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AND NATIONAL ECONOMIST.

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THE

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ISOLATED FREE TRADE.

The last number of the *Nineteenth Century* contains an able article on the subject of "Isolated Free Trade," the object of which is to prove that a policy of one sided Free Trade is not a paying one. We cull some extracts from Mr Edward's valuable article: "In 1844 Mr Cobden said: You have no more right to doubt that the sun will rise in the heavens to-morrow than you have to doubt that, in less than ten years from the time when England inaugurates the glorious era of commercial freedom, every civilized commercial community will be free traders to the backbone. In 1852 he said that the time was at hand, 'when other nations would be compelled by their interest and by the reality of our prosperity to follow our example and adopt Free Trade.' About the same time Mr. Disraeli said in the House of Commons: 'The time will come when the working classes of England will come to you on bended knees and pray you to undo your present legislation.' Which prophet, may I ask, now in 1881, has proved himself worthy of our trust? The cloud that threatens the industrial existence of England has been gathering and intensifying for six years. The extraordinary growth and development of agricultural and manufacturing prosperity in Europe and America have entirely changed her industrial position. Forty years ago England had almost a monopoly of the manufacturing industries of the world she produced everything in excess of her consumption, and nations comparatively nothing the world was obliged to buy from her, because it could not buy anywhere else. The discoveries of gold and steam immensely increased the demands and the purchasing power of the world, and consequently the demands for the products of England. Her wealth increased by leaps and bounds that were bewildering. She was intoxicated with success with her immense accumulated wealth, her machinery, her coal, her iron, her insular position, she thought herself unassailable, she laughed at the possibility of foreign competition; she offered to fight the rest of the world with her right hand tied behind her back; she said to the world, 'I will receive anything you can send me without duty, adding at the same time an expression of hope that they would in turn receive her goods But they said, Not we gladly avail ourselves of your kind offer of admitting our goods; certainly we will send you all we possibly can. At present, unfortunately, we have nothing to send; we cannot yet supply our own wants; but when we have more capital, and your machinery and workmen, we hope to have a large surplus to send you.' Well, that was thirty years ago; now France and America and Belgium have got our machinery and workmen and ample capital, and they are sending us a yearly increasing surplus that is driving our own goods out of our own markets; and every year they are more completely closing their markets to our goods." Now, whether the reaction against isolated Free Trade is reasonable, or whether it is merely the revival of workingmen's prejudices, as the leading journal tells us, it exists, and is growing with a rapidity and an intensity that surprises many even of those best acquainted with the operative class. The organization of the working classes is very complete, and very strong, and at this moment the whole of it is being concentrated on this point. Already a number of operatives, far more than is necessary to turn a general election, have through their delegates given in their adherence to the Fair Trade League. The workingmen are not working out the question by the abstract reasoning of others, but by their own experience; they know nothing of political economy, but they know what were the promises of the apostles of Free Trade, and they know what are the results. Bankers and brokers and dealers in stocks and importers of foreign manufactures may tell them that they are fools, and don't know when they are well off; that may be so, but they know when they are badly off, *and they are badly off now!* The most sanguine must allow there is something rotten in the state of England. We have a population of 34,000,000 of the best working race in the world, accustomed for generations to agricultural and manufacturing industries. We have ample capital, better banking facilities and credit, cheaper coal and iron, and better engineers and mechanics and machinery than any nation in the world; greater facilities for importing raw materials for our industries; our climate is better adapted for labour of all kinds all the year round than any other climate in the world; our soil, take it all through, is better suited for agricultural industries than any soil in Europe or America, we have the finest breed of horses, beasts, pigs and sheep in the world; and yet the agricultural interest is on the verge of ruin, and the manufacturing interest is in a condition that alarms all engaged in it Bradford is nearly ruined, and both manufacturers and operatives are emigrating to America, as far as our political economists are concerned, Bradford, say they, 'must be patient and watchful, and must look out for new markets and new products for her looms.' But this is offering a man a stone when he wants bread. 'Whilst the grass grows the horse starves, whilst our manufacturers are patiently looking out for new markets our starving operatives are emigrating to America And when you analyse this advice what does it come to? Bradford makes woollen goods, goods suited only to England, the north of Europe and to America. If Germany, France, Belgium and America supply themselves with woollen goods and supply England as well, where are the new markets to be found? The millions of Africa and India *don't wear woollens* Mr. Bright knows, as well as the manufacturers and operatives of Bradford, that there are no new markets to be found for woollen goods, and that the only chance of saving the Bradford operatives from ruin is to preserve to them their old markets. *Under Protection the commerce* of the whole world has increased 36 per cent. in ten years. Under Protection the commerce of the United States has increased 68 per cent. in the same period. Under Protection the commerce of Holland and Belgium, of France, of Germany, has increased respectively 57, 51 and 39 per cent. Under Free Trade the commerce of England has increased 21 per cent. in ten years. Under Protection America is accumulating annually £165,000,000 sterling. Under Protection France is accumulating annually £75,000,000 sterling. Under Free Trade England is accumulating annually £65,000,000 sterling. *Many experts maintain that since* 1875-1876 she was losing money instead of accumulating *Protective America* now exports more than she imports. Protective France imports annually 4,000,000 more than she exports. (The balance against her is £40,000,000 in ten years.) Free Trade England imports annually £130,000,000 sterling more than *she exports! The apathy* with which the nation views the collapse of agriculture is astounding. The most important interest in the country is within appreciable distance of ruin, and the country makes no sign. During the last ten years upwards of a million *of acres have gone out of wheat cultivation.* It is, I believe, an absolute fact that during the same period the capital of the agricultural classes has depreciated to the extent of £500,000,000 or £600,000,000 and their income £21,000,000, and the loss is still *going on with accelerated speed.* The strange thing is that this tremendous loss and *depreciation is not only* accepted by the community as a matter of course, but is even hailed by a certain school of economic philosophers as a grand proof of the blessings of Free Trade. They regard the ruin of British agriculture as so natural an event that *they even express surprise* that the agriculturists themselves should venture to complain. 'There is nothing like dying by a fine sword,' say they: 'the British agriculturist is dying by the sword of Free Trade—what nobler fate can he deserve? Instead of repining, he should *try to emulate* the enthusiasm of the Hindoo fanatic, who shouts praises to Seeva, the *destroyer, even as he casts* himself under the wheels of Juggernauth! 'It is not only the beneficent working of Free Trade,' says the Cobden Club, 'that prescribes the agricultural *ruin of England*, it is the great natural law of the preservation of the fittest that *proclaims that, as England is* not the best fitted to grow corn, therefore, she must grow corn no longer' *But do* the enlightened gentlemen who so glibly appeal to the beneficence of natural laws *realize* what the change means? A thousand acres in grain will support *eight times the population* of a thousand acres in grass. A million acres of wheat supplies grain *for 3,500,000* people During the last ten years a million acres of wheat have gone out of cultivation, so that now, in 1881, if the population had remained stationary, we should be in a position to feed 3,500,000 of people less than we were in 1872 But during that *period our population has increased* nearly 3,000,000, so that in 1881 we are actually in a position to feed nearly 6,500,000 less than we were in 1872 We actually grow less corn now to feed 34,000,000 of people than we did forty years ago to feed 17,000,000. During the *last ten years* our live stock has diminished in value to the amount of £3,000,000. Our *farmers* have lost £6,500,000 annually for some years on the depreciated prices of the wool alone. Our dairy farming, our market gardening, our small rural industries are rapidly disappearing. Our importation of corn, meat, dairy produce, and vegetables averages £15,000,000 per annum more than it did ten years ago." It is one of the unmistakable signs of the times to find such an article as that from which the above extract is taken in a leading British magazine.

THE FAIR TRADE MOVEMENT.

People at a distance are rather puzzled what to think of the present "Fair Trade" movement in England. After the great Free Trade victory of over thirty years ago, and the very decided acceptance of the system by the governing classes in the Conservative as well as in the Liberal party, it seems impossible to believe that the nation can ever "go back" on a policy which, to all appearance, has been so almost unanimously ratified. Among the circumstances which have deepened this prevailing impression, the attitude of the late Lord BEACONSFIELD on the trade question during recent years, must count for a good deal. Long ago the great Conservative leader had ceased to fight against what appeared to be Britain's trade policy as decreed by fate, and no further back than the parliamentary session of 1880, in the course of an elaborate speech in the House of Lords, he laid it down that the nation had adopted the system of Free Trade for good, and that all agitation against it was futile. That speech was probably intended to be read as his warning to the Conservative party that Protection was a dead issue in England, that attempting to revive it would be to waste effort and to court signal disaster besides, and that the party should save its energies for something of better augury in the battles of the future. What that something was, in his mind, we need be at no loss to guess; it was undoubtedly the re-assertion of England's standing as an Imperial power among the nations. During the latter part of the long ascendancy period of the Manchester policy, the nation's standing before the world had run down in two ways—first, through such a truckling to foreign Powers as would have been considered impossible for England, not only under PITT or CANNING, but in the more recent time of PALMERSTON as well; and next through the insidious spread of the idea that the Colonies were nothing but a burden and a danger to the Mother Country, which would be well rid of them altogether. Now, while it may seem strange to us that so accomplished a reader of the signs of the times as the great DISRAELI should apparently have failed to foresee that the hostile trade policy of foreign nations might force England to reconsider her own, and that a crisis in the history of Free Trade was at hand, even at the doors, we may still conjecture a reason which to his mind justified the course he took. The decadence of Britain's Imperial power and standing among the nations may have seemed to him so alarming that he held it the duty of the Conservative party to throw all other issues to the winds, for a while, and to devote itself to the gigantic task of saving the Empire from a decline and fall which had already began. However this may be, history will record that, during the closing years of his life, and after having reached a great age, he succeeded in arresting the down grade movement, and in making the world understand that England was herself again. We are probably too near the time to take in fully the magnitude of the great statesman's last work, but its true significance will be better understood as the years roll on. Even the opposite party begins to understand it, and to feel it; and it is a triumph for the dead DISRAELI that now the living GLADSTONE feels compelled to say that Englishmen would as soon think of renouncing the name as of renouncing the responsibilities and the glories of the Colonial Empire. Such has been the reaction that even a Radical Government dare not talk about letting the British Colonies go, and could not succeed if it dared the attempt to cast them off. This view of what may have been in Lord BEACONSFIELD's mind when he declined to disturb Free Trade may or may not be the true one, but at least it fairly harmonizes with events.

Is the balance of trade less favourable to Britain now than it was five, ten, or twenty years ago? Are the working classes suffering in employment or wages, or both, through the hostile operation of foreign Protectionist tariffs? Would it be wise for Britain to try a retaliatory policy as a means of benefitting her own people, either directly or through compelling foreign nations into something like "fair trade?" These questions, and others like them, are now debated at workingmen's meetings, at election meetings, and in the pages of leading newspapers, magazines and reviews. We do not on this occasion take up any of the points in debate; at present we say merely that that the great question of Protection or Free Trade, which but yesterday was believed to have been settled for good in England, is now up again and re-opened for discussion. And this, if it be truly said, is saying a great deal. To say that Free Trade is yet on its trial in England is a most important statement to make—important if true, we mean But is it true, or is the present "Fair Trade" agitation destined to prove but a nine days' wonder, soon to pass away and be forgotten? One weighty reason may be given why the agitation is far more likely to last, to spread, and to grow stronger than it is soon to exhaust itself and dwindle away. It will be conceded that its cause is unquestionably to be found in hostile foreign tariffs, that of France being the more immediate occasion of the existing excitement. Now, if we could believe that the leading commercial nations, outside of England, were likely at some early day to reconsider their policy of Protection, and to begin adopting, even rather slowly and gradually, the English system of Free Trade, we might further believe that, with the cause of the agitation passing away, the agitation itself must pass away too. But it may be affirmed most distinctly that the signs are all the other way, and that the great commercial nations, instead of leaning towards Free Trade, are actually going further away from it, and are more and more strengthening the Protectionist defences of their own industries. Last year Germany under the lead of the most powerful statesman in Europe, deliberately and on purpose adopted a Protectionist tariff. Last year, too, the people of the United States had in the Presidential election an opportunity of pronouncing afresh on this and other questions; and it is conceded on both sides that the Democrats were beaten mainly through the popular dread that if in power they would reduce the tariff, and admit foreign goods too freely into competition with American. This year France puts her seal and signature to a highly Protectionist tariff, one calculated to be more efficiently protective than any she ever had before. Nor is the thing done rashly and without thought, either, for the new tariff is the result of two years arduous labour on the part of her picked commercial men in both Chambers. But when we say France, Germany, and the United States, we may as well say, the whole commercial world outside of the British Empire. And the

British Columbia—those having representative government, that is—are going the Protectionist road too, nothing surer It being the undeniable fact that Protection is not declining abroad by any means, but on the contrary growing, and spreading, and strengthening with every year that passes, the Free Traders hope that the Fair Trade agitation in Britain will soon die out cannot reasonably be based on any expected concessions from foreigners. It is open to them to argue that she can and will prosper under Free Trade on her own side, let foreigners have as high Protection against her as they choose. But the delusion of an expected successful Free Trade propaganda abroad must be abandoned, it is no longer tenable in the face of present facts And if foreign Protection is to continue, then, we say must the agitation in Britain for Reciprocity or retaliation continue too

THE ENGLISH HARVEST.

The harvest prospects which a few months ago were bright in the United Kingdom are now the reverse, and the probabilities are that in some quarters suffering will be the result. The London correspondent of the New York *World*, telegraphing to that journal on Saturday, says:—"I have just returned from a week's journey through the Midland counties, where the general state of affairs is much worse than can be gathered from the London papers Trade everywhere is much depressed, and the incessant storms have apparently ruined the harvest. In many parts the crops have been lying upon the ground for a fortnight, torrents of rain forbidding all attempts to house them. Where the wheat has not been cut it has been levelled and battered by the rain and hail into wet straw. Mildew has set in everywhere, and the cut grain is either blackened or sprouting. Thousands of farmers will be ruined and many a landlord will fall with them. There has not been a really good old-fashioned harvest in England since 1854, the year of the Russian war. The crops in 1857, 1858, 1863, 1864, 1868, 1874 and 1878, were average crops. In 1855, 1856, 1859, 1861, 1865, 1867, 1869, 1870, 1871, 1872, 1876, 1877 and 1880, the crops were much below the average, in 1860, 1862, 1866, 1873 and 1875, they were very deficient, 1879 was the worst harvest ever known, and 1881 threatens to cap the long list of disasters and literally put an end to wheat growing in England. From Ireland, too, the news is very gloomy, the late heavy rains having done great damage. We are particularly *sorry* for Ireland, whose rural population is not in a position to stand another bad harvest. That country has been singularly unfortunate for several years past, and just at a time when the prospects were declared to be the most brilliant for many years, a rainy season set in, the result of which has already been very injurious, and the future outlook is the reverse of favourable. A good harvest in Ireland had been hoped for several reasons; a bad harvest will, we fear, tell a sorrowful tale. A failure of the crops will lessen the ability of the honestly disposed tenant farmer to meet his engagements with his landlord, and will afford mischievously disposed persons the opportunity of sowing still deeper in Irish soil those dangerous communistic and socialistic seeds which have called forth the strong denunciation of the head of the Roman Catholic Hierarchy, and cannot fail to produce an undesirable crop wherever they take root. It will be used for political and seditious purposes by those who are labouring to bring about disintegration of the Empire; and it will be taken advantage of by that class of agitators who have little or nothing at stake in the country, whose energies are now bent in the direction of prejudicing the people against the most important Act placed on the Statute book of the United Kingdom in the interests of Ireland for many a day. In this country we have reason to be thankful that we have not a similar story to tell For a number of years past harvests have been all that could be desired, that which is now nearly gathered in being one of the best in a series of very productive years. In the old country our climate is often referred to in disparaging terms; but who that has experience of both would not prefer the clear skies of Canada to the humid atmosphere of England or Ireland, where a whole day's sunshine is the exception—and a rare exception at that. We do not say that a failure of a season's crop in Canada is not a possibility just as well as in the United Kingdom; but all the conditions of our climate considered, most people who know what both are will decide in favour of the situation in Canada.

EDITORIAL COMMENTS.

The *North American Trade Review* informs its readers that banks all over the United States now refuse to receive Canadian silver fractional currency except at a heavy discount The discount, it says, amounts to five cents on the face value of each of the pieces from the twenty-cent piece upward, while the ten-cent piece and the five-cent piece are received for only seven and three cents respectively The *Review* says that is done on the principle of "fit for fat," the Canadians having discounted American silver.

