of barley, 500,000 bales of cotton. These are only the leading articles. If tobacco, petroleum, sugar, rice, fruit, cotton seed, and other agricultural and mineral productions were added to the list, the sum total would be enormous.

—The annual meeting of the shareholders and patrons of the Thames Cheese Company was held on Tuesday last in the Hall at Nisleton. The Auditor's report was read which showed that during the year past there were delivered to the factory 2,182,704 pounds of milk, from which was manufactured 217,568 pounds of cheese. The average quantity of milk to make one pound of cheese was 10.03. The amount received for cheese was \$25,302 17, being an average price of 11 63 cents per pound. The report, which was considered highly satisfactory, was, on motion of Peter McClary, seconded by W. Edwards, received and adopted. The following directors were elected for the ensuing year.—Messrs. J. Gilmour, D. Beverly, N. Engle, E. S. Jarvis, J. McClary, J. Craighton, and T. Morehouse. After which the directors met and organized as follows.—James Craighton, President; James Gilmour, treasurer and salesman, and E. S. Jarvis, secretary.

DOMINION TRADE REGISTER.

INDUSTRIAL DIRECTORY.

AGRICULTURAL IMPLEMENTS. A. S. WHITTING MANUFACTURING CO. Cotton Brokers. Cotton Mills. Dundas Cotton Mills Co. Hamilton Cotton Mills Co. Edge Tools. Engines and Boilers. Files. Furniture. Glassware. Glove Manufacturers. Hubs, Spokes and Bent Goods. Iron Works. Knitting Mills. Leather Belting. Organ Builders. Paper Manufacturers. Saw Manufacturers. Scales. Spices, Etc. Stereotypers, Engravers, Etc. Telephone. Wire Works. Wooden Goods. Woolen Manufacturers. Wools and Cotton Yarns.



—At the last Paris exhibition considerable attention was drawn to some mullin curtains to which a dye was constantly applied without setting them on fire. The chemical composition of the substance which rendered them incombustible, as recently made known, was 80 parts pure sulphate of ammonia, 25 of carbonate of ammonia, 30 of boracic acid, 12 of pure tartar 20 of starch, and 1,000 of distilled or pure water. The materials to be rendered fire resisting are dipped in this solution while it is hot, so as to insure thorough impregnation, and, when well dried, are ironed at ordinary starched fabrics.

THE DRY GOODS TRADE.

The Dry Goods Trade. From our sources - The tardiness of the trade can be attributed to no other cause than the inclemency of the weather, which, notwithstanding the few mild days we have had, has not been such as to dissipate the ice and snow, which still enshroud a large portion of the territory of the interior and West, rendering traffic between the intermediate points and the East slow and difficult. Doubtless this will soon be obviated, as we are nearing the close of the month when a general breaking up or thaw may be naturally looked for. For cotton fabrics the market remains very firm and steady, with no signs of weakness, except for a few winter goods of values of outside or inferior makes of goods, as caused by little fuller supplies and their retarded circulation on account of the disagreeable weather. As these exercise no governing influence, they have little or no effect upon the condition of the general cotton goods market, which is strong and active on all essential points. The leading corporation brands of brown, bleached and colored cottons are not only very firm and steady in selling values, but are closely placed up and ahead that jobbers experience considerable difficulty in getting their orders filled promptly. Comparatively speaking, there is no stock of these goods worth speaking of in first hands. Agents whose weekly receipts average from 1,500 to 2,000 sales have not 200 bales on hand. This example or case is by no means an isolated one, but seems to be true of the majority of our leading cotton goods commission houses, who represent well known standard makes. With a few days really active trade on their part, supplies would be very thoroughly cleaned up. The fact is, all popular makes of cottons are in first-class shape, and no one appears to have any stocks of moment on hand. The position of the market is such that instead of indicating the slightest tendency to weakness in the selling values of desirable corporation brands, there is every element in the present situation to maintain them firmly and steadily. Yet, notwithstanding this, many buyers are here who are holding off and cranking for lower prices, on account of the unfavorable weather and the seeming quietude of trade in commission circles. Probably the efforts of these would have some effect were supplies in a less satisfactory condition, but as it is they have little or no weight, as agents are content to await the opening of a more general demand as soon as the weather moderates, and which cannot generally be much longer deferred. In gingham, dress goods, etc., of the most popular styles, a steady and enlarging distribution from first hands has continued to take place, and all the leading makes are closely sold up at the firm current prices. In prints there has also been a fair package movement in such specialties as sidebands, gingham plaids, patchworks, etc., also in wide prints, including monies, percales, foulards, cambrics, etc. Of dark work the supply is reported to be very moderate with agents. In men's wear woollens, new business with commission men, while showing some little increase, has not been up to expectations, but on the other hand has moved along during the week slowly and quietly. However, with the increasing presence of buyers for the clothing and jobbing trades, a more active business is looked for in the coming one - especially in spring goods - the residue of many stocks of which will no doubt be cleaned up. Good fair styles of light weights maintain their continued firm position, and doubts will do so to the extreme close of the season, as the season's product of these is well placed up, with doubtless none to carry over. With less desirable fabrics the case, however, may be somewhat different, and we may witness, as usual, the closing out of odds and ends at prices favoring the buyer more or less. In heavy weight goods for the fall season some few openings have been made, but the exhibition of samples has by no means become general, nor is it likely to be so much before the 10th to 15th of next month. Spring goods must be more fully gotten out of the way before much will be done in fall weights. It is much too early in the season to speculate any with regard to the future of trade in this direction. From the present backwardness of the season it is quite probable that general trade will not exhibit any particular rush or activity much before the first of April. Since the subsidence of the speculative era of last year there seems to be more of disposition on the part of buyers to return to the usages or customs which obtained before the war - that is, for merchants not to anticipate their wants so largely in advance of the season. This buying goods in January or February, which will not be cut up until May or June, may be all very well in times of scarcity of supplies, or when market values are advancing and are likely to be maintained at a high point; but when goods are plentiful and prices steady there is no need of such haste. With less rush or impetuosity of demand, manufacturers have more time to fabricate their goods, and use greater care. The jobbing trade, though not fully opened or actively started yet, is gradually but steadily increasing in volume. Buyers are beginning to arrive in fair numbers from the South and West, though as yet, on account of the cold weather, they are not taking hold very briskly as regards the purchase of general supplies for spring, but are looking around and assorting up or picking out their stocks for current requirements. However, in the coming week more active business is looked for. Jobbers have very fair assortments, but no surplus as a rule in any department beyond the needs of a good healthy trade. In leading brands of staple cottons they experienced some difficulty in getting their orders filled promptly, on account of the limited supply of the same in agents' possession. For inferior brands of the same the supply seems to be ample for current wants and orders are filled without delay. Wednesday last was considered the best day of the season so far, and considerable sales of staple and reasonable goods were effected. All the leading houses report the outlook for spring trade as being very favorable for a legitimate and healthful distribution of supplies. Business appears to be once more resuming its regular channels and getting back to the order of the days prior to the war. Speculation of late years has driven the jobbing trade out of its wonted course, making people buy in January and February when they were formerly wont to do so in April and May. One great drawback to trade yet is the deep snows in the West, and until they are melted and traffic communication are rendered less difficult, we cannot reasonably expect much business from the retailers of that section. If personal selections have been unusually light for some time past, mail orders have been coming in more freely than ever. These call for very varied assortments of goods, showing that retailers' stocks are much broken. Collections also have never been better. They are coming in splendidly from all sections of the country. There is no speculation on any side, but on the other hand everything bespeaks a legitimate, conservative and healthful