The London *Globe* publishes an article on the Governor-General's trip to the North-West as follows:—"It is, of course, to the West that we must look for the rapid growth of Canadian resources in both wealth and population. There is still a boundless field there for the prudent emigrant, and its rich virgin lands may be had for almost nothing. This state of things will alter as the country gets filled up, but in the meantime it offers temptations which ought to decide the question of their destination for Englishmen and Scotchmen contemplating emigration, and hesitating between the Dominion and the United States."

In the annual report of the American Iron and Steel Association for the year 1880, which contains a vast amount of valuable information, the Secretary says

"We hope that Canada may yet make her own iron and steel, for the production of which her resources are ample. In the manufacture of charcoal pig iron, especially, we cannot see why there should be any hesitation whatever. With the proper effort she should make as good charcoal iron as there is made in the United States, and plenty of it. It is surely a reproach to Canadian enterprise that Canadian ores should be imported to this country while Canada is importing our iron. This is the Spanish policy. During the past year arrangements have been made by several Bessemer steel establishments in the United States to secure from Canada a supply of ore that is practically from phosphorus."

From the report, for 1880, of the American Iron and Steel Association we gather that the output of pig iron in the United States that year was 4,394,414 net tons, an increase of 40 per cent. over the previous year. That of Great Britain was 7,721,833 gross tons, an increase of about 30 per cent. Comparing 1880 with 1870, however, the British production has grown 17 per cent. in ten years, while that of America has doubled. The United States make more Bessemer steel than any other country. During 1880, 1,074,202 gross tons of ingots were made—an increase of 30 per cent. over the production of 1879 The steel rails made weighed 852,190 gross tons, an increase of not quite 40 per cent. over the output in 1879. In England, in the same year, 1,044,382 tons of ingots and 739,010 tons of rails were turned out. In the opinion of Mr. Swank, the Secretary of the Association, the steel works of the United States will, at the close of the present year, be equal to an annual production of 1,750,000 net tons of ingots and 1,500,000 net tons of rails.

Writing from London to the *Canadian Spectator*, the Rev. A. J. Bray says:—

"Even Canada is scarcely known at all here. To talk with business men in their offices, and people one meets in railway travelling, is to find how little is known of Canada They call us all Americans, and, truth to tell, very many Canadians not only permit but encourage the use of the general word. I do not wonder at it, for one hardly likes to register from a country of which little or nothing is heard or known."

Some of our contemporaries are in the habit of wondering how it is that in proportion to the number of persons who emigrate to the United States, the number who leave for Canada is small. We hold that the above statement, to a great extent, accounts for the fact. It is unfortunately too true that information about Canada and Canadian affairs are comparatively unknown in the United Kingdom and on the continent, while, on the other hand, information regarding the neighbouring Republic, its resources and its advantages is generally diffused. Lately, however, an improvement has been noticed. Canada is coming more prominently to the front, and, as the result of the publication of the personal observation of influential travellers, the visits of representative agricultural delegates appointed to report upon the suitability of Canada as a home for agriculturalists, and the circulation of literature by the Department of Agriculture, we may expect that much of the ignorance which has so long prevailed will be removed.

Sir Edward Sullivan, in the *North American Review* thus sets out the results of Protection v. Free Trade Thirty years ago England acted exactly like a man who has a manor overstocked with game and who says to his neighbours all round, I have plenty of game, more than I want and I shall be very happy to let you shoot over it whenever you like and of course you will let me shoot over your manors in return' But the neighbours said, 'How kind of you! We will shoot over your manor with pleasure and kill as much of your game as we can but as for allowing you to shoot over our manors, no! We are sorry we cannot do that, we have no game to spare, and what we have we preserve strictly for our own shooting! Well, that was thirty years ago In the meantime our neighbours have shot down our game very close whereas, by strictly preserving their own manors, they have an immense head of game themselves And now again we ask for a share of it 'Our game is getting short,' we say, 'but yours has immensely increased, let us shoot over your manors give us a share of your consumption). But our neighbours still say, no! They say more they say, 'What fools you are to complain about our shooting your game! We never asked you to let us do so you offered it of your own free will, and we told you distinctly at the time that you must not expect us to do the same to you'

The following letter, written by General Jackson to General Robt. Patterson, of Philadelphia, in 1823, shows the position of the former upon the question of Protection:—

NASHVILLE, May 17, 1823

Colonel Robert Patterson, Philadelphia.

SIR—A few days since I had the pleasure to receive the gmas hat which you had been pleased to present and forward to Mrs Jackson as a token of the respect and esteem entertained for my public services. Permit me, sir, to return to you my grateful acknowledgments for the honour conferred upon us in this token. Mrs. Jackson will wear with pride a hat made by American hands, and made of American materials Its workmanship, reflecting the highest credit upon the authors, will be regarded as an evidence of the perfection which our domestic manufactures may hereafter acquire, if properly fostered and protected. Upon the success of our manufactures, as the handmaid of agriculture and commerce, depends in a great measure the independence of our country, and I assure you that none can feel more sensibly than I do the necessity of encouraging them. For this instance of your respect and esteem and the flattering language with which you have noticed my public services, accept, sir, my most sincere thanks. With great respect, your very obedient and humble servant,

ANDREW JACKSON.

A general order has been issued by the Duke of Cambridge to the effect that regimental colours are not in future to be taken on active service with the regiment, but are to be left in the depot. When, however, a battalion goes abroad in the ordinary course of relief the colours will be taken. This decision has been come to after careful consideration of eighty-three replies to a circular which was sent by the Commander-in-Chief to all general officers and colonels commanding battalions in the United Kingdom inviting their opinion on the subject. Now that most of the old fighting regiments have lost their individuality, and have been re-named with the title of some county with which in many cases they never had any connection, it is perhaps as well that the records of their gallant deeds should be left at home and preserved in memory of the departed regimental numbers, titles, and traditions.

Professor Langley, the director of the Allegheny Observatory, lays claim to a discovery which, if true, will form an entirely new starting point for researches in solar physics. Professor Langley tells us that the sun is not really white, nor yellow, nor red, as we see it at different times of day, but that sunlight is blue. It is our atmosphere that gives it a false colour. In a word, Professor Langley would have us believe that the sun ought to appear as blue as the electric spark, and if we looked at the latter through a yellow atmosphere, it would not be unlike the sunshine we see. The *Photographic News* suggests that, if Professor Langley is right, not only will he upset physical theories in general, but photographic theories in particular. Professor Langley proposes to undertake some experiments at different altitudes, so as to be as free as he can from the lower strata of atmosphere, at any rate; and with this view he intends to establish two special observatories, the one at a station 2,000 feet high, and the other 14,000 feet above the level of the sea.

NATIONAL INDUSTRIES.

[We intend that this will be a place to preserve notes of new industries in all parts of the country for publication and reference. It will take but a few minutes time and a postal card to acquaint us with what is going on in your neighborhood, and we will always thankfully receive all legitimate industrial notices, which must be accompanied by the writer's name as a guarantee of good faith.]

NEW INDUSTRIAL ESTABLISHMENTS

The following notices appear in the Canada Gazette

Notice is hereby given that, under the Canada Joint Stock Companies Act, 1877, Letters Patent have been issued under the Great Seal of the Dominion of Canada, bearing date the second day of August, 1881, incorporating Edward Anderson Craig Pew, of the Town of Welland, in the County of Welland, in the Province of Ontario, in the Dominion of Canada, Esquire, Abel D Breed, of the City of New York, in the State of New York, one of the United States of America, banker, Jonathan Turner, of Burlington, in the State of Iowa, one of the United States of America, sugar refiner, the Honourable Richard William Scott, of the City of Ottawa, in the said province of Ontario, barrister-at-law, Horace Brightman, of the said City of New York, banker, James McLaren, of Buckingham, in the Province of Quebec, in the said Dominion of Canada, President of the Bank of Ottawa, and Sayers Silas Hager, of the said town of Welland, Esquire, for the purpose of manufacturing, refining, buying and selling of starch, glucose, grape, cane and other sugars and syrups to be made from corn and other materials, and the owning or hiring of lands, docks, buildings and plant necessary therefor throughout the Dominion of Canada, by the name of "The Grape Sugar Refining Company of Canada (Limited)," with a total capital stock of one hundred thousand dollars, divided into one thousand shares of one hundred dollars

Public notice is hereby given that, under the Canada Joint Companies Act, 1877, Letters Patent have been issued under the Great Seal of the Dominion of Canada, bearing date the twenty-seventh day of July 1881, incorporating Matthew Whiting, of the City of Brantford, in the County of Brant, in the Province of Ontario, in the Dominion of Canada, Esquire, William John Scarfe, of the same place, manufacturer; Hugh McKenzie Wilson, of the same place, barrister-at-law, Austin Demmons Cable, of the City of Montreal, in the province of Quebec, in the Dominion of Canada, broker, Morton Frary Hale, of the said City of Brantford, broker, and Robert Charles Smyth, of the said City of Brantford, barrister-at-law, for the purpose of manufacturing and selling churns and other farm and dairy utensils throughout the Dominion of Canada, and of acquiring and holding the property required therefor, by the name of "The Farm and Dairy Utensil Manufacturing Company (Limited)," with a total capital stock of fifty thousand dollars, divided into five hundred shares of one hundred dollars

Mr. J. W Brownell, Amherst Shore, is doing a good business in the boot, shoe and tanning trade.

A beet root factory is projected in Whitby It will require for its support 1,500 acres of beet roots.

The spool factory at Elgin, A.C., is running in good shape, and is a source of great benefit to the people of that section

The manufacture of white metal goods of all kinds has been started in Waterville, Nova Scotia, and is in active operation

A large loom from the Levingston mills, Laconia, N. H., passed over the Intercolonial the other day *en route* to Robert Fraser, Rocklin, Pictou County.

The extraction of iron ore has been commenced on the McDonald-Weaver property, East River, Pictou, N S, and is being shipped to the United States.

Canada is going ahead beyond a doubt, It has now a stock farm of 60,000 acres and a dairy establishment of 70,000 Mr. Cochrane owns the first, and Mr Morton the second

The prairie grass of the North-West is being utilized for mattresses. Mr. Joseph Barrowclough has introduced into Manitoba the requisite machinery, and is now erecting the necessary buildings

Newcastle, New Brunswick, is to have a spool factory, main building 90 x 28 feet, two storeys high; sizes of other necessary building not yet decided on. Will employ from 20 to 25 hands summer and winter.

A few weeks ago, the Kentville, N S, *Chronicle* mentioned that Mr J W Currier, of Waterville, was about engaging in the manufacture of white metal goods of all kinds, and it is now glad to be able to announce that the new enterprise is in successful operation

One thousand two hundred and eighty acres of the Julius muskeg in Manitoba have been leased from the Dominion Government for the purpose of manufacturing peat on a large scale. Thirty thousand dollars are to be invested in turning the muskeg into a fuel yard.

Mr. G. D. Carter keeps men steadily at work at the mine on Mr. Newcomb's property in Albert Co., N B two tons of a very good quality already been taken out Mr C more hopeful of the lead than well and says that the thing looks in the better it is

The Nova Scotia Glass Co Glasgow, have just placed an order for 1,000 boxes to pack the goods of manufacture This means the company are pushing their works ward and they confidently and hope to be able to make glass Mondays. The candlesticks have just been set

Messrs Freeze & Goodall Bros. copper and lead mine in New Ross A C, gives every indication of turning out well. Last week Dr Goodall sunk to a depth of six feet in the They have discovered three leads of mineral one of silver, one of copper one of lead It is said that a man at Sussex offered the Doctor for 1-16 of the mine, but was not accepted once

The Amherst boot and shoe factory is prospering greatly The company employ 90 hands and the factory is running night and day The orders on hand amount to $ 000, and if the spring trade proves good, the business of the company the present year will be increased $130,000 Last year it was only but that was an increase of nearly cent. over 1878

A factory is being organized in Valleyfield, P Q, for the manufacture of fecula of potatoes It will produce 000 lbs of comestible fecula, 12,000 of fecula for the manufacture of cotton and 100,000 lbs of glucose syrup a new source of revenue will be opened up to the farmers, and another illustration afforded of how the establishment of one industry helps on that of another The factory will be in operation October.

Mr. S. P Benjamin, of White Rock Mills, Kings Co, N S, has started in that place a barrel and box factory for making boxes and barrels for the putting up of apples and plums, etc He has put in improved machinery, and is able to turn out 240 barrels a day besides boxes. Next year Mr. Benjamin intends putting in machinery that will turn out at least 60,000 barrels, saying nothing of boxes, which he can furnish to an unlimited extent.

The Messrs Edgecombe, carriage manufacturers, are pushed to their utmost capacity In order to meet the orders that are constantly coming in upon them Yesterday afternoon they sent twelve carriages of their own manufacture over to the New Brunswick Railway Station all dressed to parties in Edmundston and the country around It was the best exhibition of factory work on wheels that we have seen here for quite a while and some of the vehicles were very handsome and excellently constructed.

Messrs A Robb & Sons, who have been adding to their foundry building at Amherst from time to time, now find it necessary to build an addition 40 feet, 2 stories, in order to extend the machine shop and stove mounting room and give space above for a new pattern making shop and its necessary wood working machinery The building connected with this establishment themselves, now cover an area of about half an acre. This firm will make a good show of furnaces and ranges at the Dominion Exhibition, Halifax

Messrs Charles Chinnock and H Beer of New York city, were at the Bridge Thursday, and visited the Rhodes' Bros' mill yesterday to learn if they could introduce a new industry here. They propose to start an establishment which will be devoted to preserving potatoes, apples, etc., for shipping purposes. By it 130 may be reduced to the bulk of 30 barrels, and the principle is much the same as that of steam pressing apples. When the potatoes are pressed they become like a gluttinous substance, and are very heavy. The gentlemen have since gone away but they expect to return in ten or twelve days. Two gentlemen, whose names we have not learned, are now at the Barker and are looking around with a view to establishing an industry here for renovating old feathers for mattresses, pillows, etc. It is their intention, if they find the work practicable here, to commence business at once.

Says the Halifax *Herald* Mr J Anslow, editor of the N E Advocate who spent a few days in Windsor, on his arrival in this city last night, reports that the Windsor Furniture Factory is running at full speed with orders ahead The Windsor Foundry Company require more hands They have been running all the year round since the National Policy came into operation Previously they used to suspend operations three months a year To give an idea of the change the National Policy has brought to them, the proprietor instance the case of a St. John firm who under the old tariff imported all the ranges from the States, now get them from Windsor. On Saturday the firm received an order from Ottawa and vicinity for seventy stoves! This but a sample order, with a promise of larger ones to follow Here, then, the National Policy enables a Nova Scotia manufactory to send its products nearly 1,500 miles, into the Upper Provinces. It not only enables them to compete at home with the Canada maker, but to go up to the Canada

...ect and successfully compete with ...ers and those other United ... lists And it we can send our ... to Ottawa, and our sugar and ...thing to Winnipeg, why not go into ...er lines of manufactures? The ... Foundry has also sent to Mon... during the present season a number ... ships power capstans And this but ... third year of the National Policy!!!

... we are sure will be glad to ... that the Windsor Cotton Factory is ... assured a success Mr Mark ... last week was sent by the committee ... a delegate to Montreal, to solicit ... balance of the stock, amounting to ... at $7 000 Mr Curry writes that he ... ured $10,000 on the day he left, ... that parties were willing to take all ... cotton goods that could be manufactured This is satisfactory and encouraging ... does not surprise us as it is only ... what we were sure could be done The ... stock we think could have been ... in Hants county, or even in Windsor ... for that matter, but perhaps it is ... to have parties in Montreal interested, as it would assist greatly in placing ... goods to better advantage in the market The remainder of the stock it is more than likely will be taken in Montreal If not then there will be no difficulty in getting that small amount made up here The Cotton Factory a success means a great deal. Windsor has been a stand-still for years, and this will be the means of turning the tide of success in our favour It means the employment of at least 150 hands directly, and double that number indirectly It will be a stimulus to trade, and be a blessing and a boon to everybody Let us prayerfully the work commence at once, and ... all that is good and gracious don't let anybody throw an obstacle in the way of the successful carrying out of the scheme so well advanced. In that respect let us be different from some other places we could mention, which are larger, and, consequently, should know better—*Windsor Mail*

We offer a second instalment of our reports on the manufactures of Portland. We have grouped the Portland workshops by themselves, as we desire to show to the people of Portland what a very large number of them are dependent upon the factories for a living, and also to show their representative in Parliament, Mr. Isaac Burpee, what many of the most influential of his constituents think of the National Policy. In every case our reporters have put the question to the manufacturer: "Do your work people live in Portland?" and in nearly every case the answer is that they do. That is to say, that in the shops we have noticed, so far, there are employed about 1,100 hands, on whom at least 4,000 people, or one-fourth the entire population of the town, are dependent for their daily bread. That our readers may see at a glance who the principal manufacturers are and the number of persons they employ, we supply the following list, which will be handy for reference: Parks Cotton Factory, 375 hands; James Harris & Co., foundry, etc, 222 hands, Francis & Vaughan's shoe factory, 190 hands; Phillips Bros' shoe factory, 12 hands, C D. Damery, insoles, etc., 30 hands; Chesley Bros' foundry, 30 hands; Hazlehurst & Co's foundry, 30 hands; Connor's ropewalk, 45 hands; Fowler's spring and axe factory, 25 hands; Abrams & Kerr, machinists, 30 hands; Geo. H. Waring, machinist, 29 hands; St John Bolt and Nut Works, 22 hands; Miller & Waring's Nut Works, 3 hands; C E Burnham & Co., furniture factory, 50 hands; J. B. Emery, excelsior, wringers, etc., 10 hands; Fairbanks & Hawes, sash and door factory, 15 hands; Price & Shaw, carriage factory, 30 hands; Kelly & Murphy, carriage factory, (estimated) 20 hands; McAfee's foundry, Mealey's tin shop, H. Bond & Son and Robt. Cutler, harness; Lawe's dye house, Wales' brass foundry, Fowler & Son, ships' wheels, 25 hands. Our reporters have also made inquiry in reference to the rates of wages as compared with the rates going three years ago, and they find that there has been a general advance. The estimate for the whole of the workingmen is an advance of 25 per cent—*St. John Sun.*

OUR OIL FIELDS.

(Globe.)

PETROLIA, Aug. 29

The petroleum fields of the County of Lambton present an appearance unique in Canada, being altogether different from anything to be seen elsewhere in the whole country. The aspects of life, too, are singular, and many of them find their only parallel on this continent in the gold and mining silver regions. Here all the stages of the history of a California gold field have been present—the rush of population, the wild excitement and mad speculation, the sudden colossal fortunes which have turned the poor man into a millionaire, immense riches missed by the mistake of a moment, and losses which have turned once wealthy men into poor and obscure wanderers over the face of the earth. Towns have grown in a night and vanished in the morning, and the tales are told of wealth bestowed so lavishly, so indiscriminately, that they rival the wonders of the Arabian nights. The later history of the oil fields has been like that of the older gold fields, where mining has parted to a large degree with the element of speculation and the prospects of rapid fortunes, and become a regular branch of industry, with the ordinary profits of a flourishing manufacturing business.

The oil region is almost limited to Lambton a trending line northwest from the Bradford oil district of Pennsylvania This line is not continuous, but appears in patches long and narrow at Bothwell Oil Springs and Petrolia At Sarnia likewise on the northwest and southeast line petroleum has been discovered lately in sufficient quantity to promise the opening of a valuable addition to the list of oil fields Here and there elsewhere throughout the county slight indications of oil have been noticed and it is not impossible that in time the petroleum region may be found to possess wider limits than at present is imagined. Of these regions by far the most important oil field is in and around Petrolia This town lies far out of the ordinary route of travel, its railway communications being by branch lines of branch lines And there are few people amongst a public more or less familiar with the history of excitement who have any idea of the extent and interesting features of this strange town and its strange suburbs, wherein is derived the light of almost the whole Dominion from the Rockies to the Gulf of St Lawrence.

The town of Petrolia lies in the township of Enniskillen, twenty miles southeast of Sarnia, and eight miles northwest of Oil Springs, formerly the centre of the oil production of Ontario It is reached from the north by a branch line, five miles long from Wyoming, on the Sarnia extension of the Great Western Railway, and from the south by a branch line of the Lambton extension of the Canada Southern The site is in the midst of the great plain which almost everywhere throughout this county is as level as a Western prairie, and broken only by the ravines of several rivers or creeks sweeping round and round in sluggish curves till they empty into the St. Clair River. The creek which flows across the low, narrow town of Petrolia is Bear Creek, sometimes a river of large volume, but now a series of stagnant pools separated by reaches of sand The flat is about an eighth of a mile wide, crossed by but one street, the main street of Petrolia. The hollow is sometimes called the valley of churches, for the only buildings on the flat are four wooden churches, raised on posts to a sufficient height to prevent the water entering the churches in times of freshets. The railway is considerably elevated above the flats, and the sidewalks, from which branches are laid to the church doors, look like narrow foot bridges. On either side the banks rise steeply to the uniform level of the plain, and the town stretches on either side to a distance of three-quarters of a mile. The buildings are nearly all small frame buildings, there being scarcely more than half a dozen brick structures in the place, and these have been built only within the past year or so. In fact, until lately the residents felt inclined to look upon Petrolia much as the Chinese regard California—a good place to make money but to be got out of as soon as a sufficiency had been acquired.

This state of things is not likely to continue much longer, as the lapse of years and comparative steadiness of the production has seemed to indicate that the prosperity of the town is likely to be more than evanescent. Still, although improvements are being made, gardens are few in number and generally neglected, buildings are not kept in trim condition with occasional coats of paint, and the erection of a valuable brick building subjects the enterprising builder to a fire of discouraging comments on his rashness in thus sinking money. Yet there are a few, and those among the leading men, who have confidence in the future of the town. One of these, Mr. Lancey, a well known oil refiner, is completing on the Main street a handsome brick block costing about $20,000. In defiance of the "croakers" he has had cut in the large stone ornaments which surmount the front of the building the name "Lancey's Folly," and hopes to see the progress of the town make the name a humorous sarcasm on the faithlessness of his neighbours.

The streets are of blue clay—in dry weather beds of dust, and in spring and fall perfect quagmires. Countless loads of gravel have been deposited on these roadways, only to disappear as completely as salt thrown into a pot of boiling porridge. Yet apparently the streets are not wholly neglected, for the town is taxed, I am informed, three mills on the dollar, and there appears to be comparatively little else in the way of corporation improvements on which money can be spent. A portion of the main street has been laid with a double track of planks, and this, when kept in repair, furnishes a very fair highway. The *fascine* system has not been adopted, probably because it has been overlooked, but there is no doubt that a thick layer of twigs and branches, covered with a layer of gravel, would make a cheap, durable, and satisfactory roadway.

But flatness, wooden houses, and blue clay streets are not the only nor the most prominent features which impress a stranger visiting the great oil town The houses do not seem sufficiently numerous to afford accommodation to more than two thousand people, yet the town contains twice that number, and if the suburbs extending to the north-west and south-east be included, several thousand more. The people are active, businesslike, and intelligent, in fact wear more the air of citizens of a large and busy city than a quiet country town Here are gathered men who have seen much of life and understand its ways. The leading cities of Canada, United States, and England are all represented by good business men, and as a consequence Petrolia can present as fine a body of representative business men as any of the younger cities of the Dominion If the town can boast of little architectural beauty, or of shady lawns and streets, these defects are due merely to transient causes The very class of people are here who will yet make the town all that taste can make it That may be much, how much I could not determine, as the long continued drouth and intense heat have burnt vegetation to a light brown the hills, on the trees is drooped and withering, and even the wayside weeds have prematurely assumed the sear tints of autumn In a season of ordinary wetness the place would wear a more inviting appearance as it now is there appears much room for the improvement which no doubt will be made within a few years. The great feature of the place, however, is the oil business, with all that the term implies Should eyes or ears fail for a single moment to keep this feature in its due prominence before a visitor his nose will restore the proper impression Gas is everywhere present In damp weather it penetrates into the bedrooms, and renders sleep a difficult thing for persons of sensitive olfactories The buildings become discoloured, for nothing but zinc paint will resist the peculiar influence of the gas silverware turns black, and even the walls and ceilings of the houses show the penetrating effects of the atmosphere of the place Yet residents become so habituated to it as to suffer little or no inconvenience Whether the presence of this gas has a deleterious effect on the health of the inhabitants it is impossible to say. The ratio amongst young children has been excessive Several funerals per day of very young people were of ordinary occurrence last summer This, however, is not a necessary result of the peculiar industry of the neighbourhood Scarlet fever, diphtheria, and typhoid were the chief causes of last year's mortality, and the neglect of drainage is said to have been responsible. At any rate the improved drainage secured lately has been attended by a very marked improvement in the health of the inhabitants Drainage, fortunately, is not so difficult as to prevent its being thorough, for Bear Creek lies far below the level of the town, and sewers could easily be laid to connect with it. Among adults there is little complaint made of ill-health beyond the too conscious possession of a liver.

Water is exceedingly scarce, there being but half a dozen or so good wells in the town. "Free as the air we breathe or the water we drink," is an expression which is rarely used even in the pulpits of the town, for to say nothing of the cost of raising the gas water has for years been sold at the rate of one cent a gallful. Water being scarce, the hotels do a good bar business, and whiskey is in demand. Nevertheless, drunkenness is uncommon, and the place one of the most orderly in the whole country

In my next letter I shall refer at length to the oil industry of Petrolia.

LOCOMOTIVE ENGINEERS.

Public Meeting In London.

The City Hall was well filled last night on the occasion of the meeting of the Brotherhood of Locomotive Engineers. Representatives were present from various parts of the United States. Mayor Campbell occupied the chair, and surrounding him were: Messrs. W. R. Meredith, Q.C., M.P.P.; D. Macmillan, M.P., Hugh Macmahon, Q.C.; P. M. Arthur, Grand Chief Engineer, of Cleveland, Ohio; Rev. W. Herridge, C. F. Hanson, H. Crouch, A. B. Powell, ex-Ald. Skinner, Peter Temple, Chief Engineer of London Division; Tinsley, of Hamilton; G. Burdett, Second Assistant Grand Chief Engineer; M. Erhardt, of Rochester; W. Fogg, Ald. Stringer, J. Crowden, Conductor Wallace, and others.

His Worship made a neat introductory address, and then introduced the speakers.

Mr. C. F. Hanson, Locomotive Foreman, London, remembered quite distinctly when the first railway was opened in England and this country, and at that time all sorts of evil results were predicted. Stephenson was laughed at when he said the trains would run 20 miles an hour. "What if a cow got in front of the engine?" was asked by the jeering sceptics. "Then it will be bad for the cow," answered Stephenson, and the work went ahead. There were now in this country over 90,000 miles of railroad, representing over a billion dollars in value As the railway interest grew it was found that the men who should be given in charge of the engines required to be those of iron nerve, able to coolly and quickly decide in moments of danger, and as the number of engineers increased, they, in turn, found it to their advantage to bind themselves together for mutual benefit.

Mr. P M. Arthur, the Grand Chief, was received with cheers. He was glad to be present on an occasion like this, fraught with importance to the engineers, the public and the nation ever What was this Association? What had it done? Looking over the past it was found that twenty years ago there was no association among engineers, and as a result the men of the throttle were but little respected, little known. Isolated from home and society, their business caused serious harm to their characters. He thanked God that he had prompted a few men eighteen years ago to form an association to promote the interests of the profession, and elevate their social and moral characters In the city of Marshall, Mich a few engineers of the Michigan Central met and issued a notice to their brethren along the line to assemble in Detroit a short time later on The night of meeting came, and twelve engineers opened Division No 1 to be the pioneer of the great work of reformation. Subdivisions soon began to spring up, and after the lapse of an incredibly brief period there were over forty lodges and a Grand Division Gradually the order spread its influences abroad until now there were 191 subdivisions in existence, numbering in their membership nine-tenths of the best engineers from the Gulf on the South, the Atlantic on the east and the Pacific on the far away west (Cheers) A monthly journal had been begun, and at each issue it was crowded with information of an inestimable character to the Brotherhood and railroad men generally Its circulation was over 9,000, and he wondered not, therefore, that the members were proud of it The Widows and Orphans Fund had been organized, and was one of the best features in connection with the Brotherhood Already over $1,145,000 had been expended from its treasury (applause), and the joy and peace it had brought to the homes of deceased engineers was beyond calculation If these were the only objects of the Brotherhood, it might be asked why it had supported strikes? He disliked the word and disliked the strikers themselves There was nothing in the society to encourage these disagreements, and he was pleased to say that the few strikes engaged in by engineers had been forced upon them. All honourable means had been used in every case to come to some understanding with the superintendents of the roads, and only when these had failed was coercion resorted to. He wished, therefore, to impress on his hearers that there was no disposition among the members of the order, or nothing in the constitution to encourage strikes. (Applause) It was only when their interests were at stake that they employed the means in question to effect an adjustment and defend their rights. The strikes throughout the States, which resulted in riots, have been frowned down upon by the Brotherhood, and at all times it stood ready to man the deserted engines and take out the trains He was very glad to say that their relation with the railway companies, the country over, were of the most amicable character (applause), and he hoped always to have that desirable state of affairs continued While he encouraged his fellow members to stand up for their rights, he at all times urged them to do it respectfully and without overbearing haughtiness. The Order differed from trade unions, in the respect that it dictated to none whom they should employ on their railways. He did not believe in a wishy-washy policy towards employers, but that at all times the members should hold up their heads manfully. (Applause) Money did not make the man; it was character; and hence he consistently and constantly advocated a policy that should be manly and straightforward. He spoke a few words on capital and labour, and resumed his seat after thanking the audience for its patient attention, and to His Worship the Mayor for presiding.

Mr. D. Macmillan, M.P., was thankful to the Brotherhood for the privilege of being present and learning something that he had not known before. Ignorance on his part in the past had prompted him to suppose that the order had for its chief object the squeezing of every possible dollar out of the employers of its members. (Laughter) He was very happy to say he knew better. He spoke in a eulogistic strain of the principles of the Brotherhood and the responsible nature of the engineer's calling. He would not delay his hearers further, and concluded with a complimentary reference to the masterly speech of Mr. Arthur, the Grand Chief.

Hugh Macmahon, Q.C., when he had received the invitation to attend and listen to the Grand Chief, had been deeply gratified on being able to accept it. For various reasons he was happy to be present. In the first place, to hear the able exposition of the principles of the order by Mr. Arthur, and in the second to learn of its rapid progress throughout the country. It was but another illustration of what might be accomplished by energy and push. (Great applause.) This was a very suitable year for the Union meeting in this city, for it was but a few months ago since the centenary of the immortal Stephenson had been celebrated. (Hear, hear.) If he were alive at the present time he would find himself the father of one of the largest and most respectable families in the world—(applause)—of men whose position imposed on them the highest trust, and required of them the coolest nerves and most active brains He was in thorough sympathy with the principles of the Order and wished it success He joined with His Worship the Mayor, in welcoming so large a number of visitors to the city, and sat down amid applause.

Addresses followed by Mr. A. B Powell, Rev W Herridge, Ald. Stringer, Mr. Densely, of Hamilton, and Mayor Campbell A vote of thanks was then tendered Grand Chief Arthur.

A resolution of sympathy with the President of the United States and the people of that great nation in their present position was honoured by a standing vote, and, after the National Anthem had been sung and three hearty cheers given for the Queen, the meeting was adjourned

The gentlemen reassembled at the Grigg House, when a dinner, gotten up with Mr Holly's usual skill and taste, was enjoyed. Speeches and songs were subsequently the order of the hour, when the proceedings were closed with the National Anthem.—*London, Ont., Herald 31st inst.*

RAILWAY AFFAIRS.

Montreal, 30th.—A meeting of the shareholders of the Atlantic and North Western Railway Company was held at Montreal to day, at which the following named gentlemen were elected directors—George Stephen, Duncan McIntyre, Hon. Bradley Barlow, Hon J. J. C Abbott, Hon. P Mitchell, Hon. Senator L. R Thibaudeau, C O Colby, M P, R J Kimball, of New York, and A. B Ubaldo.

The shareholders passed a resolution instructing the directors to proceed at once to cause surveys and plans of the bridge across the St Lawrence near Montreal to be made, and also surveys to connect the line and bridge with the Canadian Pacific Railway westward, and also branch lines to connect with the bridges and railways south of the St. Lawrence River, in Canada and the United States This railway charter gives the company power to build the railway from the Atlantic seaboard in Canada via Lake Megantic, Sherbrooke, Montreal, Ottawa, and Fresh River, to Lake Superior, and to connect with any railways in Canada or in the United States, or to purchase any existing line or lines of railway, to run steamboats and build wharves, elevators, etc. The capital of the company is $10,000,000, and gives the company power to issue bonds for $20,000 per mile on all railways constructed or purchased, and $10,000 per mile on preference stock.