demand for goods, which is likely to spread over a longer given time than usual. The market is in very fair condition, with prices firm and likely to be maintained on the basis of the current quotations, unless jobbers get weak-kneed and break them, which is not at all likely in the present state of affairs. Many leading articles, of both foreign and domestic goods, are selling low, because bought at low prices. There being no speculation, jobbers, in view of the active competition prevailing, are not inclined to hold goods for better prices; but, on the contrary, are ready to take a fair profit on cost, notwithstanding the fact that they know they will be unable to replace the goods at the figures at which they are selling them. In silks probably trade has been the most active of any of the departments, simply because large quantities were bought last year at ruinous prices to the manufacturer when the market was overstocked, and are now being sold at a moderate advance upon their cost with full knowledge that the same cannot be duplicated at or near the figures at which they are jobbing. In some kinds of dress silks prices are 25 to 50 per cent below what they were jobbed at last year, and for the descriptions most actively in demand there is at least 10 to 15 per cent difference between this and last season's figures. As an illustration of the condition of the silk goods trade in jobbing circles, we instance fancy summer silks, which brought last year 45c and 47c per yard, which are now being jobbed at 37c, while the duty upon the same is 60 per cent, to say nothing of the commissions. The result of this is that the manufacturer gets nothing for his goods and has to pay expenses besides. This has stopped the production of this class of silks on the other side, so that not a single piece is coming through the custom house. We could instance many other cases of almost like nature, but want of space prevents in the present issue. However, we propose to refer to this subject more fully in our next. The market for cotton goods in the earlier part of the week ruled quiet in consequence of the intervention of a holiday and the weather being more or less stormy. However, toward the close there was a very perceptible improvement in business in jobbing circles, owing to the continued large influx of buyers. The leading hotels now seem to be pretty well filled up with the retail dealers of the country, and with an improvement of the weather, must soon lead to a very active piece distribution of all kinds and classes of cottons for the spring and summer seasons. The demand for brown sheetings from both first and second hands has ruled somewhat moderate, though with jobbers showing material improvement. For bleached cottons there has been a continued fair movement on back orders for the leading corporation makes. Stocks of the lower and medium qualities are now in a little better supply, but prices are being firmly maintained on all the leading makes of both brown and bleached. Colored cottons, such as denims, ducks, drills, tickings, etc., are generally closely sold up at firm figures in first hands, and jobbers are commencing to make a fair distribution of the same. Chevots, checks, stripes and osenbergs have been moved in accordance with the increasing wants of the retail trade, and in the finer qualities are well sold up in first hands. Corset jeans, satteens, roll and glazed cambies and wigans continue steady in price, and are in somewhat better movement from second hands. Italian cloths, sleeve linings and silences have been in moderately fair request for small lots at the current quotations. Cottonades, aside from deliveries on former orders, have been more or less quiet with agents. The piece trade, however, in these goods has been improving. Prices are firm and unchanged. Gingham continue active in both first and second hands and the demand seems to include all styles and qualities. In cotton dress goods of the most desirable makes, agents have made a good distribution of their spring work, and jobbers are now beginning to dispose of fair quantities of the same. Lawns, monies, cretonnes, foulards, pliques, etc., have also been in better piece inquiry. In prints, aside from a satisfactory movement in sidebands, gingham plaids, robes, patchworks, and some other specialties, trade with agents has ruled moderate. With jobbers, business in this line, while not so active as it might be, has been steadily enlarging. For printing cloths there has been a fair request on the basis of 4 1/2 plus 1/2 of one per cent, to 4 1/2 for extra 6x24 cloths and 3 1/2 for 5x100 picks.

THE FUR TRADE.

A correspondent of the Hat, Cap and Fur Trade Review, writing from London says - The public fur sales held here from the 20th to the 25th of the month have been attended by many foreign buyers, principally French and German, who have shown a satisfactory demand, there were also ample orders from America and Russia, consequently the sales were animated, and for the more important articles, resulted better than was expected. The Hudson's Bay Company offered beaver, musquash and rabbits, as follows: Beaver, 108,536, against 107,878 in January, 1880. Though this article continues fashionable in France and the larger cities abroad, European buyers did not favor an advance on account of the possibility of an early change in public favor and because sales have been made with difficulty in Russia and Germany on account of high values. Prior to the sale, however, it became known that American firms had given orders for beaver in unexpected quantities. American firms were the most important purchasers, France being next. The German fur merchants chiefly bought large skins for Russian trade, and smaller sorts for retailing and dressmaking. Prices for large skins advanced 15 per cent on last January, smaller sorts from 5 to 10 per cent. Catalogue included Beaver, 24,695, last January, 21,872. Their collection shows increased quantities compared with the past four years. The present amount found ready buyers for American, French and German consumption, at nearly the same prices realized by the Hudson's Bay Company. Musquash, 1,166,289, last January, 992,070, the collection embraced a good number of choice assorted skins of all kinds, and though the quantity was extremely large there seemed to be a sufficient demand in spite of all obstacles, prices declining only 5 per cent in average on July rates. The best sort declined most in proportion, large pale skins met with a good demand for dyeing, small firsts and lower smalls were cheaper, owing to the fact that the effort to use cheap musquash for linings in England, has only been partially successful. Black musquash, 30,501, in January last, 5,172, there were comparatively few good lots, but the collection sold readily at nearly last year's prices. American opossum, 45,906, last January, 112,429, the small quantity and active demand caused a quick sale, and last July prices were exceeded. French furrers were the principal buyers; we believe many skins will be dyed brown in France this year.

DISCOVERIES AND INVENTIONS.

Some time ago Mr. Stroh, the eminent mechanic, made the discovery that a disconnected telephone emitted a soft breathing sound when a magnet was moved to and fro in close proximity to it. This singular fact in question has not yet been satisfactorily explained, but the subject was brought before the Society of Telegraph Engineers and Electricians at a recent meeting, when Mr. Stroh said that he had further investigated the effect of a magnet on the telephone, and could produce it in a skeleton telephone, that is, a telephone minus its coil, and consisting only of the bar magnet and the iron diaphragm. To cause an audible sound, such as the respiratory sound observed, the magnetic disturbance in the telephone must obviously be of a vibratory character, and it was suggested that the tremors of the hand on moving the magnet might account for it. Mr. Stroh explained that this reason would not hold for the sound was still produced by a magnet of sufficient inertia to prevent the occurrence of the tremors. Moreover, the breathing was of a different kind when the magnet was advancing to the telephone from what it was when the magnet was receding. The loudness of the sound was not by heading the telephone magnet round towards the side on which the magnet was moved, and bringing the latter up with its poles directed to the poles of the telephone magnet. Professor Hughes was of opinion that the action of the magnet on the telephone was of an undulatory nature, and the suggestion follows that the magnetic force may proceed in waves from a magnet. Mr. Stroh's experiment is well worthy of being investigated, for it might lead to some important molecular result.

CONCERNING THE ANCIENT NAVIGATION LAWS OF ENGLAND.