At a meeting of the Board of Directors of the Canadian Pacific Railway Company, held here to-day, the contract for the sale of the $20,000,000 of the company's five per cent. land grant gold bonds was duly executed, and the Board authorized the President and Secretary to execute the mortgage, as authorized at the shareholders' meeting, held here on the 19th ult. The mortgage requiring the bonds is made in favour of the Hon Sir Alexander Campbell, Hon. Alexander Mackenzie, late Premier of the Dominion, and Mr. Samuel Thorne, of New York, as trustees. It is said that the Directors of the following are considering a proposition to take up a portion of the $10,000,000 gold bonds of the Canadian Pacific Railway Bank of British North America, Bank of Toronto, Bank of Commerce, Molson's Bank, Imperial Bank, and Federal Bank. The first issue is to be at 92½ second 93, and third 93½ One half of the whole loan is to be placed on the New York market.

AGRICULTURAL DELEGATES

When, at the suggestion of the Hon. John H. Pope, Minister of Agriculture, the Government decided upon inviting agricultural delegates to visit Canada and see for themselves the suitability of the country as a home for immigrants they adopted a wise policy; for however glowing the accounts given of the country by Government agents, their statements could never prove so worthy of credence on the part of those to whom they were made as the reports of representative men sent across the ocean by farmers for the purpose of "spying out the land." Last year British delegates visited Canada, and their reports were, as a rule, in the highest degree favourable. Tuesday a delegation, consisting of Dr. Wiesbrandt, Dr. Ludwig Schreiber and Messrs. F. Kennard and L. Glock from Germany, with Mr. W. Oesterlaen, of Berlin, Ont., as interpreter, had an interview with the Minister of Agriculture, with whom they conversed on the subject of German emigration to Canada. They are on their way to Manitoba and the North-West. After they have visited the western portion of Canada they will turn their steps towards the older Provinces. As the Germans are a desirable class of immigrants, we hope the visit of the delegation will be attended with the results desired by the Government.

A delegation from Switzerland is expected by the *Polynesian* next week.—*Citizen.*

An Armenian paper the *Nishak*, published at Tiflis, announces the discovery, in the neighbouring forests, of a wild man in the woods—a human being, speaking no language, completely naked, but with body, limbs, and face covered with hair. His nationality is unknown, and as he seems incapable of uttering articulate sounds, it is likely to remain so. An attempt to clothe him met with no success, for he tore the things off him with savage energy.

China is steadily getting her affairs into her own hands. Chinese merchants are proving that they possess energy and foresight as well as wealth and perseverance, and whilst the Government is preparing to meet opponents on land, its merchants and people show that they are preparing to meet the world on the sea. They have just taken a step which, whether it be only a mercantile speculation or a part of a preconcerted plan, is significant of a policy much more comprehensive and far reaching in its consequences than are usually attributed to the Chinese. A mercantile company (Chinese) has started a line of sailing ships principally to carry Chinese labourers to Portland, Oregon. Before long these will be replaced by steamers. The opposition of the labouring and artisan classes to the competition of Chinese low-priced labour is easily dismissed with a few sarcastic remarks upon narrow-mindedness and ignorance of political economy; but China can spare millions of labourers without difficulty, and it would not require millions, or even hundreds of thousands, of such strangers as Chinese, wielded as one man by secret societies in China, very seriously to embarrass any Government whose relations with China might get rather strained, and in case of war the presence of a numerous body of such aliens would be more than embarrassing.

SPIRIT OF THE COMMERCIAL AND INDUSTRIAL PRESS.

ENGLAND'S BALANCE OF TRADE

(Chicago Journal of Commerce.)

The London *Economist*, of July 23rd ult., contains an article on "Trade Depression and its Remedies," in reply to a now famous paper against England's free trade policy in the July number of the *Quarterly Review*. From this reply we make the following quotations:—

It is, no doubt, the tenfaceedness of its attempt to make political capital out of our industrial difficulties that has gained for this article a certain amount of attention. There is, however, another respect in which it is worthy of notice. Than that which it affords there could be no more convincing evidence of the want of knowledge and of sense which characterizes those who declaim about the evils of free trade, and of the airy nature of the remedies they prescribe. It is, for instance, upon the great excess of our imports over our exports that the reviewer fastens as the most conclusive proof of the national impoverishment to which, owing to our fiscal system, we are being subjected. We are each year, he maintains, spending more money than we receive, and thus following the path which leads to national insolvency. The idea that the magnitude of our import as compared with our export trade is a proof of prosperity he denounces as one of the most blundering and most mischievous of the delusions which have helped to blind a portion of the people to the true state of their affairs. To buy more than we sell, and to make that not an accident of our trade, but its permanent condition—this, according to the economist, is a most excellent thing for the country. Practical men, who look at such matters from a strictly business point of view, come to a different conclusion." With what manner of practical men can the reviewer have been brought in contact? They must certainly be very curious specimens of their kind. We had thought that every man of business knows that if we are doing a profitable foreign trade our exports must inevitably exceed our imports. What the value of the exports represents is the cost to us of the commodities we sell abroad, and if we sell at a profit the amount which we bring back in money or in money's worth must necessarily exceed the value of the goods when shipped. And the larger the profit, or, in other words, the more satisfactory the trade, the greater will be the excess on the import side of the account. This is surely patent to all who care to look, and when it is further remembered that through our imports we receive payment not only of goods sold, but also of the interest on our immense foreign investments of capital, of the freights earned by our merchant marine, and of the commissions, insurances, etc., payable to British traders and financial institutions, the causes of the great preponderance of imports is sufficiently manifest. The writer in the *Quarterly*, however, either cannot or will not see them, and he adduces what he believes to be proof that the enormous inflow of foreign product is sapping our resources. "The theorists who uphold the wonderful dogma just referred to, that is, an excess of imports ought to be the permanent condition of our trade) are," he says "lost in wonder over the 'drain of gold,' and are always asking some one to tell them what becomes of it. It goes toward the payment of our debts—that is the heart of the mystery." But the curious thing about this explanation is that during the seven years to which it particularly refers there has been no drain of gold whatever. The figures of our imports and exports of specie during that period are:—

	Imports.	Exports.
1874	£30,379,198	£22,853,503
1875	33,384,789	27,228,042
1876	37,164,241	29,461,062
1877	37,182,783	39,746,119
1878	32,422,955	26,899,646
1879	24,156,538	28,564,912
1880	16,256,883	19,250,503
	£210,663,206	£193,904,797

Thus instead of the precious metals leaving the country, they have been flowing into it, and if, as the reviewer assumes, gold flows from the debtor to the creditor country, then his own contention proves that, instead of our having become heavily indebted to other countries they have been indebted to us. On this showing, instead of living beyond we have been living within our means, spending less abroad than we earned, and consequently leaving a balance due to us which has been brought home in hard cash.

Before proceeding to the main point, we stop here a moment to point out a piece of disingenuous argument. It is evident from the figures that it could not have been the purpose of the reviewer under comment to allege that the aggregate exports of specie in the seven years were greater than the aggregate imports of specie in the seven years, but that the drain of the precious metals from the United Kingdom had begun and had established itself within the period which was the general subject of his exposition. It is an exceedingly suggestive fact that, in the seven years specified, there are three which exhibit an excess of exports over imports of specie, and that, in the previous eleven years, 1863–73, there is only one case of such an adverse balance of the precious metals—in 1872, when the imports were £29,606,012 and the exports £20,335,861, showing a loss of only £727,849. This is very different from the record in the seven years under discussion, when, in 1877 the gold and silver exports were £2,645,320 greater than the imports, in 1878, were £4,429,374 greater than the imports, and, in 1880, were £2,635,020 greater than the imports. The favourable balance of coin and bullion in the five years, 1874–78, was £23,881,593, the aggregate imports have been £170,274,915, and the aggregate exports £146,430,387. But when we take the seven years as a whole, we find that, in consequence of the excessive outflow in 1879 and 1880, this favourable balance has dropped to £10,778,599—a loss of £7,006,994. Five more of such years would entirely wipe it out. Next, when we consider that the Board of Trade returns for the first six months of the current year show the imports of specie at £9,368,501, and the exports at £10,501,308, with an adverse balance of £1,132,857, the idea of an established drain is found to be resting on a very substantial foundation—to be something so positive and real as to afford just reason for inquiring alarm, since, if it should go on at this rate, it may reach the basis of the paper currency in the vaults of the Bank of England, and, drawing it thence for export, may profoundly disturb the financial situation of the kingdom. The indications of a chronic outflow of the precious metals are, therefore, of so grave a character as to fully justify the reviewer in exhibiting them to the public in a strong light, and in calling the efflux a drain. That the English people so regard it is clear from the following cable despatch to the American press only a few days ago:—

London, Aug 11.—The *Times*, in its financial article this morning, says: 'We believe Italy has obtained elsewhere the amounts of bullion she requires, and the anticipated withdrawals of gold from the Bank of England on Italian account, at any rate, are postponed. It is quite possible a bullion drain to America may begin at any moment, but at present, in spite of the withdrawal of bullion from the bank on Tuesday for America, it cannot be said that any drain has set in. The bank directors will be, no doubt, prepared to raise the rate of discount quickly on the least sign of a drain to America or elsewhere, but, with the cessation of an Italian demand, for the present there appears to be no necessity for any action, at least in advance of open market."

Various dispatches of the same general tenor have been coming from England in the last few weeks, all giving evidence that there is an uneasy feeling over there, caused by the approaching necessity of obviating or preparing for an extraordinary outflow of specie in the second half of the present year—an outflow likely to be much greater in excess of the inflow than it was in the first half. If such an efflux is not a drain, what is the use of dictionaries to give definition of words?

As to England's balance of trade in the aggregate, let us tell the *Economist* what it does not seem even for an instant to have suspected—that the exports until recently have habitually exceeded the imports—that the drain of specie established in 1879, and continued ever since, is proof positive that the imports from that date have been exceeding the exports. The Board of Trade returns do not contain all the elements of the problem. One illustration will suffice. Loans to foreign countries (and these have been enormous) are exports fully as much as exports of manufactured goods. They differ, however, from the latter exports in this; that they remain away a fixed period, then are sent back, if not lost by repudiation, failure or like means; but meanwhile they yield an income in the shape of interest, which, as is generally admitted, has been for the most part paid in the form of merchandise imported into the United Kingdom. Forasmuch as the imports are valued in the ports of arrival, and the exports are valued in the ports of departure, in England's statistical *regime*, the imports in the record kept by the Board of Trade appear, relatively to the exports, much larger than they really are—in brief, the imports contain in their value the elements of ocean freight, insurance, commissions, and other items, which the exports do not. Allowance is always to be made for this radical difference in valuation. The earnings of foreign loans, of the carrying trade, of insurance, of commissions, and the like, taking the form of imports of merchandise, may swell those imports in both value and quantity far above the volume of the statistically recorded, and thus apparent, volume of the exports, yet the true and real balance of trade continue all the time in favour of England. Now, the almost unfailing test of an adverse balance of trade consists in the fact that the outflow is greater than inflow of specie. This test becomes conclusive when the efflux, year after year, is larger than the influx of gold and silver. So long as England is a creditor country, she receives more of the precious metals than she pays out. When she becomes a debtor country, she finds it impossible, as the case is now, to retain her coin and bullion, and is compelled by the necessities of her indebted condition to surrender specie at the demand of the creditor countries which will not accept merchandise in payment. The international balance of trade is now against England, and we perceive no present method by which it could be reversed except by large loads abroad, the temporary effect of which upon her financial market at home might be so disturbing as to create the gravest embarrassments.

The radical defect of the *Economist's* argument is that exports are regarded as outlay and imports as income. That is not the true relation. Imports, present purchase and exports represent sale. If a nation takes care to sell more than it buys, it will certainly grow rich by the process. But let the nation begin to buy more than it sells, then a prophet will not be needed to forecast the result. Notwithstanding that attempts have been made to impale the face of the rule commonly called the balance of trade, by stigmatizing it is a "detected fallacy," for the sake of annihilating the arithmetical certainty which it affords as a species of evidence in determining the gains and the losses of a nation in its foreign trade, it is a means of information on this subject which, on account of its importance and the alarming result to which it tends, can not be surrendered. All the uncertainty arising from the application of this rule results from failing to collect and put forward the facts which constitute the rule. It certainly would not be infallible to say that a nation which has sold the value of one hundred millions, and bought the value of one hundred and eleven millions, is therefore eleven millions minus, without considering the place where and the rule by which the values were ascertained, and to what party or parties the profits of the trade belonged. But there can be no possibility of mistake when the commercial exchanges against a nation are making perpetual drafts on its money, instead of paying its debts by exports of other commodities, and when it finds itself growing poorer and poorer in pocket, until, like an unwise spendthrift, it has parted with all its cash. The balance of trade in favour of a nation is its income, the balance against it is its loss, and will be its ruin, if continued, the same as with a private individual. The man that trades with a profit grows rich; and it is only another truism to say that he who trades with loss grows poor. The "detected fallacy" is the doctrine which questions these self evident truths, not less true in application to a nation than to a private man. Conclusive evidence that the balance of trade is adverse—that the nation is buying more than it sells—is a steady drain of specie which no efforts can arrest. Such is the evidence presented by England for several years past. The facts, the figures, and the inductions support the general position taken by the reviewer in his *Quarterly* article, and negative the position taken by the writer in the London *Economist*.

BRITISH TRADE AND FOREIGN MARKETS.

(St. James's Gazette.)

The late Mr. Bagehot made the shrewd remark that the theory of national and international society framed for themselves by the founders of the English school of political economy was closely connected with the occupations of many of them on the Stock Exchange. It is, in fact, on the Stock Exchange that all which this class of theorists assert of human nature is absolutely true. It is there that a number of men are associated together, having no object whatever in view for the time except buying in cheapest market and selling in the dearest. Among this eager population all motives are for a while in abeyance except a few; and these few act without friction to hinder their operation and without disturbance of any sort. Everything goes on as the English economist asserts that it goes on in the world outside. On the Stock Exchange profits vary exactly as the political economist supposes them to vary. If there is demand for a particular kind of security there is sure to be a supply of it, if only it be in existence. And in the mind of a philosophical stock broker, surveying the operations of the Stock Exchange, there probably germinated that famous theory of rent which has just been dragged through the mud in Ireland by politicians who, in the dulness of their wit, still believe themselves to be his disciples.

But the weak points of the Stock Exchange theory of life, and even trade, have been gradually disclosing themselves of late years. A great number of writers, a few in England but many more in other countries, have been arguing that it is not true of individuals, and still less of nations. This theory, in fact, asserts that men and communities in their commercial dealings are related to one another as are dealers on the Stock Exchange; and the system of unrestricted Free Trade is wholly founded on this assumption. But the assertion is not maintainable, except within restrictions which occasionally deprive it of all its importance. The point is well illustrated by a remark made the other day by one of our correspondents. On the Stock Exchange, if a man has anything to sell which has any value at all, he is sure to find a buyer. But this is not true of trade outside. The merchant who wants to buy can always find somebody to sell if the commodity he wants is in existence; but the manufacturer who wishes to sell cannot always find a purchaser. The secret of success in business is to be a good salesman. Great cleverness, great knowledge of human nature, great activity, and no little pushing are needed in order to command a market for your goods. The difficulty of the day is to discover markets; and these are only discovered by the manufacturer who, besides having his goods, is full of other resources. If this be true of traders within a community, much more is it true of trading communities as a whole. Those prosper who can find out markets and keep them, not those who believe there is something magical in trade which will always bring a nation to buy whatever another nation has to sell. In short, something is wanted besides no customs duties and much activity in producing commodities. That something in the affairs of nations is called statesmanship; and when a country, instead of setting its best diplomatic and political ability to the negotiation of commercial treaties, entrusts this duty to underlings, and all but openly declares that it regards the undertaking as of no particular importance, it is earning the character which among trading firms is known as the character of a bad salesman; and a trading firm deserving the name is on the high road to the insolvency court.

In the search for markets to absorb its produce, each community has to cope with a difficulty which is not only unknown on the stock exchange, but practically unknown in private trade. The Northern English manufacturer of stockings would shake with laughter if he were told that the consumers of a particular district were earnestly desirous of reviving or keeping alive the knitting of stockings for domestic use, and were preparing so to improve the domestic industry that it should be no longer necessary to resort to the shops. But this takes place among communities as a whole on the largest scale; and, what is more astonishing, with the greatest success. The preference for articles of home manufacture passes among individuals as an amiable weakness at best; but in nations, in almost all nations other than this, it reaches the height of a passion. It is this feeling, more and more cherished everywhere, which has closed against us, one by one, almost all the markets of the civilized world. When Great Britain first threw down its own barrier of customs duties, the iron ware and calico of the continent hardly deserved the good repute which homespun cloth and home knitted stockings once bore in England as compared with commodities produced by machinery. For the stockings and the cloth, if dear, were good, but French and American calico and iron were both extremely bad and excessively dear. Nevertheless, so strong was the preference for manufacturing at home that all the energies of the community were thrown into the improvement of the domestic processes, until at last the domestic manufactures of the United States and France are actually competing with our own in markets open to both. The enormous mistake we have made is in supposing that the dear and bad manufactures of whole countries would give way to goods of British origin just as the hand loom and the knitting needles have given way to the power loom and the stocking frame. We altogether failed to make allowance for the strength of the sentiment which, among nations, creates the preference for home productions. The blunder is connected with some special moral weaknesses of the founders of our Free Trade. They had almost no patriotism. They regarded it as the sham virtue of Tories, and they went out of their way on all occasions to decry and discredit it. Nevertheless, it is a form of this virtue which, by the hold it has on other nations, is reducing us to insolvency. If it had been better understood among us, British statesmanship would at all events have better seen its way, and might have saved us from many dangers which some among us regard as far more serious than national humiliation—peril of ever falling wages, and peril of ever diminishing profits.

Only one cause has partially saved British trade from the disasters that have impended over it from the successive closing of foreign markets. This is the command which we still retain of the markets of barbarians and half barbarians. As the *Quarterly Review* has pointed out, it is India which came to the rescue, taking in 1880 twenty millions of our goods instead of thirteen. It is worth while recollecting that the preservation of this great market is entirely owing to the late Government, which prevented its being shut against us by a protective duty imposed on the plea of revenue, and which was at the time violently attacked for this immeasurable service by almost all the leading members of the present Ministry. But nothing can be less safe than the barbarous markets. Who will undertake to predict that China and Japan will always remain open to British manufactures? They have statesmen just as able as ours, and just as well acquainted with human nature (as may be seen from the extraordinarily clever letter of the Chinese Grand Secretary on the subject of opium); and those statesmen are in their hearts just as anxious that the countries to which they belong should cease to be dependent on the foreigner as the foreigner is to sell his goods to them. Even the African negro is said to be taking more and more of the red cloth which his soul loves from the Americans, and when the negro fails him the case of the British manufacturer will be bad indeed.

An Imperial decree has been issued by the Czar for encouraging the colonization of Nova Zemble by Russian traders. It grants 360 roubles and freedom from taxation for ten years to each male capable of work who may settle in Nova Zemble, together with the right of returning to his native commune after a stay of five years in the colony.

A RUINED HARVEST

London, 29th.—The *Mark Lane Express* says the past week has brought general disaster and ruin to the harvest. A series of intermittent storms culminated on Thursday in a general thunderstorm with a deluging rainfall. The downpour of rain was on sheaves which had been repeatedly wetted and dried, or on standing grain, which is literally eaten up by mildew. In the flooded districts the disaster is complete. The thatched ricks everywhere suffered. The position of the harvest has materially affected trade and rates improved a shilling on Wednesday, and a further shilling on Friday. The advance which would have amounted to several shillings had Thursday's weather continued, was checked by Friday's sunshine. The advance in the Provinces was a shilling beyond that in London. Of the few samples of the new crop offering, nearly all had sprouted. Foreign wheats are two shillings and flour one shilling to one and sixpence better. The English markets are very bare of foreign flour. The supply of native grain in provincial markets is almost nothing. The port markets are therefore greatly strained, stocks on either side of the Atlantic being in strong hands. The supply here cannot exceed the demand until growers in America forward their new crop in sufficient bulk to overpower Atlantic speculators.

Dublin, 29th.—The destruction of crops by rain in various parts of Ireland is very great.

QUEBEC PROVINCIAL EXHIBITION.

A circular issued by the authorities of the Quebec Provincial Exhibition, which will open at Montreal on the 14th of September, says:—

The Permanent Exhibition Committee of the Province of Quebec have much pleasure in announcing to the manufacturers of agricultural implements and machinery that owing to the liberality and public spirit manifested by the City Council of Montreal and the Park Commissioners in permitting the use of a large portion of Mount Royal Park for exhibition purposes, they are enabled this year to provide suitable permanent buildings for the display of agricultural implements and machinery in motion. The additional space on the park at the disposal of the committee will be from fifteen to eighteen acres, and will be connected with the Provincial Grounds by a substantial bridge spanning Mount Royal avenue. The Agricultural Implement Hall will consist of four special buildings, with extensive connecting corridors (which are now being constructed at a cost of over $25,000), two of which are to be set apart exclusively for such machinery as may require to be exhibited in motion. Four lines of shafting will be provided in these two buildings underneath the flooring. The shafting will be 2¾ inches, exact diameter, and the speed 80 revolutions per minute. The other two buildings, with the connecting corridors, will be devoted to implements and machines not required to be shown in motion. In addition to the above ample outside space will be provided for such exhibitors as may prefer to show their implements in the open air. If desired to be shown in motion, these can also be connected with the motive power provided by the committee. As no charge is made for space in this department (the entry fee being only one dollar), manufacturers of agricultural machinery will readily see the very great advantages of exhibiting under such favourable circumstances, and the committee confidently expect to see at the approaching exhibition the best collection of agricultural implements that has ever been shown in the Dominion. Entries must be made on or before the 1st of September.

HON. WILLIAM MACDOUGALL IN MANITOBA.

At a banquet given in honour of representatives of the Northern Pacific Railway at Winnipeg on Tuesday evening last the Hon. William McDougall, C.B., M.P. for this city, responded to the "Houses of Commons." In the course of his speech Mr. McDougall said:—"There was only one regret which he felt as the result of his visit. He had met many energetic, enterprising men here, but they were not farmers. They were looking after cities that are to be, and corner lots. This speculation was perhaps proper enough: they had diggers and delvers in every part of the country, and every homestead filled to give these railway gentlemen traffic for their road. But if he had seen more farmers, he would have been much better pleased. This was, however, the experience often met in new countries, and Manitoba was undergoing a stage through which all must pass; but there was this to say about it: it evidenced the belief and confidence of these speculators in the country by their investing capital here before the country was developed. Allusion was then made to our lands, and he stated that the matter appeared to him to rest with the two Governments, and his worthy, if not venerable friend, Mr. Norquay, had told him that we ought to grant our public lands within the Province, when, doubtless, he would put up the price to a good figure, and find a revenue from them. For himself he was prepared to vote that all lands not otherwise granted already, should be given free to the Government of Manitoba to administer. As it was, he had ascertained that the Dominion Government had not received as much for the lands as their survey and administration cost. If Mr. Norquay would undertake their administration, he for one would hold up both hands to give them to Manitoba. He would not detain them longer, and after again expressing his pleasure at being present, resumed his seat amid loud applause.

TORONTO PRICES CURRENT.

GROCERIES

SUGARS.			
per lb	80	@	
		@	
		@	
native		@	
plantation		@	
TEAS.			
Young Hyson, scaled		@	
Gunpowder, per lb		@	
SPICES.			
Cassia, whole, per lb.		@	
Cloves		@	
Ginger, ground		@	
Jamaica, root		@	
Nutmegs		@	
Pepper, black		@	
white		@	
SUGARS.			
Patna Rice, per lb		@	
Canadian Refined, low to extra bright		@	
Powdered Granulated		@	
Redpath's Cut Loaf		@	
TEAS.			
Japan, common to good		@	
fine to choicest		@	
Oolong, common to fine		@	
Caper and Souchong		@	
Congou, good to fine		@	
Young Hyson, common to good		@	
Medium to choice		@	
Extra choice		@	
Gunpowder, common to medium		@	
Superfine to finest		@	
Moyune		@	
Imperial		@	
TOBACCO, MANUFACTURED.			
Bright		@	
Dark Western Leaf, good to fine		@	
Bright sorts, good to fine		@	
choice		@	
Plug		@	

HARDWARE.

TIN.			
Pig, per lb. (four months)		@	
Bar		@	
COPPER.			
Ingot		@	
Sheet		@	
Yellow Sheet		@	
CUT NAILS.			
10 to 60 dy. per keg of 100 lbs.,			
net cut American pattern		@	
8 dy. and 9 dy.		@	
6 dy. and 7 dy.		@	
4 dy. and 5 dy.		@	
3 dy.		@	
4 to 5 dy. cold cut Canada pointed		@	
6 dy. cold cut Canada pointed		@	
HORSE NAILS.			
(Discount, 40 to 45 per cent.)			
Patent Hammered		@	
GALVANIZED IRON.			
Best No. 22		@	
Best No. 24		@	
Best No. 26		@	
Best No. 28		@	
IRON.			
Pig—Carnbroe		@	
Summeries		@	
Eglinton No. 1		@	
Nova Scotia		@	
Nova Scotia bar		@	
Bar, per 100 lbs		@	
Hoops—Coopers'		@	
Band		@	
Boiler Plates		@	
Canada Plate—Hatton		@	
" Pen		@	
" Swansea		@	
" Blaina		@	
" Boars Head		@	
LEAD.			
Pig, per 100 lbs. (at four months)		@	
Bar		@	
Sheet		@	
Shot		@	
RABBIT METAL.			
No. 1			
No. 2			
No. 3			
AXES.			
Lumberman's Pride	$ 2 75	@	10 00
Peerless	8 25	@	9 00
Sea Cutter	8 25	@	10 00
CORDAGE.			
Manilla 1 and larger	0 13	@	0 13½
inch	0 13	@	0 13½
IRON WIRE.			
No. 6, per bundle four months	1 80	@	1 90
No. 8 "	2 10	@	2 20
No. 12 "	2 40	@	2 60
POWDER.			
Blasting Can	3 50	@	3 75
FF sporting	4 80	@	5 10
Blasting, Enghish	3 50	@	3 75
FF sporting, loose	4 80	@	5 10
WINDOW GLASS.			
7 and under	1 65	@	1 70
7 x 80 "	1 85	@	1 85
41 x 50 "	2 05	@	2 10
71 x 60 "	2 25	@	2 30
STEEL.			
Cast Steel	0 13	@	14
Betremer Steel	0 6	@	6½
TIN PLATE.			
IC Coke (four months)	4 75	@	5 00
IC Charcoal	5 75	@	6 00
IX "	7 25	@	8 00
IXX "	9 25	@	10 00
DC "	4 75	@	5 00

DRUGS.

Aloes, Cape		@	
Alum		@	
Borax		@	
Camphor		@	
Castor Oil		@	
Caustic Soda		@	
Cream Tartar		@	
Epsom Salts		@	
Extract Logwood, bulk		@	
" boxes		@	
Indigo, Madras		@	
Madder		@	
Opium		@	
Oxalic Acid		@	
Potass Iodide		@	
Quinine		@	
Soda Ash		@	
Soda Bicarb, per keg		@	
Tartaric Acid		@	
Morphine		@	
Ipecacuana		@	

PETROLEUM.

Refined—Delivered in Toronto:

No. 1 car load, per Imperial gallon		@	
5 to 10 barrels		@	
single barrels		@	

OILS

Cod Oil, Imperial gallon		@	
Straits Oil		@	
Lard, extra		@	
No. 1		@	
Linseed, raw		@	
boiled		@	
Olive		@	
Salad		@	
quart, per case		@	
Seal		@	
Whale, refined		@	
Spirits Turpentine		@	

PAINTS ETC

White Lead, genuine, in oil, per 25 lbs		@	
No. 1		@	
No. 2		@	
No. 3		@	
Dry		@	
Red Lead		@	
Venetian Red, English		@	
Yellow Ochre, French		@	
Whiting		@	

WOOL

Fleece, per lb		@	
Super		@	
Extra		@	

HIDES AND SKINS.

Steers, 60 to 90 lbs, per lb		@	
Cows		@	
Cured and inspected		@	
Calfskins, green		@	
cured		@	
Lambs'		@	
Shearlings		@	
Tallow, rendered		@	
rough		@	

LEATHER

Spanish Sole, 1st quality, all weights, per lb., (4 months)		@	
Spanish Sole, No. 2		@	
Slaughter, medium		@	
light		@	
Buffalo		@	
Harness		@	
Upper, No. 1, heavy		@	
light and medium		@	
Kip Skins, French		@	
English		@	
Domestic		@	
Veals		@	
Hemlock Calf (25 to 30 lbs.) to doz., per lb		@	
30 to 40 lbs		@	
French Calf		@	
Splits, large, per lb		@	
small		@	
Enamelled Cow, per foot		@	
Patent		@	
Pebble Grain		@	
Buff		@	
Russette, light		@	
Dongola		@	
Kangaroo		@	
Degras		@	

PRODUCE.

FLOUR.			
Superior Extra, per bbl, f.o.c.	5 70	@	5 75
Extra	5 60	@	5 65
Fancy	5 00	@	5 00
Strong Bakers	5 00	@	5 70
Spring wheat, extra	5 00	@	5 00
Superfine	3 90	@	3 90
Oatmeal	4 20	@	4 30
Cornmeal, small lots	3 30	@	3 40
GRAIN.			
Fall Wheat, No. 1, f.o.c	1 26	@	1 27
No. 2	1 24	@	1 25
No. 3	1 17	@	1 19
Spring Wheat, No. 1	1 25	@	1 26
No. 2	1 22	@	1 23
No. 3	1 17	@	1 18
Oats		@	
Barley, No. 1		@	
No. 2		@	
No. 3 Extra		@	
No. 3		@	
Peas		@	
Rye, new		@	
Corn		@	

PROVISIONS.

Butter, choice dairy		@	
Butter, shipping, per lb		@	
Butter, crocks, city trade		@	
pound rolls		@	
Cheese		@	
Dried Apples		@	
Pork, mess	22 00	@	24 00
Bacon, long clear		@	
Cumberland cut		@	
Breakfast Smoked		@	
Hams smoked		@	
canvassed		@	
Lard		@	
Kegs		@	
Hops, new		@	

SALT, ETC.

Liverpool, coarse, per bag		@	
Canadian, per barrel		@	
Stoved	1 80	@	1 90

BOOTS AND SHOES.

Men's Calf Boots		@	
Kip Boots		@	
Split Stogas		@	
No. 1 "		@	
Men's Congress and Balmorals		@	
Boys' Kip Boots		@	
No. 1 Stogas		@	
Split "		@	
Gaiters and Balmorals		@	
Womens' Balmorals and Gaiters, pegged		@	
Womens' Balmorals and Gaiters M.S		@	
Womens' Batts		@	
Great Balmorals		@	
Misses' Balmorals		@	
Batts		@	
Childs' Balmorals		@	
Batts		@	
Turned Cask, per doz.		@	

LIQUORS

Prices to Country or City Dealers.

IMPERIAL MEASURE.

Rye and malt		@	
Brandy		@	
Wine, Port		@	
Sherry		@	
Native		@	
Rum, 40 o.p		@	
Jamaica		@	
Old Tom, cases		@	
Bitters, J. Bull, per case		@	
Ginger Wine, No. 1		@	
No. 2		@	
Raspberry Syrup		@	
Holland Gin, red		@	
green		@	
Irish Whiskey, in wood		@	
Scotch		@	
Brandy, qts		@	
pts		@	
½ pts		@	
¼ pts		@	
Claret		@	
Guiness Porter, qts		@	
pts		@	
Champagne, qts		@	
pts		@	
Holland Gin		@	

WEEKLY REVIEW.

TORONTO, Aug. 31st, 1881

The weather has been intensely hot during the past week, and the prospect of a much needed rain seems apparently as far off as ever. The country all about here is reported as suffering very much for want of rain. The success of the Industrial Exhibition is now fully assured, and the prospect is that it will prove the most successful exhibition that has ever been held in Canada. Merchants anticipate a very large business during its progress, as buyers will no doubt avail themselves of the very favourable rates offered by the various railway lines. It is expected that not less than 150,000 people will visit the exhibition. There has been considerable activity among millinery and fancy goods houses, who are showing an immense variety of goods. There can no longer be any doubt but that the bulk of these trades for Ontario is through Toronto houses. The buyers have taken advantage of their visit to the city to make inquiry for dry goods, but dry goods houses do not anticipate any great rush until the exhibition has been fairly opened.