As the subject of our complex and contradictory navigation laws is one to which public attention is at present directed by the debates in Congress and discussions in the newspapers, it may not be amiss to give some account of those of the mother country which have, in great measure, been the model upon which our own have been framed. The origin of the navigation laws of England may be traced to the reign of Richard the Second, or even to a still more remote period. It is not, however, until the reign of Henry the Seventh that we find the leading principles of these laws becoming distinctly recognized as a part of the acknowledged policy of the country. In this reign the importation of certain commodities was prohibited unless imported in English ships manned by English seamen. In the early part of the reign of Queen Elizabeth foreign ships were excluded from the fisheries and coasting trade. The republican parliament under Cromwell greatly extended the navigation laws by an act passed in 1650, which prohibited the ships of all foreign nations from trading with the American Colonies, or plantations as they were then called, without having previously obtained a license. In 1651 the republican parliament passed the famous "Act of Navigation." This act had a double object. It was not only intended to promote the interests of British shipping, but also to strike a blow at the maritime power of the Dutch, who then engrossed almost the entire carrying trade of the world. The act in question declared that no goods or commodities whatever, the growth, production or manufacture of Asia, Africa or America, should be imported into either England or Ireland, or any of the plantations, except in ships belonging to English subjects, and of which the master and the majority of the crew were also English. Having thus secured the import trade of Asia, Africa and America to the English ship-owners, the act went on to secure to them, as far as possible, the import trade of Europe also. For this purpose it further enacted that no goods of the growth, production or manufacture of any country in Europe should be imported into Great Britain, except in British ships, or in such ships as were the real property of the people of the country or place in which the goods were produced, or from which they could only be, or most usually were, exported. This latter part of the clause was entirely levelled against the Dutch, who had but little native produce to export, and whose ships were employed in carrying the produce of other countries to foreign markets. Such were the leading provisions of this famous act. They were adopted by the royal government on the restoration, and continued until a comparatively recent period to be the rule by which the commercial intercourse of England was mainly regulated. Thus it will be seen that in her shipping interests, as well as in her manufacturing, England's supremacy is largely indebted to a most rigid system of protection. This law having served so well the purposes for which it was intended, was dignified with the name of the *Charta Marina* of England. Such was England's jealousy of the naval and commercial enterprises of the Dutch at this time, that in order to cripple it she did not hesitate to proscribe all intercourse with them; and to prevent the possibility of fraud, or of clandestine or indirect intercourse with Holland, she went so far as to include the commerce with Germany and the Netherlands in the same proscription. The extreme rigor of this statute was subsequently somewhat modified, but its principal provisions remained in full force until, through the influence of free trade doctrines, new statutes were passed which reversed the ancient policy. Regarding the famous "Act of Navigation" described, Adam Smith says, in his *Wealth of Nations* - "When the act of navigation was made, though England and Holland were not actually at war, the most violent animosity subsisted between the two nations. It had been in during the government of the long parliament, which first framed this act, and it broke out soon after in the Dutch wars during that of the Protector and of Charles II. It is not impossible, therefore, that some of the regulations of this famous act may have proceeded from national animosity. They are as wise, however, as if they had all been dictated by the most deliberate wisdom. National animosity at that time aimed at the very same object which the most deliberate wisdom would have recommended - the diminution of the naval power of Holland, the only naval power which could endanger the security of England. The act of navigation is not favorable to foreign commerce, or to the growth of that opulence which can arise from it. The interest of a nation in its commercial relations to foreign nations is like that of a merchant with regard to the different people with whom he deals, to buy as cheap and to sell as dear as possible. But the act of navigation, by diminishing the number of sellers, must necessarily diminish that of buyers, and we are thus likely not only to buy foreign goods dearer, but to sell our own cheaper than if there was a more perfect freedom of trade. Assiduous, however, as of much more importance than opulence, the act of navigation is, perhaps, the wisest of all the commercial regulations of England.

Our modern free-traders and protectionists can each glean some comfort from these remarkable words from

The *Writings* of the great English economist. As applicable to our own case at the present day, they require modification. The circumstances of the United States are vastly different from those of England during the reign of the second Charles, and it is a question whether with our great and varied resources, manufacturing as well as agricultural, such a measure as the Act of Navigation, adopted by the Congress of the United States, might not merit even more than did the English act, the high eulogy bestowed upon the latter by Adam Smith. It is said that England is for a great portion of her food supply upon the United States, no less than she is dependent upon us as her best customer, for a market for her manufactured goods, as well as for the raw material upon which is raised one of her chief industrial resources. It is not to be doubted that did commercial rivalry become as bitter between the two countries, as between England and Holland in former days, that England would be by far the greater sufferer, from our enforcement of similarly excessive maritime regulations, to those which she directed against the Dutch. - *Fort Daily Telegraph*.

WHERE THEY GO.

The Old Postage Stamps - The Revenue Pooler. Some time ago it leaked out that the Government had been defrauded out of large sums annually by a class of individuals who cleaned old postage stamps and sold them again for new. It was plain that there was much truth in the report, but the authorities found great difficulty in tracing the guilty parties, in fact the public were left to judge that, as no arrests were made, the attempt had been given up. By mere accident on Monday night, a *World* man got a clue as to how the work was done. A little lad in the west end, who had been for months perseveringly collecting postage stamps of all denominations, boasted that he had now collected two thousand five hundred stamps. He was asked what he was going to do with them, and said that at an appointed time the agent of a man in St. Thomas would come around, take the stock of stamps which he had collected, and pay him twenty-five cents a hundred for them. He said that there were boys and men, and even women, not only in the city, but all over the country, who were busy collecting, and that the result of their labor would be gathered up, as they would not trust the post to carry their wares. Whether the stamps were cleaned at St. Thomas or not he could not say. It is not probable that this is the case. St. Thomas may be the headquarters of the party or parties who are carrying on this illegal trade, but it is to be presumed that the works are somewhere across the lines, and that the stamps are sent over in bulk. It can easily be seen how a fortune could be made out of this traffic. In England in 1879 there were more stamped letters passed through the post-office by many thousands than there were stamps sold. The authorities there got over the difficulty by getting up a stamp which, when washed with acids, the queen's head became obliterated. - *Toronto World*.

THE FUNDING BILL.

A Panic in the Stock Markets. New York, Feb. 25 - The stock market opened with a scene of wild excitement, brokers bidding 14 per cent. for one day's use of money in addition to the legal interest. Stocks fell, and the market is very low. At 11.30 the news that Sherman had ordered the purchase of ten millions of bonds here caused an immediate feeling of relief. As provision had already been made for prepayment of \$25,000,000 of bonds included in the 191st call, none of these bonds will be accepted, but any others of the five and all of the sixes to the extent of \$10,000,000 will be received. Within a few moments of the receipt of the order, bonds began to be offered, the first lot having been \$250,000, and the amount bought in the first fifteen minutes was over \$1,750,000. It is reported that a well known banking house has \$5,000,000 of these bonds, which will be put in at once. As soon as the money for the \$10,000,000 of bonds comes out, a return to the normal condition of the money market is expected. In the afternoon, in the last half hour stock speculation became wild, and under the most intense excitement prices broke rapidly throughout the entire list. Quotations dropped one to two per cent. at a time. Reading declined 17 per cent., Canada Southern 10 1/2, Western Union 16, Union Pacific 12 1/2, St. Paul and Omaha preferred 12 1/2, Louisville and Nashville 11 1/2, Wash. Pacific preferred 11, North-West, Lake Shore, New Jersey Central, and Hannibal and St. Joseph, each 9 1/2, St. Paul 2 1/2, Delaware and Lockwood, 8 1/2, New York Central and Michigan Central each 6 1/2, Erie preferred 5 1/2. In the final sales the earlier money brought in buyers whose purchases resulted in a recovery of 1/2 to 6 1/2. Western Union transactions this afternoon were enormous. Washington, Feb. 25. - The Treasury to-day received \$2,969,000 for the retirement of circulation. The total receipts for the retirement of circulation are \$11,116,000. The Cabinet session to-day was devoted principally to the financial situation. Sherman admitted various statements showing the condition of the Treasury and what had been done to relieve the money market. There was no decided action as to the future movements of the Government in that direction. There seems to be a growing impression with many members of the House who voted for the Funding Bill that the measure was ill-advised. Some acknowledge that if they had fully realized the effect of the fifth section they would not have voted for it. It is even intimated that sufficient opposition will be developed in the House, if the Bill can be taken from the Speaker's table, to defeat it. Pending the action of Congress, Sherman will exercise all his discretionary power to relieve the threatened stringency. Philadelphia, Feb. 25 - The panic in stocks to-day was fully as effective in depressing prices as that of September, 1873. At the close the feeling was more settled. The common impression is that the market will be steady to-morrow.

Boston, Feb. 25 - The stock market here was demoralized to-day, in sympathy with the New York market.

The *Thunder Bay Sentinel* says: To parties who are interested in our mineral development it will be glad news to learn that Mr. A. G. Clark expects to be here early in February to superintend the rapid development of the iron mine at Ironston, and the building of a branch line of railway from that point to Port Hedstrom, on Thunder Bay. A number of men have been at work during the winter, stripping and making preparations for the coming season's work. That the firm of A. B. Meeker & Co., the iron kings of Chicago, are prime movers in this enterprise is sufficient guarantee that it will be pushed forward with all the energy and capital that is necessary and adequate to its thorough and successful development.

DOMINION PUBLIC WORKS.

(Shareholder, 25th Feb.)