Stocks.—The stock market has been very quiet during the past week; very probably the intense heat has had something to do with it. Bank stocks show scarcely any change from last week's quotations, prices, if anything, have not been maintained. Commerce shows a decline of ¼, Dominion ¼, Federal ½, and Toronto 1. Montreal and Mechants' are each offered ½ lower, while Ontario is held 1 higher. The remainder of the list is unchanged. Loan and Savings Companies.—These stocks are generally firm, but the market is very quiet. Building and Loan has advanced ½ in bid, Freehold, ½; Manitoba, ½, National Investment, ½, Ontario Savings, 1, and Western Canada, 1. Dominion Savings is held 2½ higher. On the other hand London & Canadian has declined 2 in bid, and Ontario Debenture, ½. London Loan has advanced 2 in bid. Insurance, etc.—Dominion Telegraph has advanced 2½ in bid and Montreal 1, or last week's quotations.

Groceries.—There is no change worthy of note since last week, except in tobaccos, which have advanced in sympathy with leaf as much as 7c on some grades. The demand for teas continues good, and prices remain firm. Sugars are dull, with prices decidedly in favour of buyers.

Hardware.—The fall season is opening up well, and orders are coming in quite up to expectations. The firmness in the English markets is giving the merchants here more back bone, hence there is not so much slaughtering being done as there was last spring. Bar iron has advanced 5c per 100 lbs this week. It is quoted at from $1 95 to $2. Tin still remains firm at quotations.

Dry Goods.—Business is not active, but the prospects of a good fall trade are good. Prices are generally firm and advancing, the exceptions being quinine, opium and morphine, which are lower. The following are higher. Castor oil, oil lemon, oil wintergreen, oil sassafras, oil peppermint, gamboge, canary seed, cubebs and alcohol. The rise in the last article carries with it all tinctures, spirits, essences and other preparations in which alcohol is used.

Oils, Paints, etc.—The week has been marked by a sharp rise in spirits of turpentine, based on an active demand for all lots as soon as marketed. Lard oil is scarce and dearer. Linseed oil has also advanced. Leads and colours are without change.

Wool.—The combing wool trade seems a little firmer, and a few transactions have taken place during the past week at above quotations. Still holders are disinclined to sell except at extreme figures, and dealers are indifferent, expecting a lower range of prices before long. The demand for home consumption is improving and there is a good demand for super and extra wools. Quotations remain unchanged.

Hides and Skins.—For hides there is a very active demand, the supply being barely sufficient to meet it. Sheepskins have advanced to 85c., and all offering are readily taken at that figure. For calfskins the season is about over and there are but few coming in. Tallow is firm at quotations and is in good demand.

Leather.—Business for the present week has been quiet generally, but a larger business is likely to be done during the progress of the exhibition. Prime tannages of Spanish sole suitable for country work are scarce, as is also Canadian calf of every description. Tanners' material has sold freely and cod oil has risen 2c and is firm at the advance.

Produce.—The market is very quiet, with but few transactions. Flour is in demand, but there is none offering. Wheat is quiet and steady, 5,000 bushels of No. 2 fall wheat was offered on 'Change at $1 25 without bids. On the street, fall wheat is quoted at from $1 30 to $1 32, spring, $1 30 to $1 33; barley, 75c to 85c, peas, 75c to 80c, oats, 42c to 44c, and rye, 93c. Stocks in store here, in warehouses and elevators, on the 29th inst., were as follows:—flour, 700 bbls, fall wheat, 17,152 bushels; spring wheat, 18,691 bushels; oats, 1,490 bushels; barley, 18,353 bushels; peas, 651 bushels, the total bushels of grain in store being 36,357, as compared with 83,030 bushels on the 22nd inst.

Provisions.—The supply of meats is very low, and prices are very firm, without change in quotations. Buyers of butter for export are holding off on account of the present high prices. The effects of glass greatly affects the market.

TRADE WITH BRAZIL.

To the Editor of the *Western Herald*

Sir,—The following, from the official returns received to-day, may be of interest to your readers:—

EXPORTS OF SUGAR FROM THE PORT OF BAHIA, BRAZIL, FOR THE MONTH OF JUNE, 1881

Canada	7,021 bags.
Channel for orders	15,081 "
Liverpool	9,951 "
New York	7,001 "
Lisbon	411 "
Total	61,250 bags.

For the months of May and June the exports of sugar from Bahia were 192,635 bags, viz.—

Canada	68,721 bags.
United States	45,000 "
Channel for orders	57,013 "
Liverpool	11,951 "
Lisbon	411 "
Bremen	150 "
Total	192,535 bags.

It will be seen that at the Port of Bahia, of which sugar is the chief export Canada has been Brazil's best customer during these two months.

I am, sir,
Your obdt servant,
W. DARLEY BENTLEY,
Consul-General.

Montreal, August 27, 1881.

HOW TO TELL GOOD BUTTER.

The legislature of Ohio recently passed a bill providing for the inspection of butter and cheese, "and all substances having the resemblance of butter and cheese," and of dairies and other places where milk is sold or butter or cheese manufactured, to be done by inspectors appointed by the State Board of Health. The superintendent of inspectors of butter and cheese, Mr. Robert Orr, has issued a circular of instructions to his subordinates, giving information which may be of value to butter makers and buyers generally. He says:—

"When butter is properly churned, both as to time and temperature, it becomes firm with very little working, and is tenacious, but its most desirable state is that of waxy, when it is easily moulded into any shape, and may be drawn out a considerable length without breaking. It is then styled gilt-edged. It is only in this state that butter possesses the rich nutty flavour and smell, and shows up a rich golden yellow colour which imparts so high a degree of pleasure in eating it, and which increases its value manifold.

"It is not always necessary when it smells sweet to taste butter in judging it. The smooth unctious feel in rubbing a little between the finger and thumb expresses at once its rich quality, the nutty smell and rich aroma indicate a similar taste, and the bright golden glistening cream-colored surface shows its high state of cleanliness. It may be necessary at times to use the trier, or even use it until you become an expert in tasting by taste smell and rubbing."

Small coaches for four persons have been put into the streets of Boston by a new company. The fair to any point within the city limits is 25 cents per passenger. The same scheme recently failed in Philadelphia.

The vintage in France last year is estimated by the British Vice-Consul at La Rochelle at 853,000,000 gallons, which, though more than one-sixth in excess of that of the previous year, was not much more than one-half the average of the last ten years. It is reckoned that the vineyards in which the vines have been totally destroyed by the phylloxera amount to more than one and a quarter million acres, and that more than an equal extent is infested, though resisting the attack.

The report of the Government cinchona plantations in Southern India indicates the astonishing progress made since slips of this valuable tree were first planted in that district twenty years ago. The number of trees now planted out is more than four and a half millions. At present the greater part of the bark produced appears to be consumed in supplying the medical depots at Calcutta, Bombay and Madras; but upward of 3,000 pounds was last year sold to the public, and the annual yield is rapidly increasing with the growth of the trees. The actual profit last year on the capital of the plantation is stated to have been eight per cent.

Early in August, in a village of Epirus, a most artful stratagem was played on the Turkish troops. Capt. Davell, a famous brigand chief, who is in command of 120 men, sent twenty of his comrades into a village, and caused notice to be given to an Ustashi of their whereabouts. Immediately 200 Albanians and Turks surrounded the village, and a parley commenced between the Ustashi and the brigand in command of the other twenty. He offered the Ustashi one hundred pounds to let him pass freely, but the Ustashi stuck out for two hundred. While the negotiations were being carried on, Davell and his hundred men suddenly descended on the Turks, and the result was that out of the 200, thirty were taken prisoners and seven escaped wounded; the rest were all killed, while the brigands marched off in triumph.

All accounts agree that the season at Saratoga is unprecedented in brilliancy. The hotels have been full, as a rule, and the festivities on a grander scale than ever before. Money has been spent freely, but with rather less ostentatious display than formerly. Of the cost of the largest three hotels a correspondent says:—"I am not far wrong when I put down the entire cost of the Grand Union Hotel at something less than $1,000,000, probably $800,000 would cover the whole investment. Yet this is a prodigious sum of money to be planted in a small village with a normal population of not more than 8,000. The United States Hotel cost $1,100,000, built with extravagant prices; but it was re-purchased at a forced sale for $450,000. Congress Hall cost over $500,000, and at a bankrupt sale it was bought in for $125,000." These figures are far below the popular estimates, but are probably about correct.

RAILWAY MATTERS.

EMERSON AND DULUTH RAILWAY.

A few years ago a number of enterprising citizens of Duluth well acquainted with this country and its resources saw that it would not be many years before Manitoba and Northern Minnesota and Dakota would require a shorter and cheaper outlet than was provided by the then existing railway system so they applied to the Minnesota Legislature for a charter for a railway from Duluth to some point on the international boundary line between the Lake of the Woods and Red River, secured a swamp land grant of ten sections per mile, organized their company, and named their road the Duluth and Winnipeg Railway That was before Emerson was known, and before the system of railways as now planned for Manitoba existed Now things have changed, and to-day the Duluth and Winnipeg Railway people are more anxious to secure connection with Emerson than with Winnipeg The commanding position of Emerson is beginning to dawn upon the minds of eastern capitalists, and the shrewd men who are managing the Duluth and Winnipeg Railway see that by building to Emerson and obtaining connection with the Emerson and North-Western Railway and its branches, they can command the trade of nearly all of Manitoba and the North-West, and by throwing out lateral lines through Northern Dakota can also take the trade of that section. Anyone can see this at once by a glance at the map. From Emerson to Duluth via the Duluth and Winnipeg, it is 275 miles, and from Duluth along the south shore of Lake Superior and across the Sault Ste. Marie river to Montreal it is almost an air line. From Emerson to Fort William, on Lake Superior, via the Canadian Pacific, it is 500 miles, and from Fort William to Montreal around the north shore of Lake Superior the distance is 400 miles greater than from Duluth to Montreal along the south shore. From Emerson to Duluth via the St. Paul, Minneapolis and Manitoba road and Northern Pacific, it is 400 miles. The Duluth and Winnipeg Company, in connection with the Emerson and North-Western, have got the best railway system that can possibly be provided for this country, and they know it, and propose to utilize their bonanza at once Mr. Billholmer, general manager of the Duluth and Winnipeg, arrived in Emerson on Tuesday, and had a long conference with the board of directors of the Emerson and North-Western. We are not at liberty to disclose all that was said and done, but we are at liberty to state, on the authority of Mr. Billholmer, that the Duluth and Winnipeg Railway will be completed to Emerson by November, 1882 Two surveying parties are now in the field locating the line through the heavy timber east of Duluth, and a third party will before long be put in the field at this end of the line *It is expected that the survey* will be completed before snow flies, when the contracts will at once be let, so as to give the contractors plenty of time to prepare to push work in the spring, when the road will be pushed just as fast as men and money can do it. —*Emerson International.*

ANTICIPATION OF THE RAILWAY RETURNS FOR 1880

The issue of the "Railway Returns" is very tardy again this year It is difficult to assign any adequate reason for a delay in their publication which allows all the January meetings of the companies to be held before this means of comparison is put into the hands of the shareholders. But that the July and August meetings should be held before the general account of the railway movement of the previous year is published is inexcusable. And this complaint will be seen to be more just when we point out that the main results of the railway return of the past year have actually some time since been published by the Board of Trade It is certain that the department has not only received, but tabulated, the details withheld from the public; for some of them have already made their appearance in a Blue Book issued by the Statistical Department of the Board of Trade We are not aware at this moment of the exact day on which the "Statistical Abstract for the United Kingdom from 1866 to 1880" was first accessible; but we have been consulting it for a fortnight past. In that book will be found the following particulars of the railway movement of the year 1880: The total length of railway in the United Kingdom open at the end of 1880 was 17,945 miles, being an increase of 249 miles within the year. The total capital paid up, including shares and loans, to the end of the year, was £728,621,687, being an addition of £11,618,188 during the year to the former aggregate. The total number of passengers conveyed, exclusive of season ticket holders, was 603,884,752, against 602,732,890 in 1879; the average number being 33,652 per mile in 1880, against 31,800 per mile in 1879, and 19,799 per mile in 1866. The total of traffic receipts was £61,958,754, showing a considerable advance on the £59,393,282 of 1879, and in fact being at the rate of £3,453 per mile, instead of £3,350 in 1879, and £2,754 in 1866. The working expenses were £33,502,909—nearly a million and a half increase during the year. The net profits were £30,985,694, against £29,731,490 in 1879. Thus far the Blue Book. A little analysis allows us to find that the mean cost per mile over the whole system has risen from £2,000 in 1879 to £2,060 in 1880 The working expenses have risen from 53 per cent of the gross income in 1879 to 54 per cent in 1880 The proportion of net receipts to paid up capital is 4·25 per cent It will be observed that while the increase of gross traffic has been at the rate of 4 per cent for the year the increase of working expenses has been at the rate of 6 per cent on the revenue—from 52 to 54 This movement, recommenced in 1880, after a movement in the opposite direction since 1874, appears, from the reports of the half yearly meetings just held, to be advancing with unabated rapidity in 1881 The returns do not give the particulars of passengers, goods and mineral traffic, which may possibly throw some light on the large advance in the rates of working expenditure In 1866—the earliest date to which complete tables go back—the proportion of working expenditure was 47 per cent of gross revenue, instead of 54 per cent as in 1880.—*St James's Gazette*

Q M O & O RAILWAY.

The traffic receipts of the Quebec, Montreal, Ottawa and Occidental Railway for the four weeks of July were —

	1880.	1881
July 8	$15,601 28	$20,122 87
July 15	12,231 00	19,650 31
July 23	13,783 41	21,937 68
July 31	14,100 84	22,035 81
Total	$56,111 03	$83,622 45

The nature of the traffic for the month was as follows :—

	Passengers.	Freight.	Mails.	Total
1881	$15,679 16	$80,043 32	$2,900	$83,622
1880	34,715 19	19,278 17	2,117	56,111

—*Montreal Star.*

A number of the engines now in use on section 15 will probably be handed over to the C P R Company shortly

It is said that an English company has offered David Moore, of Ottawa, $500,000 for his timber limits, situated on the line of the C P R.

The offices of the Manitoba and South-Western Colonization Railway have been located in Winnipeg adjoining Dr Schultze's office

Crop averages of from 20 to 25 bushels to the acre have been reported along the line of the St. Paul, Minneapolis and Manitoba Railway

W R. Baker, Assistant General Superintendent of the C P. R., expects to come to Ottawa shortly to bring his family up to Winnipeg.

The South-Western Railway Company's town site will be the first regular station on the line west of Winnipeg, and will be called Niagara

At the annual meeting of the stockholders of the St Paul, Minneapolis and Manitoba Railway, held on the 15th inst, the old board of directors were re-elected and the officers of last year were re-chosen

Mr Vaughan, D L S., is now laying out the C. P R. Company's town site at Smuggler's Point, where the southern extention of the road will connect with the Grand Forks extension of the St P., M. & M Ry

On Thursday the Northern Pacific started out a large force of men to commence laying iron on the Casselton branch of the C. P. R., and this extension will be ready for trains nearly to the international boundary by December 1st next.

The Chicago & North-Western has just paid its semi-annual license tax for Wisconsin business only into the treasury of that state It amounted to $83,399, which is a very considerable contribution by one corporation toward the expense of the state government.

According to an exchange, "locomotives are coming into Milwaukee covered an inch deep with crushed grasshoppers," which have killed themselves by flying against the engines. This is a good deal of a story Perhaps the author would take off half an inch of grasshoppers if he were pressed.

Managing Director Pew says the steel rails for the first fifty miles of the South-Western will probably arrive at Winnipeg by September 1st, and that track laying will be pushed from Winnipeg south-westerly as soon as they arrive, so as to have the fifty miles ready for traffic by November 1st.

The St. Paul, Minneapolis and Manitoba Company have completed their grade from the Grand Forks to the International boundary line. This extension completes the line running from Fargo north The new road runs north-west and north from Grand Forks and parallel with the Red River, keeping about twelve miles west of the river.

The traffic returns of the Great Western Railway of Canada for the week ending 19th August 1881, are as follows :—

Passengers	$42,765
Freight and live stock	41,244
Mails and sundries	3,134
Total	$ 80,133
Corresponding week last year.	104,236
Decrease	$24,103

A meeting of the provisional directors of the Winnipeg and South-Western Railway was held in Winnipeg yesterday, when stock books were opened. The company was incorporated last session by the Manitoba Legislature, with a capital of $250,000, and power to build from a point at or near Winnipeg southeasterly to a point on the International boundary

It is reported that the three great telegraph companies, the Mutual Union, American Rapid and Postal Telegraph will be consolidated into the Postal Telegraph Company, and that an extensive system of lines will be rapidly completed and speedily put in operation While existing railway lines are being extended all over the country, it would be strange if there were no competition in telegraphs

The Chattanooga *Times* notes that a road engine owned by Mr E L McWeter started out on the Cobb North Georgia dirt road drawing a wagon containing water and a cotton gin and saw mill It left at 10 a.m., and the engineer expected to arrive at 7 p.m. at his destination, a distance of 25 miles stopping at Rossville and all intermediate stations This fertile speed recalls the performances of locomotives on early railways

It is said that Arnprior is to get the workshops of the Eastern Division of the Canada Pacific Railway, Mr. Harvey having offered twenty acres of land free, and the works to be exempt from taxation for twenty years As the construction of a direct line between Arnprior and Bell's Corners is only a question of time, Arnprior will some day be a junction between the East and West and North and South lines Carleton Place is also moving in the matter, and will offer twenty acres of land

At a meeting of the railway mail superintendents held at Washington, D C, August 10, the subject of heating postal cars so as to prevent accidents by fire was referred to a special committee, with instructions to examine the various devices submitted, and confer with prominent railway officials as to the best method for adoption. The committee will report at an early day to the general superintendent of the railway mail service, who will submit the recommendations to the department for approval

The vast number of changes that have already taken place among railway companies, resulting from bankruptcy and re-organization, and from purchase and lease, is indicated by the fact that the last issue of Poor's Manual gives a list of 1,004 former names of railway companies whose titles have been changed or whose lines have been acquired by others. In far the greater number of these cases, as the formidable list of foreclosures which we have published annually indicates, these changes of names mean that the original stockholders have been wholly or in part wiped out, the re-organizations for the most part having been made by the bondholders, who were compelled to put in good money to save bad, and who generally have had too much to do in taking care of themselves to look out for the original stockholders The number of the existing railway companies in the country is indicated by the list in the manual of about 1,130 *present titles as* we make them out Very many of the roads thus named, however, have been merged in others, and the companies have practically passed out of existence so far as the operation of their roads is concerned. But an approximate idea of the number of separately managed railway lines and systems in the country can be obtained from the Official Guide, the last number of which we find gives the time tables of 782 different roads, after deducting the duplications, some roads appearing a second time under a different line name —*Railway Age*

On Friday, 19th August, a large party, including Sir Alex Galt, Hon Wm Macdougall, Col Dennis and Mr John Lowe accepted the invitation of General Superintendent Stickney to take a run to the end of the Canadian Pacific track, from Winnipeg west Most of the grading was noticed to be completed. The track is already laid from the Portage to High Bluff, and trains are expected to run over the whole distance by the middle of October, when the present line west of Stonewall will be taken up and the line between Winnipeg and Stonewall operated as a branch. The rapid progress which has been made on the work proved a surprise even to those who know it was being pushed vigorously, but had no idea of the extraordinary rush with which it is carried on. From Portage La Prairie west to two miles beyond Pine Creek, forty-seven and a half miles in all, track has been laid and lined, the road bed perfected, cattle guards and crossings put in, in fact everything completed except ballasting To Brandon only twenty-nine and a half miles remain, which has been graded and is now ready for the ties. Track laying is progressing at the rate of a mile and a half per day, and by September 15th trains will run into Brandon, if the bridge over the Assiniboine is completed concurrently with the track laying, but anyway October 1st will be the latest date. The station at Squirrel Creek is nearly completed, others are to be erected this season at Rat Creek, Image Creek, on the Sand Hills, near Bab's; about four miles west of Pine Creek, on the Beautiful Plains and at Brandon At Image Creek a water tank was completed in advance of the road; at Bab's one is nearly completed, at Brandon one is started, and another is to be erected on Beautiful Plains. Brackett, Gaylord & Co. have had the contract of all the grading west of Rat Creek, D. & D. W. Grant doing the tracklaying.

In 1880 the Gould interest agreed to make no new moves in Nebraska and to cease annoying the Chicago, Burlington & Quincy in Iowa and the latter agreed in return to discontinue its extension to Denver The Burlington now charges that this agreement was violated by the Wabash bill Pine to Des Moines and by the proposed extension of the Missouri Pacific up the west bank of the Missouri The Burlington formally notified the Missouri Pacific and the Wabash that the agreement is now at an end in consequence of the two violations mentioned, and that it will act independently—which is taken to mean the extension of the Burlington & Missouri River Railway to Denver The Missouri Pacific in turn announces a determination to parallel the Burlington from Quincy to Chicago The Atchison, Topeka & Santa Fe also objects to the proposed Denver extension and has entered a written protest against its construction The matter is further complicated by disagreements among the Pacific roads A preliminary agreement has been signed, it is said, between the Texas & Pacific, Atlantic & Pacific, Union Pacific, and Atchison, Topeka & Santa Fe roads, in combination against the Southern and Central Pacific roads. Our readers are aware that the Texas & Pacific has a suit pending against the Southern Pacific which involves the right of way over which the latter road is built from Yuma to El Paso. If the former fails to get the latter's road bed, or fails to effect compromise, it will use the Atchison, Topeka & Santa Fe track from El Paso to Albuquerque, and the track of the Atlantic & Pacific from Albuquerque to a point 800 miles from San Francisco known as The Needles, and thence to San Francisco, built jointly with the Atlantic & Pacific. To meet such action the Pacific roads could easily, and propose to, in fact, get east by the Denver & Rio Grande system, which is extending rapidly westward. The Burlington would have a hand in the scheme and could recompense itself for being cut off from the Santa Fe and Union Pacific roads, through the Rio Grande, which company is to join in extending the Burlington line to Denver The Burlington is, in addition, interested in another road building west from Denver, which will join with the Rio Grande extension to reach the Central Pacific at Ogden. Thus the Pacific roads could get east by the Rio Grande and Burlington roads, but they have also another plan in view. They have now an engineering party in the field surveying a line from Corinne through the South Pass, down the Sweetwater and the North Fork of the Platte, thence down the Platte and thence to Yankton, D T, via the Niobrara River, where connection with the eastern systems may be made The Union Pacific has also its scheme with reference to those differences. It proposes to extend its Utah Southern Railway from Frisco, Utah, westerly to Silver Peak, thence across the range to San Francisco, via the Yosemite Valley It also proposes another plan for the Texas & Pacific, viz that the latter will connect with its extension *at Silver Peak and join with it in building* thence to San Francisco. These complications and plans for extrication therefore have come to the surface during the past week, and give promise of lively times to come The situation is peculiar in the varied phases which it presents, and if actual hostilities are declared the Eastern war will be completely dwarfed in exciting interest —*Railway Age.*

THE "FAIR TRADE" MOVEMENT IN ENGLAND

The agitation in England against Free Trade may be said to be now formally inaugurated by the organization of the "Fair Trade League," which starts under very respectable auspices. Subscriptions to a fund for the uses of the organization —some of them as high as $10,000—are rapidly coming in, and preparations are being made for vigorous work. Commenting on the formation of the League the London *Daily Telegraph* says —

"The total value of British produce exported was in 1842, the last year of the old unreformed tariff, a little over £50,000,000, it rose in 1859 to £130,000,000, and in 1872, after twelve years of the French Treaty, it was over £250,000,000. From that time it declined. Foreign nations, and even our own colonies, began to fight us with protective and in some cases prohibitive tariffs, and the exports of British produce fell in 1879 to £191,000,000, and the decrease has since continued. These are not consolatory facts. If there were any signs that this condition of things was but temporary, English artisans would bear patiently the transient sufferings incident to all trade. As far, however, as impartial scrutiny can extend, there are no indications of foreign conversion to Free Trade. • • • Nor can it be said that Protection, so widely and so thoroughly worshipped abroad, has brought on foreign countries that "ruin" which the ancient Free Traders so confidently predicted as its inevitable result. The commerce of the United States has increased 68 per cent during the last ten years, that of France in the same period has increased 31 per cent., that of Germany 39 per cent, while that of England has grown only 21 per cent."

The desired deductions from these facts are easily made, and cannot fail to have great effect upon the matter-of-fact minds of the English commercial classes. The *Industrial World* (Toronto), in alluding to the new organisation says:—

"The fact that circumstances have arisen to warrant the calling into existence of the Fair Trade League proves to what extent the hopes entertained by the promoters of Free Trade in England have not been realized. Instead of the civilized community in the world Free Traders to-day find, to quote a phrase put, we find now, as four times ten years have rolled by since the inauguration of the Free Trade policy in England that nearly every civilized community in the world has assumed an attitude of opposition to it and has adopted a policy which claimed to be best in its own interests. Upon this point at least the advocates of Free Trade will not dispute their predictions, and while other nations were ready enough to avail themselves of the advantages of Free Trade on the part of England they adopted that commercial policy which seemed to best subserve their interests or meet their views. —*New York Daily Inbuner*

THE EVOLUTION THEORY IN MECHANICS

One of the best illustrations of the principle of evolution, or the development theory, as applied to inventions, is established by the pianoforte In Mr Taylor's paper on "The Arts of Pleasure" he traces many of the musical instruments of to-day back to rude primitive forms. The rattle and the drum were known among savages at a very early period the rattle has come down to a children's toy with us, except where it is in use by policemen, but the drum holds its own in peace and war, although it has recently come into discredit in the French army. Above these monotonous instruments comes the trumpet, which brings barbaric music a long step further on The pipe or flageolet appears in its rudimentary form in the common whistle and the improved by holes, by which the player alters the length of the pipe so as to give several notes From very remote times and far and wide over the earth the familiar pipe is found, played single or double, and sometimes blown with the nostril instead of the mouth Already in the ancient world it had often been provided with a skin windbag which made it into the bagpipe or held sideways and blown across the mouth hole, it became the flute In the modern orchestra the cornet is a trumpet provided with stops. The clarionet is a development of the grass stem, with a vibrating slit or tongue, such as children use in the fields The whole class of musical instruments to which the harmonium belongs work with these vibrating tongues, which by the name of reeds still keep up the memory of their origin The organ carries out in the widest range and grandest proportions the principle of the simple pipe or whistle

Not less primitive are the rubbed forms in which stringed instruments appear These, however, unlike the class of music making devices which come from the plaintive pipe of the gentle shepherd or shepherdess of the antique age whose thoughts were only of peace and love, owe their origin to a weapon of war Homer tells in the "Odyssey" how Ulysses, when he has strung his mighty bow, compact of wood and horn, gives the stretched string a twang that makes it sing "like a swallow in a storm tone beautifully" This Homeric bow is the true progenitor of the grand squarepiano of our modern parlours One might well guess that the strung bow of the warrior would as virtually become a highly developed musical instrument as is seen to have been the case with the rude pipe of the rustic swain The Egyptian harp was nothing more than a bow, or curved piece of elastic wood with several strings of different length strung across it, instead of only one string. All the ancient harps, Assyrian Persian, and even the old Irish were made on this plan. A defect of the plan was found in the fact that the tension of the wooden back put the strings out of tune. This defect was remedied in the mediæval English harp, with its front pillar, which makes the whole frame rigid and firm. The course of improvement in this direction was then by gradual and logical growth The harp as such distinctively is now losing its old high place in music, having been largely crowded out by its numerous progeny, among which may be named the bassviol, the banjo, the guitar, and the violin. In the piano, however, the harp survives almost intact, and speaks to us, as it were, from the recesses of what we may call its coffin The very form of a grand piano shows that it is a harp laid on one side in a case, its strings being struck by tiny hammers worked from a keyboard, instead of being plucked directly with the fingers. It is the latest development from the bowstring of the prehistoric fighting man —*Chicago Journal of Commerce*

An unusually abundant harvest is expected in all the districts of Russia, and business is looking up in the manufacturing districts in consequence

The success of the *Australian colonies* has been in measure due to the fact that the expense of the voyage precludes the advent of pauper emigrants. When a moneyless man goes he has been selected by the Colony's agent in London, with regard to his physical capacities and character, and although, of course, black sheep slip in, yet, on the whole, the immigrants are of a superior class, and unlikely to swell the ranks of the paupers. Hence the standard of comfort is comparatively high among the working class, and this is, coupled with the fact that manufactures do not as yet pay in the colony, that accounts for a consumption of British products which, in view of the size of the Australian population, seems at first sight inexplicably large.

MINING NEWS.

[I]SLAND SILVER MINING COMPANY

[P]resident Daly paid a flying [v]isit to Prince Arthur's Landing yester[d]ay, coming to Pie Island at an early [h]our this morning. He was as usual [v]ery busy, and we were unable to [g]et him, except for a short interview, [d]uring which we gleaned the information [t]hat everything was proceeding in a [v]ery satisfactory manner. A [q]uantity of timber is already on [h]and for use in the intended [w]orks. The erection of these is [t]o be pushed rapidly as they are very [m]uch needed for the accommodation of [a] large number of men employed on the work. The dock has been re[m]oved, and is now a very substantial one [a]nd fit for every requirement but will [n]eed to be carried out about 50 feet into the [l]ake so that the large steamers can land [a]nd freight there. *The engine is to* [a]rrive and will be ready for working [w]hen the tug arrives there to-day [w]ith the balance of the machinery. The [e]xplorations in the interior of the Island [s]ince the discovery of several very [l]arge and fine looking lodes containing [o]re, and it is proposed to open them [o]ut. The explorers are still prose[c]uting their work, and it is expected that [s]everal more of other lodes will be re[v]ealed in a short time. It is fair to pre[s]ume that all parts of the Island will be [i]n a state of great activity during the [e]nsuing winter. It will, however, be gov[e]rned to some extent by the force of cir[c]umstances, such, for instance, as to [w]hether the number of men required [c]an be obtained, etc. It is very gratify[i]ng to learn that large quantities of [o]re are being obtained in the shaft [a]s were shown by Mr. Daly one very [l]arge specimen, but he assured us that it [w]as not to be taken as an average sam[p]le. The bulk of the ore which he is [n]ow raising contains native silver in [l]arge blocks, and it increases in richness [a]s the work progresses. The comparatively small amount of work already [d]one has exceeded the expectations [w]hich the promoters had formed of this [v]aluable property. The shaft has been [e]nlarged to the 50 feet level, and the [d]rift is in to the south about 50 feet on [t]he lode from which is being taken, [y]ielding very fine native silver. There [a]re a number of feeders running into the [v]eins from these directions. It is in[t]ended to drift in the north side of the [l]ode and cross cut on the east side; at [t]he same time they will continue to [s]ink to the bottom of the shaft which is [n]ow down to 60 feet. Mr. John McKellar, a man of great experience in [m]ining matters, and one of the owners [o]f McKellar Island, who has charge of [t]he men on Pie Island, thinks the vein [l]ooks very promising indeed.—*North Shore Miner.*

CONCERNING THE VALUE OF UNDEVELOPED PROPERTIES

By undeveloped properties we mean [t]hose which appear on the records of the Mines Office as under prospecting [l]icense, or lease by area, to *John Omman* and his partners. The purpose of [t]he laws framed for the governance of [g]old mining was, at any rate, to give the [a]dventurous prospector an opportunity [o]f finding what many of them would [h]ave called a gold reef (an Australian [t]erm introduced largely by the Nova [S]cotian who came home from the gold [f]ields of the southern hemisphere), and [a]gain to give the mining capitalist as [s]ecurity of title on which he might risk [a]n outlay for labour, machinery, etc.

What has been the real result of this [l]aw for this class? Gossip, a poor relation of that aristocratic lady Rumour [V]irgil describes, publishes the fact of a [s]uccessful exploration, and at once Tom, [D]ick and Harry, butcher, baker and [t]ailor rush to take up claims or licenses. [T]he conditions of contract by which a [m]ineral territory is thus held specifies a certain amount of work to be done, as [c]learly would be done if the parties [w]ere genuine prospectors or genuine [m]iners. But do these energetic licensees [o]r lessees proceed to fill their share of [t]he contract by which they hold a title [f]rom the Mines Office? No; they are in [a] safe haven, reached at a small expense, [a]nd they prefer to watch the course of [e]vents before they—not work, but—put [t]he property up for sale. The man [w]ho develops the value of the lode is [n]ot who has opened up the rock, sunk [s]hafts, erected machinery, and done the [w]ork of opening a gold mine, the others [a]re holding property by a false tenure, [a]nd the sooner this tenure is made strict [a]nd actual in all its conditions the [s]ooner will the wealth in mineral value [b]elonging to the people of Nova Scotia [c]ommence its period of rich develop[m]ent. There is much wealth in this [p]eninsula, but *it is locked up in idle* [h]eedy hands by an imperfect administration of an imperfect law.