According to the estimates contained in the Blue Book now before Parliament for the fiscal year 1881-82 which are proposed to be voted during the present session—we abstract the following in connection with the Department of Public Works, showing that the estimate has been made in an appropriate manner for the several provinces such amounts for the maintenance and construction of their works as will secure a continuance of that efficiency for which its administration is invariably noted.

Table with 3 columns: Province, Amount, and Other details. Rows include Nova Scotia, P. E. Island, New Brunswick, Quebec, Ontario, Manitoba, N.W. Territories, and B. Columbia.

These figures compare favorably with the appropriations for the years 1880-81, and in the generality of instances a larger expenditure will be conferred upon each province. In addition thereto a sum of \$122,700 is proposed for dredging, service distributed over the Dominion, and \$145,000 for slides and looms, also \$34,000 to complete telegraphic construction works.

The details requisite for the compilation of figures for works in progress, when distributed over a radius of some 300 miles, necessitate careful and mature consideration on the part of the Minister and his executive; as, in these days of commercial enterprise, we find our cities and towns ever and anon sending their delegates to Ottawa "praying to be heard," etc., etc., and each party having particular or special "alma." With every desire to promote the country's interests, the Minister has a double duty to perform, not only in endeavoring to please everybody with long promises, but to keep a watchful eye upon the Dominion exchequer, and to a certain extent upon financial probabilities. The respective appropriations included in the foregoing figures will, when voted by Parliament, undoubtedly be cordially endorsed by those representing the interest of the several places for which they are allotted. Every year gives the Department of Public Works more onerous and extensive duties to perform, and inevitably this will be the case in the future, as with the "engine of civilization" ploughing its way westward, the Canadian Pacific Railroad will increase the duties devolving on Public Works—and other departments generally.

CANADA A FIELD FOR IMMIGRATION

What Mr. O'Leary Thinks.

Mr. O'Leary, a gentleman well known to our readers, and who has travelled extensively and written on immigration matters, is now stopping in the city. The present may be a fitting time to give a brief resume of Mr. O'Leary's connection with Canadian matters. He was originally identified with the English National Farm Laborers' Union, of which Mr. Jos. Arch was President, and was sent by that association to form a somewhat similar one in Ireland. It may be mentioned that Mr. O'Leary was selected for this special mission for his knowledge of the Irish people and Irish language. After establishing this Union in Ireland he came to Canada under the auspices of the organization then formed and also visited the United States to make enquiries regarding the benefits attached to immigration and to report to the secretary of the Union in Kentucky the result of his investigation. Besides his report to the Union, he corresponded to various papers, amongst which were the Laborers' Journal and Learning Chronicle, as well as publishing the information he gleaned pertaining to immigration, and the general impression which he formed of this continent, in a volume of considerable size. In his book and newspaper letters he recommended Canada as a field for emigration to farmers, farm-servants and laborers, not exceeding 40 years of age. His letters have been very extensively read throughout England and Britain generally. He again visited the Philadelphia Exhibition in 1876, where he remained for three months, afterwards making an extensive tour through the United States and Manitoba, being in no official capacity other than a newspaper correspondent writing for the Daily News, the Hour, the Laborers' Chronicle and other journals. In 1877 he went to California, Vancouver's Island, British Columbia, and the result of this tour was compiled in a pamphlet some time afterwards. Again in 1878 he was found at the Paris Exhibition as a delegate from the Society of Arts, and in the following year he visited Canada as a correspondent for various newspapers interested in emigration. On his return to England he gave evidence before the House of Lords' Commission on the resources of Canada as a food producing country, and the valuable information given by him was highly spoken of by Lord Carlisle. He landed at Boston in January last, and on his arrival was interviewed by the Boston Globe and Advertiser on the Parrell agitation in Ireland, and also on emigration. During this interview Mr. O'Leary told the journalists that the American Government did not assist the emigrants to the same extent as the Canadian Government, who not only gave emigrants cheap ocean passages but also a free pass from the sea-board to the interior. The American Government on the other hand do not as a government promote emigration, this being left entirely in the hands of the State Governments, Railway Companies and Land Corporations, who do the work very energetically as far as they are concerned. Mr. O'Leary emphatically states that Canada never stood higher in the estimation of the people of the Old Countries than at present, notably Ireland, on account of the very generous donation given by the Canadian Government last year to alleviate the distress in that country. This, he asserts, has done more to bring Canada into prominence and exemplify the good "ill existing between Canada and Ireland than one could well imagine. Other means of advertising this country, its valuable resources and the advantages it offers to settlers are newspaper letters, pamphlets, and last, though not least, steamship companies advertisements, prominent amongst whom the Allan Line may be mentioned. This summer the Allan Line will call at Galway, as well as at Cork and Kerry, and Mr. O'Leary says this, to emigrants from Ireland, will be a great advantage, because either on prepaid ticket or in any other way they need not now go across to Liverpool, as was hitherto the case. In the coming summer, in his opinion, Canada will benefit greatly from the influx of emigrants who are sure to arrive from the United Kingdom on account of the great agitation now going on for the reform of the land laws. Mr. O'Leary emphatically remarks that emigration to Canada is different from that to the States, inasmuch as the Government assists the emigrant both in the United Kingdom and on the other side. In London, Liverpool, Bristol, Glasgow, Belfast, Cork, Dublin, and other places, there are agents whose duty it is to give to emigrants information and the assistance allowed by the Canadian Government to those who are eligible. In most cases farm laborers and domestic servants. Emigrants for Canada nearly all go out by the Allan Line, which trades to Quebec in summer and to Halifax and Boston in winter, and from Halifax to the interior the Govern-

ment will give railway passes, and indigent emigrants will also receive food. From Quebec to Montreal is about 190 miles, and from Halifax about 1100, from Montreal to Toronto about 330 miles, and from Montreal to Ottawa about 230, all those places being connected by railway, as indeed are the whole of the towns of Canada. Emigrants should go out in April or May, when there is a great demand for labor, and then when winter sets in they will have something to meet it. Female servants are in demand all the year round, for the country is new, and girls going out one year get married the next, and they in turn require servants. Thus, this class of labor is nearly always wanted. In most of the large towns there are Government agents, whose duty it is to take charge of such emigrants as arrive at their agency, and send them to suitable situations, or where labor is most required. An old proverb says that a rolling stone gathers no moss, a remark that is applicable to large numbers in America, young men going out without a trade or desire to labor with their hands, kick about from one town to another until finally they acquire unsettled habits, and only remain in a place long enough to get sufficient money to take them somewhere else, spending the surplus in drink and gambling—in fact, leading a come-day go-day sort of life. Generally speaking, this class do not make any rapid strides towards prosperity, for in America there is only one road to success, namely, through sobriety, industry and business habits, and the man who does not adopt them is not likely to get on. —HARRIS, CHICAGO.

WINTER NAVIGATION

Quebec a Winter Port.

Mr. E. W. Sewell, of Leeds, who was in Ottawa for the purpose of laying before the Premier a project for securing an uninterrupted communication with Europe via the St. Lawrence, that gentleman in an interview with a Citizen reporter advances the following facts and figures in support of the projected route.—He draws attention to the fact that grain shipped from Ohio by the St. Lawrence route during the summer months has a distance of 4,088 miles of water, consisting of lake, canal and ocean to traverse before reaching Liverpool—being 400 miles shorter than by the New York and Erie Canal route, while the advantages in favor of the projected winter route are still greater. For instance, the distance between Chicago and Quebec by rail is 900 miles; Quebec to Liverpool, 2,700 miles, making a total distance of 3,600 miles; while the distance between Chicago and New York is 1,418 miles; from New York to Liverpool, 2,935 miles, allowing a saving of travel in favor of the Canadian route of 793 miles. With regard to the physical difficulties to be accounted for, Mr. Sewell states that the River St. Lawrence, from Quebec to the ocean, is never frozen over, that its surface is covered with ice floes running from two inches to nine inches in thickness, no heavy ice making its appearance till the spring, when the massive ice laying fast along both shores during the winter months moves off during the thaw and high tides of that season. He claims also that the three following advantages are secured to navigation by the presence of the ice floes: 1st. The floes keep the surface of the river smooth and untroubled during the heaviest gales. 2nd. Fog, that great bane of the mariner, the primary cause of almost all marine disasters cannot exist during the presence of the ice floes. 3rd. During gales of wind the floes, pressed down upon the lee shore, lay a great bank or shield under the passing ship's lee.

Mr. Sewell considers that these advantages far outweigh the slight resistance of the floes as they infringe against the bows of large and powerful steamers; he further contends that a steamer sailing between Quebec and Liverpool during the winter months would on most occasions meet with little or no ice as the floes lay for the greater part of the season upon the south shore, from the fact that our winter winds move more or less northerly in them, and the current of the St. Lawrence from the Saguenay eastward tends towards the south shore. For the first time since the inauguration of that inestimable boon, Fortin's system of telegraph and signal stations, we have enjoyed telegraph reports every day from the "Island of Anticosti." Up to to-day that station has reported the Gulf clear of ice, while the opposite stations report their shore as covered with ice.

He also considers that Fortin's system will facilitate ships taking advantage of those shores which are free from ice from the wind being off them. Mr. Sewell approaches the Premier upon this most important subject, supported by a petition signed by the most influential citizens of Quebec. The petition sets forth the advantages which would accrue to the Province of Quebec and the western portions of the Dominion, securing to the former her share in the advantages resulting from the construction of the Pacific Railway, of which the city of Quebec would then become the easternmost extension. The nature of his proposition to the Government, Mr. Sewell hopes to be in a position to make public in a few days.

LANCASTER.

The Canada Atlantic Railway.

A meeting of the directors of the Canada Atlantic Railroad Company took place at Lancaster on Friday last. There were present Hon. D. A. McDonald, Mayor Mackintosh of Ottawa; Messrs. McGillivray, Noble, Perley, McNabb, Fraser, Kennedy, MacDonald, Booth, D. McDonald, McArthur, Castleman, and Helmer.

Messrs. McLeod Stewart & Gormully, with Mr. Tiffany, were present on behalf of the contractors and the railway. A contract was finally signed by Daniel C. Linsley, of Burlington, Vermont, guaranteeing to build the Atlantic Railway by 1883, the distance of 122 miles to be constructed as follows:—That portion between the Coteau Landing station, on the Grand Trunk to High Falls, in the Township of Cambridge, to be completed by the 1st day of January 1882; that portion between High Falls and the City of Ottawa by the 1st of September, 1882. Finally, the rest of the railway, exclusive of the bridging over the St. Lawrence, to be completed by the first day of May, 1883, and the erection and construction of the bridge over the St. Lawrence to be completed by the 15th of May, 1887.

Messrs. Noel and Sweetland, of Ottawa, were appointed Bond Trustees. The contractors put up \$30,000 in cash and a bond for \$100,000, made by Gregory Smith, of St. Alban's, Vt., as security for the full completion of the contract, thus securing a through route from Ottawa to Boston, to be completed in three years. There is great rejoicing throughout this district.

Hon. D. A. McDonald resigned the presidency of the road, as he goes south in a few weeks and afterwards to Europe.

Mr. C. H. Mackintosh spoke highly of the valuable services rendered the enterprise by ex-Minister-Governor McDonald, his sentiments being cordially endorsed by Messrs. McGillivray, Perley and McNabb. A resolution thanking Sir McDonald was then unanimously passed.

Mr. McGillivray was elected President, and Mr. A. McNabb ex-M.P. Vice-President. Mr. Perley being 2nd Vice-President.

DISASTROUS FIRE.

The most destructive fire that has occurred at Cobourg for a number of years, broke out in P. Graham's boot and shoe store in Smith's Block on Sunday morning last, about three o'clock, which destroyed the large four-storyed building. From thence the fire spread to Hitchen's block, which was also burned to the ground. Smith's building was occupied by the following:—W. R. Whitelaw, ironmonger, Alex. Pratt, flour and feed store, E. Salisbury & Co., grocer, etc.; the Canadian Express Office; S. N. Howell, insurance agent; P. Graham, boot and shoe store, and two vacant stores. A portion of the upper floor was occupied by Hon. S. Smith as an office and G. Alexander as a dwelling. Hitchen's building was occupied by Grive & Jamieson, ironmonger, and the post office. The fire was so great, and fanned by a easterly wind that the buildings on the west side of the division, owned by P. L. McCallum, soon caught fire and it was only by the most strenuous efforts of the firemen that it was saved after being badly damaged. After three hours hard work the firemen returned home only to be called out again to battle with the flames. This time the alarm was sounded for a fire which was discovered in the cellar of L. Woodcock's grocery store, and it was with great difficulty that it was got under control, but not before the store was completely gutted, and much damage was done to the stocks of York's barber shop, Smith & Humphrey's book and stationery store, Graham & Bro's dry goods store, and the Sentinel-Star Printing and Publishing Co.'s Office. The building was damaged to the extent of about \$1,000. The fire in Woodcock's store is supposed to have originated from a spark being blown in through an open window. O. U. Field had a most miraculous escape from a horrible death at the fire. He fell through a half burnt stair case into the cellar, a portion of the stair case falling with him, placing him in a position in which escape without assistance was impossible. Those who saw him falling immediately went to the cellar in order to rescue him, and had to cut their way through a partition and found him insensible, he left arm being broken near the shoulder and he was severely cut about the head. At present he is not considered in a critical condition. The loss and insurance are as follows:—Smith's building, loss \$10,000, insured for \$8,000 in the Liverpool London and Globe, Hitchen's block, loss \$8,000 insured.

CANADA'S EXPORTS

(Canada Gazette.)

Monthly statement of goods exported from the Dominion of Canada (exclusive of British Columbia) for January 1881:—

Table with 3 columns: Category, Produce of Canada, and Total. Rows include Produce of the mine, Produce of the fisheries, Produce of the forest, Animals and their produce, Agricultural products, Manufactures, Miscellaneous articles, Coin and Bullion, and Grand Total.

Commissioner of Customs, Ottawa, 24th February, 1881.

THE REVENUE.

The following is a comparative statement of the revenue for the months of February, 1880 and 1881:—

Table with 3 columns: Category, 1880, and 1881. Rows include Customs, Excise, and Other sources.

Total for last July, 1880, to 26th February, 1881: \$18,864,890. Increase in eight months of year 1880-81 over corresponding period in 1879-80: \$4,000,000.

TRADE OF THE DOMINION.

The goods entered for consumption in the Dominion, exclusive of British Columbia, during the month of January were valued at \$6,171,755, and the duty paid \$1,260,962.

The monthly statement of goods exported from the Dominion during January is as follows:—

Table with 3 columns: Category, Produce of Canada, and Total. Rows include Produce of the mine, Fisheries, Forest, Animals and their produce, Agricultural products, Manufactures, Miscellaneous articles, Total, and Coin and Bullion.

UNITED STATES.

Mr. James A. Garfield has been inaugurated President of the United States of America. The following is a list of the elected Presidents since the Republic commenced its existence. The years given are those of the election. The inauguration took place in March of the following years:—

Table with 3 columns: Year, Name, and Inauguration. Rows list Presidents from George Washington in 1789 to James A. Garfield in 1881.

Messrs. JONES TYLER, MILLARD FILLMORE and ANDREW JOHNSON, elected Vice-Presidents, filled the Presidential chair as the result of the death of the presidents, TYLER succeeding HARRISON; FILLMORE succeeding TAYLOR, and JOHNSON succeeding LINCOLN.

TORONTO AND OTTAWA RAILWAY

The following is the amended Bill passed by the Ontario Legislature with reference to the Toronto and Ottawa Railway:—

AN ACT RESPECTING THE TORONTO AND OTTAWA RAILWAY COMPANY.

Whereas the Toronto and Ottawa Railway Company have petitioned for certain amendments to their incorporation, and for increased powers to construct, maintain and operate the said railway and for other purposes, and whereas it is expedient to grant the prayer of the said petition.

That Her Majesty, by and with the advice and consent of the Legislative Assembly of the Province of Ontario, enact as follows:—

1. The by-law of the corporation of the City of Ottawa granting a'd, by way of bonus, to the said company to the amount of two hundred thousand dollars, approved by the vote of the ratepayers of the city of Ottawa, on the thirtieth day of December, in the year of our Lord one thousand eight hundred and eighty, hereby declared legal, valid and binding, notwithstanding any defects in form or substance therein, or relation to the passing thereof: Provided always that the several provisions, stipulations conditions and restrictions with reference to the said railway or any part thereof, or the location, construction or maintenance thereof or otherwise contained in the said by-law of the city of Ottawa, granting a bonus to the said company shall be at all times kept, observed and performed, and shall be obligatory and binding upon the said company notwithstanding anything in this act to the contrary.

2. It shall and may be lawful for the Council of any city or town through which or any part of which the said railway or any part thereof passes, and having jurisdiction in the premises, to pass a by-law by-laws empowering the said company to make the road and lay their rails along any of the highways within such municipality: Provided always that before any such by-law shall be passed notice shall be given by the said company of their intention to apply to the Council for the passage of the same, which notice shall be inserted at least once a week for two weeks in some newspaper published within the municipality within which such highway is situated.

THE EXPORT OF CATTLE

Prospects of the Spring Trade.

Those engaged in the cattle export business are confident that the coming season will prove a lucrative one, and that the trade will greatly increase in bulk. Already shippers are preparing for the opening of navigation, and in a month or so shipping space will be a premium. A Mail reporter took a walk among the cattle men yesterday. Some of them expressed fears that the English market would not prove so satisfactory this spring as it did last, but the majority appeared to be satisfied with the prospect. At present there are between 3,000 and 4,000 head at feed, getting themselves into condition for their long journey, which will commence about the middle of May. Certain restrictions on the admission of foreign cattle still exist at ports of entry at Great Britain, but they will, it is believed, be removed about the first of March, and the highway to wealth will be again opened to exporters. The shipments will not only include cattle, but sheep, will be largely handled, Canadian mutton having proved agreeable to the English palate. All the time have agents in the country purchasing cattle for the spring drive. These will not be brought to the byes but will be fed at the place of purchase for at least two months yet. In conversation with buyers it was learned that the supply did not equal the demand for grades of such classes of cattle as are suitable for the markets across the ocean, and it was argued that until the farmers realized that it was more profitable to breed cattle and sheep than to cultivate grain, the supply from Canada would not equal in quality the bred in the States. Shippers claim that they are paying prices that leave a large margin of profit to the producers, and cannot understand why they do not go more extensively into cattle raising, and increase the resources of the country. Toronto is the headquarters of the trade in Ontario, and all the shipments this year will be from Montreal, by the Dominion, Reform, and Temperley lines of steamship.—Toronto Mail.

THE WELLAND CANAL

From a reliable gentleman who has arrived from St. Catharines, we have received the following particulars of a new and important enterprise to be carried out by Messrs. Shickelma, the extensive shipbuilders there, as the result of the deepening of the Welland Canal, and the important bearing it will have on the extension of the inland carrying trade of Canada. In order to meet the anticipated wants of shipowners, the Messrs. Shickelma are about to build during the coming summer, a large dry dock, consisting of a basin and a lifting deck combined, an inner dock for repairing, and another one to lengthen vessels or build new ones in. The estimated cost of these works is over \$50,000. By their erection they will be enabled to dock the largest vessel on the lakes. They contemplate building several large craft during the summer, and at present have a model of a vessel 200 feet long, 16 feet in the shallowest part in depth of hold, or an average depth of 18 feet, beam, 40 feet. In a depth of 12 feet of water they calculate that this vessel will carry 50,000 to 60,000 bushels of wheat. It has been questioned by some people whether vessels of such large capacity could successfully navigate on canals after the improvements are completed, and we think the action of such men as Messrs. Shickelma, whose experience is unequalled in matters of this kind, should be sufficient to convince the most skeptical on the subject. With vessels of fifty or sixty thousand tons and free navigation, which it is hoped will be obtained, the Canadian route has nothing to fear from the competition of the Erie Canal.—Montreal Star.

IMPORTANT FAILURE

It is our painful duty to announce the suspension of the well known firm of W. & F. P. Carrie, wholesale metal merchants, Grey Nun street. They passed through the commercial crisis from 1874 to 1878 which produced a great shrinkage of values and brought disaster upon many of our oldest established houses, but the hard times crippled their resources. With the advent of prosperity in 1879, followed by a remarkable advance in the value of goods in their line of business, their affairs again flourished, and they were able to count a margin of profit exceeding \$50,000. The reaction, however, which soon followed the boom in the iron metal trade, was severe enough not only to wipe out their profit, but to entail a heavy loss. This last misfortune made the past year a struggle to keep their heads above water, and, acting on the advice of their bankers, they decided to-day to place themselves in the hands of their creditors, Mr. Ross being engaged to make a complete statement of their affairs.—Montreal Herald.

CANADIAN PARLIAMENTARY NOTES

Mr. Leonard Tilley has given notice of his intention to move the following resolution:—That it is expedient to amend the Act 34 Victoria, chapter 7, respecting certain savings banks in the Provinces of Ontario and Quebec, by enabling the Governor in Council to fix a less rate of interest than four per cent. on sums that to be paid to depositors by banks...

pay for the said purpose which has met the approval of the Governor in Council, and such persons, not less than five in number, as may be associated with him in the undertaking, do before the first day of October next apply for Letters Patent under the Act to Vice, chap 48, incorporating them as a company for the purpose aforesaid, and show to the satisfaction of His Excellency in Council, that they have complied with the preliminary requirements of the said act, and are able and ready to establish and maintain such telegraphic communication as aforesaid...

Mr. John Macdonald brought down a return on Monday of the names and nationality of each of the instructors to the Indians in the North-West Territories, also the salaries paid each, a list of the articles furnished, etc. Seventeen of the instructors are described as Canadians, one as a naturalized Canadian, four as Irish, one as Scotch, two as natives of Manitoba, one as a native of the North-West Territories, two as English, one as French Canadian, and two are not described. Twenty-five of the instructors receive a salary of \$730 per annum, one receives \$600, one \$800, three \$480, and one \$360. The cost of equipment was \$34,114 47, and maintenance, \$31,022 02. A list of articles supplied is furnished.

MANITOBA TRADE.

The trade of Ontario and Quebec with Manitoba has reached very considerable proportions, as the following figures, which we find in the Winnipeg Free Press, show statement of values of merchandise imported from the other provinces, on which duty was paid or which were manufactured in Canada. Machinery, hardware and leather are the only items in the list which do not show increased value. The total increase for the month of January is \$21,208, or over thirteen per cent. Taking the figures for six months ending January, we find an increase in every named department, the total increase being 78 per cent., as under:—

Table with 3 columns: Item, From 1st July, 1890, to 31st Jan., 1891, and From 1st July, 1879, to 31st Jan., 1880. Items include Machinery, Groceries, Hardware, Dry Goods, Leather, Sugar, Tea, and Not mentioned.

PROPERTY IN TRADE MARKS

A meeting of merchants and manufacturers using trade marks in the sale of their goods was held last week in New York. Mr. Francis Forbes, who presided, said that the meeting was called for the purpose of giving expression to the feelings of those interested in the state law regarding trade marks, as it now stands, and to determine what future action may be advisable in regard to a United States statute for the better protection of trade marks. He stated that it is an admitted fact among manufacturers and merchants that an amended and better law is desirable, and declared that it can only be secured by united and earnest efforts. A defective codification of the State trade mark laws is now before the legislature, and will pass unless some opposition is made. A resolution has also been introduced into Congress which concerns the owners of trade marks, being a proposition to abolish registration in the patent office. Mr. G. A. Larkins said the Belgian consul had informed him that, unless certain Belgian manufacturers were protected by a satisfactory trade mark law, they would not attempt to exhibit goods at the World's Fair of 1883. Mr. John Matthews complained that there was not in the proposed trade mark laws any provision for the protection of show cards and other symbols not attached to the goods themselves. It was decided by the meeting that the publication of the cuts of trade marks should be made by the government in this country as in England.—Iron Age.

REVENUE RETURNS.

Montreal, 28th.—The customs receipts for the month of February at this port were \$617,249, an increase of \$114,904 for the same period in 1880. The inland revenue receipts were \$94,450, an increase of \$10,920 over February 1880.

Halifax, N.S., 28th.—The customs receipts at this port for the month of February amounted to \$40,197, being an increase of \$1,366 over the same month last year. The inland revenue receipts for the past month were \$11,067, an increase of \$1,539 over February of last year.

London, 28th.—It is reported from Lingwood Station that the postmaster, Mr. E. Bolton, has abandoned, leaving liabilities to the amount of about \$1,120.

Bellefleur, 3rd.—The customs at this port for February show a large increase over the same month last year. The comparative statement is:—Imports, value in 1881, \$75,103; 1880, \$8,939; increase, \$16,164; duty, 1881, \$1,434.36; 1880, 12,177.45; increase, \$2,278.91; exports, 1881, \$17,294; 1880, \$14,822; increase, \$2,472.

THE FUNDING BILL.

New York, 27th.—The decline in values during the recent flurry in stocks is estimated at \$100,000,000. It is stated that Vanderbilt deposited \$8,000,000 of maturing bonds with Decker, Morgan & Co., with instructions if emergency occurred to present the bonds for redemption and loan proceeds in the market. It is estimated that \$8,000,000 in bonds arrived here during the past few days by express from Canada, and large sums through Buffalo, Chicago, and the United States, attracted by the high rate of interest.

Washington, 26th.—A special to the Herald says, "That the Funding Bill has but a slight chance of becoming law, the House having become almost as panicky as Wall Street."

The Tribune states "That it is scarcely probable the Funding Bill will become law this session unless the Democrats abandon the attempt to strike down the national banking system."

The Times says, "Should the Funding Bill be taken up on Monday and consideration proceeded with without debate, there will still be ample time to dispose of it and send it to the President. While there is a chance that the bill may go through both branches, the prospects of its passage are by no means encouraging."

OLD-FASHIONED FREE TRADERS.

It is not worthy that nearly every American college professor, excepting the few whose institutions are located in iron manufacturing centers, is a strong advocate of free trade, and all that the term implies. As a consequence, the majority of students who are taught by them habitually become ardent advocates of these doctrines. These students who drift into practical business life (unless as importers of foreign goods, their special interests lean towards industrial dependence upon foreign countries) usually find out in time that the free-trade theories of this sort are erroneous from any practical point of view, but the majority continue to throw their influence in this direction, simply because they lived in a free trade atmosphere when at college. The difficulty is that the college professors have usually no practical business experience, and look at these matters from a visionary standpoint. They muddle their brains with beautiful theories about the universal brotherhood of mankind, and think it the height of injustice if American workmen (and American farmers, though having a home market) ask to be relieved from competition with the poorly paid labor of England, France and Germany. These good souls apparently think their duty towards the families of their men is precisely the same as towards their own families, while the believers in protection think that justice, like charity, begins at home, and that is the difference between them.—American Mechanist.

GOLD IN NEWFOUNDLAND.

Mr. Alexander Murray has written a letter to the Mining Record regarding the Bignou gold district in Newfoundland, which is too long to be reproduced, and from which we make one or two extracts. In describing the general character of the auriferous region, Mr. Murray says:—The resemblance in general character of the strata with their included auriferous quartz veins in Newfoundland to those of Nova Scotia must strike any one who has visited the two countries with the purpose of studying their geological features, and I venture to say that the description given of the latter country by Dr. J. W. Dawson, of Montreal, might, in many respects, equally apply to the former; although, according to that author, the auriferous country of Nova Scotia is supposed to be of lower Silurian age while that of Newfoundland is undoubtedly unconformably below the Primordial group which, with abundant characteristic fossils, skirts the shores of Conception Bay. Without presuming to offer an opinion as regards the age of the Nova Scotian strata, the fact of the resemblance is suggestive. In summing up his conclusions, Mr. Murray further says:—"That a large area of country in the region referred to is auriferous, there can scarcely be a doubt, although nothing short of actual mining and practical experience can possibly prove what the value of the produce may be, or whether the prospects of obtaining a remunerative return for the necessary outlay are favorable or otherwise. The specimens which have been obtained, although an unquestionable evidence of the presence of the precious metal, cannot by any means be taken as indicative of a certain average yield. Indeed, to quote the words of Dr. Dawson, from his Acadian geology, page 626, where he says: 'It is not easy from mere inspection of the vein stone to predicate to its value, since the gold is usually invisible to the eye,' and again at the following page, when treating of the characteristics of the Waverly mine, he says: 'Visible gold is rare in this vein at present, the greater part being in a minutely disseminated and invisible state.' An analysis of quartz collected in which gold is imperceptible to the naked eye, may aid in revealing some evidence of its constancy, and may throw some light upon the possible average of superficial contents over certain areas under similar conditions, but it may be safely predicted that the irregularity of distribution, so conspicuously displayed by the veins on the surface, will extend beneath it, and that it will be mainly on the stronger and more persistent bands, where intercolated with the strata, that mining will extend to any considerable depth. The indications of gold in this country, then, are certainly sufficiently favorable to merit a fair trial; and there are good reasons to hope and expect that ample capital, applied to skilled and judicious labor, may be found remunerative to future adventurers, while a new industry will be added to give employment to the laboring population of the island, and possibly bring this despised and but little known colony into more prominence and consideration abroad than it has hitherto enjoyed."

THE PAST AND THE FUTURE OF THE TELEPHONE.

The uneasiness created in the business circles by the consolidation of the telegraph companies, has called forth an increased interest in its young, though flourishing, rival, the telephone. The rapid extension of the latter is abundant proof of its high practical value for local use. Whether it contains the elements of such expansion of its field of utility as to become a competitor of the telegraph, is a question which a few years will probably settle. The development in the efficiency of the telephone is often complained of as slow, and an impression seems to prevail with many that the limits of its range have been nearly reached. The public has become so accustomed to see inventions spring into maturity, that the delay of a year between the first announcement and a state of high efficiency is looked upon as indicating some cases of weakness. Like all other improvements, the telephone has gone through a long period of preparation, the details of which possess present interest, in view of the attempts which are being made to contest the right of the Bell Telephone Company to exclusive use of the invention. The mechanical telephone, which has figured as a toy for centuries, was known in England as early as 1667, and was brought to a com-

parative state of perfection by Watson early in the present century. Researches concerning the transmission of sound by electricity were made by a considerable number of scientists of this country and of Europe in the five years from 1827 to 1837, and many facts of great scientific value were elicited, but attempts, however, being made to apply them in a practical manner to the transmission of other than instrumental sounds. The first one who seems to have had a clear perception of the problem, and who was able to recognize the means by which its solution might be effected, was a Frenchman, Boursois, who in 1824 stated in a published paper that, if a man speaks near a movable disk adapted to produce electric disturbances, another disk at a distance may be made to execute the same disturbances, and thus the articulations of the voice may be transmitted. It is upon whose achievement the Germans place much stress, came forward in 1867 with a telephone which was readily improved upon by Bell, and these claims are followed in a succession by Manzotti, an Italian, John Canack, an Englishman, Prof. Keller, of Vienna, and Van der Weyde. Edison, of Chicago, obtained some patents in 1874, Charles E. Buell, of New Haven, in the following year, and on the 14th of February, 1876, Bell and Gray simultaneously filed specifications for telephones. The rights of the latter are now contested by a number of parties, who rest their claims upon the allegation that Daniel Drawbaugh, of Eberly's Mills, Pennsylvania, invented a successful telephone as early as 1868, and that it was in practical operation for years after 1870. His application for a patent was refused, and there is every probability of a conflict between the Bell Telephone Company and a number of concerns who are working on a basis of the Drawbaugh invention. However it may result, the public will watch the progress of the introduction and improvements of the telephone with the greatest interest, as increased facilities for communication will be received with satisfaction. Should the decision of the courts be adverse to those now holding the patents, then liberal terms would probably be made toward making the telephone a dangerous rival of the telegraph.—Iron Age.

ADULTERATIONS OF WINES AND LIQUORS.

The spectacle of a wise looking gentleman ordering wine at a hotel, looking very leisurely over the list and carefully choosing champagne as the most fashionable wine, is a very ludicrous one to a person acquainted with the manner in which much of it is manufactured. There is more champagne bought and sold and drunk in the city of New York in a single year than there is manufactured of the pure article throughout the world within the same time. The bogus article which is put forth at such an extravagant price is generally manufactured, about as follows: Fifty gallons of water, two gallons of honey, five ounces of bruised ginger, five ounces of ground mustard. Boil this mass thirty minutes, add a quart of yeast, and let it ferment from ten to fourteen days. Add six ounces of bitter almonds, bruised, spirits and grains of paradise to suit convenience. The more spirit the champagne possesses the greater will be its body. For coloring use cochineal, half an ounce to fifty gallons, or for pink champagne use a little more cochineal. The author furnishes also additional information for laying on the Dutch meal, printing and placing the labels to prove that it is obtained pure and genuine from any desired part of the world. Canadian lovers of the exhilarating fluid are not so subject to imposition, but it would surprise some drinkers to learn of the deeds which are done below the light of day in some of the disturbing centres. Notwithstanding the successful grape culture of recent years, here is the recipe for making the fine sparkling "Catawba" so popular in the United States: One hundred pounds of raisins, thirty-five gallons of sweet cider, one hundred gallons of water, three pints of yeast; ferment for twelve days, then add twelve gallons of honey, twelve gallons of clean spirit, one grain of aniseeds, rubbed well with two ounces of water; then four gallons of Jamaica rum, twelve ounces of orris root, and fine the whole with three quarts of rolled milk, added while hot. Now for claret: Five gallons of bottled cider, two gallons of spirits, five gallons of water, two ounces of powdered catechu, or two drams of sulphuric acid to the gallon, to suit the taste. Color with tincture of logwood. And, if you prefer sherry: Ten gallons of cider, four ounces of bitter almonds, one gallon of honey, two ounces of mustard. Boil for ten minutes, then add one-half pint of spirit of orris root, two ounces of essence of cassia, and three quarts of rum. It is stated, in addition, that Jamaica rum is to be preferred, as this wine is often preferred for the auction, but the amount of spirit becomes an important item, owing to its cost; therefore, when this is kept in view, tincture of grains of paradise should be substituted for spirit. But here is the recipe for port, which is used so freely by the gentleman of the old school, who "always gets the best"—the best prescribed so freely by physicians: Twenty gallons of cider, two gallons of honey, two ounces of carbonate of soda, one and one-half gallons of strong tincture grains of paradise, five ounces of powdered catechu. Color with logwood or burnt sugar. A small portion of spirit will improve it. The carbonate of soda is to neutralize the acid in the cider, which, if allowed to remain, would present too large a proportion of acid for good port. In addition to these recipes, "published for the trade," are others for manufacturing seven kinds of brandy, besides the cognac, some of which are really frightening, seven kinds of whiskey, two kinds of gin, five kinds of rum, and ten different kinds of wine.—Montreal Journal of Commerce.

—A magnetic sand is said to be found on the Isle of Bourbon which has the property of rapidly reviving plants which have shown pronounced symptoms of decay through disease.

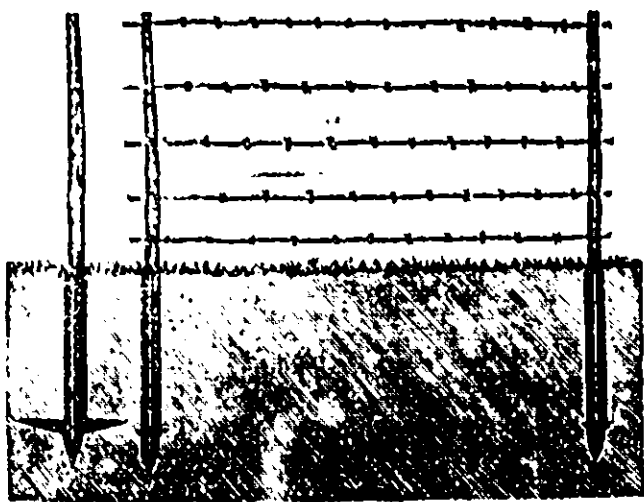
—A batham correspondent writes as follows of the fresh fish trade of the Miramichi:—The smelt season is over and the quantity shipped to date is 1,400,700 lbs. Of this the Dominion consumed only 20,500 lbs., the United States taking all the rest. The following are the quantities of fish sent away frozen this season, so far:—

Table with 2 columns: Fish type and quantity. Items include Smelt (1,400,700 lbs.), Salmon frozen (5,000), Mackerel frozen (13,000), Bass frozen (15,000).

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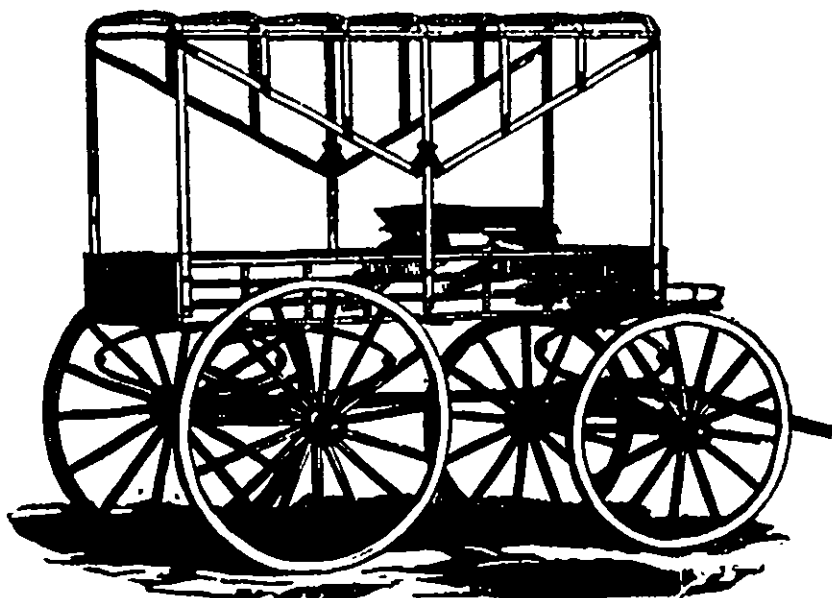
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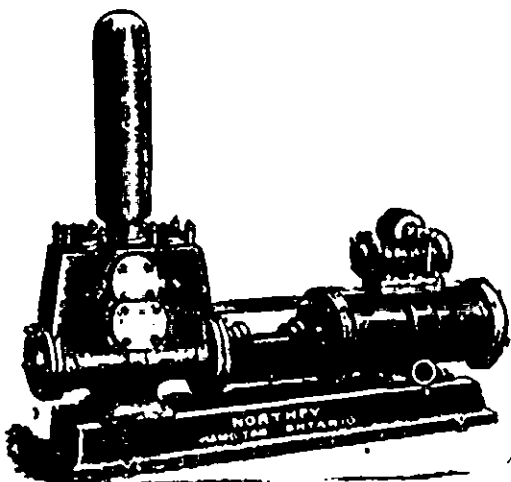
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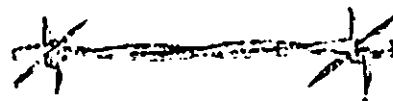
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3rd.—The Barbs on our Wire are four-pointed, thus always presenting a Barb laterally or at a right angle, which is a great advantage over the Two-Barb Wire, as cattle are unable to get against the fence to break it or push it down.

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