It is full time that our system of mining [l]aw and of mining leases should be ventilated. We admit frankly that the capitalist who invests in any of our mines will find his venture a safe one; but how many properties are open to his investment, out of the great number that are on the records of the Mines Office? A large proportion are held at a price that precludes their occupation by a mining capitalist, the money which should properly go to development is claimed by the leaseholder, whose investment is as diminutive as his demands are large.

There is no doubt but that a developing state of things would the provisions of our mining laws are [d]ealt with impartial hands. Under such a law is a strict administration of its provisions would wipe out a number of leases that are now an incubus to the progress of genuine mining. In the present Capital will flow in here readily if mining is made an absolute condition of tenure at present we merely have the capital that is fortunate enough to find a favourable site out of the many that should be available.

Here we come to the question of value in undeveloped properties. There is no doubt but that a virgin claim or set of areas will, if offered in the mining market at a reasonable rate, attract working capital very readily. The gold that remains in the grass roots will be attractive to such enterprise, and the absence of any exhausting demand for cash on purchase will allow of an outlay on effective and profitable work. The owner of the lease will find him self, very probably, a participator in profits of which his share will amount to more than what he would really get out of a transaction manipulated by a broker, whose commission so often absorbs all the cash payment made on a purchase.

It is noticeable that very often the first thing done on the purchase of a developed mine is to make a complete change in the machinery and in the working of the property, which would seem like a condemnation of the work done by the developer. If this happens so frequently, is it not likely that the undeveloped property placed in the hands of such a management would start in production with the advantage of a perfectly free field?

What we want, then, is a reasonable value placed on undeveloped properties and the application of the capital and mining skill to their development, not for a market, but for a continuous production by the new owners. — *Mining Review*

STATISTICS OF THE ANTHRACITE INDUSTRY

Number of acres of coal lands reported	104,832
Mineral value of same, whether owned or leased	$102,614,844
Average value per acre	$622.47
Number of tons on which royalty reported	14,056,931
Amount paid on above for royalty	$3,226,306
Average amount paid per ton for royalty	$23 17
Number of horses	849
Value of horses	$48,962
Number of mules	7,718
Value of mules	$548,905
Number of steam engines	1,804
Value of engines	$3,709,916
Horse power of engines	102,622
Number of boilers	4,007
Value of boilers	$2,332,740
Horse power of boilers	86,608
Number of mine locomotives	80
Value	$243,245
Number of pit cars	30,464
Value	$1,643,560
Miles of railroad track under ground	1,095
Miles of railroad track outside	228
Total value of machinery, including engines and boilers	$13,235,615
Value of plant	$39,814,390
Value of working capital	7,731,963
Value of real estate	102,614,844
Total capital, real and personal	$150,161,196
Ratio of real estate to total capital	68.34 per cent.
Ratio of plant to total capital	26.51 per cent.
Ratio of working capital to total capital	5 15 per cent.
Ratio of value of annual product to total capital	33.46 per cent.

The very large increase in capital reported ($150,161,196) over that returned in 1870, ($50,807,285,) would seem to call for some explanation and justification, the more so that the capital in 1870 was reckoned in paper dollars. The increase is over 195 per cent.

The "plant" covers machinery, tracks, cars, buildings, animals, shafts, and dead work, and is the sum of the several items, and has been kept rather under than above its true value.

The largest part of the increase of capital is due to the fact that we have included in our returns the coal lands not owned by the mining companies, but worked on a royalty. Mineral lands are clearly a part of the capital of the mining industry, whether owned or leased or mortgaged. It has been our aim, however, to include only those coal lands which are in immediate connection with a working colliery, and either producing, or, in view of the increasing demand for this fuel, about to produce. The average number of acres reported (604) is not too large in this view; for the area reported would make a block only 16 12 miles square, which the 1,085 miles of underground track would pierce, with 67 parallel gangways from side to side, less than one-quarter of a mile apart.

53,335 acres of non producing coal lands, valued at $25,702,500, held in reserve by the great companies, were thrown out altogether as not an element of productive wealth at present. Of the 104,832 acres retained, 13,852 were returned as worked over. As all but a very small portion of this still contains the lower seams, it has all been considered as producing coal lands. The total amount so retained constitutes about 36 68 per cent of the entire area of anthracite lands, estimated at 290,791 acres.

The average value per acre, $622.47, is much less than the ordinary market value of such lands, so far as such property—valuable only in blocks—can be said to have a market value. The price has usually been fixed by the owners.

Again, taking the average royalty of 23 17 cents per ton, which is reported as paid on 51½ per cent. of the product reported and crushing it to the entire output the owners to real estate would receive a return [illegible] of 8.25 .02 We are justified in this estimate since the large owners are returned as equally valuable with those worked on a royalty.

Assuming the careful estimate of the total yield of the entire field made by Mr Joseph B Harris, and on the very conservative view that only 25 per cent of the total coal at would be mined and marketed the production of anthracite after 1881 would rest [illegible] tons before exhaustion. This would indicate that the output of the census year could be maintained for 14 years.

As the lands which we have assumed as a necessary part of the industrial capital to be reported constitute 68.34 per cent of the entire area they would continue to earn their present income for 83 years.

If we assume that one-tenth of the income would be absorbed in taxes and expenses the present value of the above income for 83 years would be, with interest at 6 per cent. in round numbers $112,420,000, and with interest at 5½ per cent., $102,700,000.

The above valuations would be materially increased if we took into account the probable anticipations of the payments of the income of the later years of the term, owing to the increasing demand and the probable reduction of taxes, as the estate approached exhaustion.

Finally, the term "working capital, means the sum of money necessarily advanced for wages and supplies during the interval between production and the receipt of returns from sales. It is represented in actual property by the unsold product on hand and in transit. The estimate of this amount was made in nearly all of the collieries by the operators. As the sum is equal to but little more than the value of the product for sixty days, it is evidently not exaggerated.

On the whole, the actual value of the anthracite property, as an element of productive wealth, is underestimated, notwithstanding the great apparent rise since 1870.—*N Y Indicator*

NEW THEORY OF THE FORMATION OF COAL

The *Engineer and Mining Journal* has the following communication from Mr Theo. Cooper, C E., of Scranton, Pa., which raises new questions not of the origin but of the formation of coal:—

I have looked in your paper for several weeks past to see some notice of the remarkable material discovered in excavating for the new court house in this place. Having seen nothing, I thought it my duty to science to report upon the same. First allow me to describe briefly the location. This building site is in the heart of the town, upon a square which formerly was a swamp, but some years ago was filled with cinder from the ironworks.

On excavating for the court house foundations, the cinder was first removed. This was five to six feet deep. After this, came a bed of excellent peat, varying in depth from 8 to 12 feet. Below the peat, a stratum of muck separated the peat from the hard pan below. In the muck were veins of tough black jelly, resembling in all manners, except its gelatinous character, anthracite coal—lustre, colour, fracture. When dried slowly, it solidifies into a hard, brittle substance, which would be considered by an ordinary observer as real anthracite coal. After hardening it does not again soften in water, hot or cold. It burns at a read heat, and leaves an ash resembling the red ash of some coals. It flames on first ignition. The jelly is acted upon by alkaline solutions.

Some analyses have given only 20 per cent. of carbon in the dried state, but I think the poorer specimens contain a larger amount than this.

Now I am strongly inclined to believe that this is a true key to the formation of coals, and have assumed the following hypothesis as worthy of experimental examination:—

First, the formation of a siliceous jelly from the action of water upon the silicia in the vegetation. Second, is it possible for silicious jelly to extract and absorb carbon from the carbonaceous fluids extracted from the overlying vegetable matter?

Anyhow, here is a carbonized jelly: how was it formed? and does it resemble coal sufficiently to warrant a belief that coal was formed in this manner?

I inclose some small samples of the dried substance, and if you can get any chemist to investigate the subject will be pleased to forward sample of the gelatinous matter.

A number of the directors of the S H M Co. paid a rather lengthy visit to Spring Hill last week. They were accompanied by Chief Justice Sir William Ritchie. The company are about to sell or lease a number of lots of land, and it is understood their visit was in this connection. With their usual good fortune, the Spring Hill Mining Company have been fortunate in unearthing a splendid seam of coal. Sinking about 100 yards or thereby to the north of the west slope the sinkers went through a seam of coal twelve feet six inches thick. The find is said to be the best coal yet discovered in the neighbourhood, being brighter looking than the coal presently worked. It is said to be altogether free of slate or stone. The Spring Hill Mining Company have purchased two powerful engines from the Albert Mining Company, the one a pumping, the other a hoisting engine. It is said that both engines will be erected at the west slope, and that the hoisting engine will be employed in hoisting from the new thirteen foot seam, which it is thought will shortly be opened out. It is also said that the west slopes will be driven down four hundred feet further. If the expected operations are carried out the company will be able to point to the most extensive coal works in the province.—*Spring Hill Journal*

ENGLAND'S NATIONAL DEBT.

In anticipation of the discussion in Parliament of Mr. Gladstone's scheme for the reduction of the national debt, there has been issued a treasury minute setting forth the details of the plan and the measures to be taken to carry it out. The scheme, as we have before explained, is a very simple one. In 1885 annuities to the amount of £7,107,572 will expire, and were our financial arrangements left on their present footing the then Chancellor of the Exchequer would have this large sum at his disposal either for the remission of taxation or the reduction of debt. Mr Gladstone, however, is of opinion that this option as to the disposal of the money should be somewhat curtailed. His desire is that some portion of the free revenue that is to accrue four years hence should be devoted now to the extinction of debt, and secured for that purpose beyond the possibility of alienation. And to this end he proposes the creation, by a twofold process of a new series of terminable annuities.

In the first place he asks Parliament to empower him to convert immediately £2,000,000 of the £7,107,572 of annuities terminating in 1885 into annuities running until 1906. By thus extending from 4 to 25 years the term of the annuity, the annual payment will be reduced from £2,000,000 to about £460,000, the calculation being that an annuity of £460,000 for 25 years is of the same capital value of one of £2,000,000 for 4 years. The effect of this operation will thus be to set free at once £1,540,000 of revenue, and Mr Gladstone's second proposal is to apply this sum to the cancelling of £60,000,000 of funded debt. He will say to the holders of debt to this amount:—"Hand me over your stock to be cancelled, and in its place I will give you an annuity of sufficient amount to pay off the principal and interest in 5 years." The amount of such an annuity, assuming consols to be at par, is £3,428,600, and towards the payment of that Mr Gladstone has the £1,540,000 which will be saved by the conversion of the £2,000,000 short annuities. Moreover, by the cancelling of the £60,000,000 of stock the annual interest on the funded debt will be reduced by £1,800,000, and this added to the £1,154,000 makes a total of £3,340,000, which will be available for the payment of the proposed annuity of £3,428,000. Thus only £88,000 remains to be provided, and that Mr Gladstone proposes to take out of the new sinking fund.

If Mr. Gladstone had to find amongst the general public people willing to accept his new annuities in lieu of their stock, there would be little prospect of his being able to carry out his scheme. There are comparatively few fundholders would care to make this change in the character of their investment. But the Government is not dependent on the public. It is itself the holder of a large amount of stock on account of the savings banks, and £10,000,000 of this Mr Gladstone now proposes to convert into annuities. The remaining £40,000,000 he asks to be allowed to take from the £62,000,000 or so of stock now standing in the name of the Chancery Paymaster. To this latter proposal the Lord Chancellor has consented on condition that there shall be a margin of unconverted securities left sufficient to provide the maximum amount of payments and transfers out of court which, according to experience, can possibly be required, and as the highest amount transferred in any one year hitherto has been £6,595,000, the balance which Mr. Gladstone proposes to leave is, to all appearance, ample. But to make assurance doubly sure, it is further proposed that the Treasury shall be empowered, should the need arise, to reconvert the annuities back into stock, and by this means the interests of all interested in the Chancery funds are thoroughly safeguarded. There are some minor regulations in connection with these conversions to which it is not necessary now to refer. The gist of the plan is, that the National Debt Commissioners and the Chancery Paymaster will have the book entry of £60,000,000 of stock now at their credit cancelled, and in place of it will receive an annual payment of £3,428,000. Of this amount £1,800,000 represents the annual interest on the £60,000,000, *to which those on whose* account the Government securities are held will be entitled, while the remaining £1,628,000, invested at 3 per cent., will in 25 years amount to £60,000,000, and thus replace the stock now cancelled.

Upon this scheme the actual reduction of debt will, of course, be no greater nor no more rapid than it would be if £2,000,000 of the amount left free by the expiring of annuities in 1885 were applied year by year until 1906 to the purchase of stock. The result of such a continuous annual redemption, just the same as the operation of the annuities, would be to wipe off £60,000,000 of funded debt in the course of the ensuing 25 years, and to leave at the close of that period £2,000,000 of free revenue. The difference is simply in the form and not in the essence of the transaction. But the difference, nevertheless, is a very important one. All our experience has shown that it is almost impossible to induce Parliament to provide large yearly surpluses for the repayment of debt. If there is at any time an excess of revenue over expenditure, it is immediately made the basis of demands for the remission of this or that tax, which the Chancellor of the Exchequer rarely finds himself able to withstand. The consequence is that hitherto we have done far less in the way of wiping off debt than we ought to and might have done. And, although there is no longer the same reason for preferring remissions of taxation to repayment of debt that there was before the reform of our fiscal system, we appear as little disposed as ever to make any perceptible effort to reduce the amount of our national indebtedness. When we have a surplus we spend it, and it is the recognition of this weakness that is at the root of such schemes as that which Mr Gladstone now puts forward. What he wishes to do is, so to speak, to hide from us the fact that we have a surplus. Under his scheme the £2,000,000 to be applied to the debt redemption will appear in the budget, not as so much free revenue, but as a debt due to certain annuitants, the payment of which is not optional, but absolutely necessary. The money, therefore, will always be provided, and we shall thus be steadily doing something during the next twenty-five years to reduce our indebtedness, whereas if it were left to Parliament each year to vote £2,000,000 for redemption purposes, the chances are very much against this amount being regularly forthcoming.—*London Economist.*

A correspondent writing from Dublin to an English paper declares that a manufacturing and industrial agitation will follow close upon the settlement of the Irish question.

Among the Christmas books of the present year will be a birthday book of the Princess Beatrice. The book will consist of illustrations in water colors, said to be very charmingly executed, and designed to represent by their appropriate flowers the twelve months of the year. These pictures are to be reproduced by the chromo-lithographic process. The illustrations for August and December will be printed in no less than seventeen colours, and that for April in eighteen. The volume is intended to be one of the most magnificent gift books of the year.

The other day I was crossing St. James's Park from the Duke of York's Column. A rather decent-looking girl was doing the same, and as we walked along side by side, we fell into conversation. In order to encourage her to talk, I said that I was a printer, and had been kept up late at my work—it was about 2 a.m. She told me that she had been walking about Mile End Road all day, and the Park all night, but that she had earned nothing. She was engaged, she said, to a soldier who was in India, and she lived in some slum at Westminster, where she paid eight shillings a week for her room. Her weekly earnings averaged fourteen shillings. I mildly suggested that she might make as much money by sewing or by taking service; but she said that she could not sew, and that she would find it impossible to get a situation as a servant maid. When we had got to Birdcage Walk, I gave her half a crown, which I thought about what a printer could afford. She thanked me, and said that she would not take it if I was myself in want of it. Then she asked me to shake hands, which I did, although I could not help thinking that if a friend were to pass, he would think my associations remarkable. And so we parted. Now this is the sort of girl who is arrested by the police. But if she, why not, I ask, the women, in panoply of silk and brass in Waterloo Place?—*Truth.*

Professor Schlager, director of a noted insane asylum at Vienna, announces the result of experiments made by him in relation to the blue glass healing theory, which at one time attracted so much attention in America as well as abroad. He had a room furnished with windows of blue glass, and had the walls painted of the same colour. He then selected sixty persons who were more or less deranged mentally, and made them the subjects of experimentation for a period of three years, placing them at selected times in the blue and carefully noting the apparent effects upon them. He discovered that the abnormally aroused and excited temperament experienced a remarkably soothing and quieting influence in the blue light, and he expressed the conviction that with persons thus mentally deranged, with whom every other method of treatment has failed, this should be tried. He does not report any complete cures made by this means alone, but says that in most cases the treatment has proved beneficial, and that if continued systematically and *persistently, the indications are that it* will lead to complete restoration. In no case did it work injury. He expresses the intention to continue his experiments, and calls upon all associates and colleagues in the treatment of the insane to do the same, and make careful notes of their observations. Professor Schlager has also made valuable and interesting experiments in treating deranged persons of abnormally depressed or sluggish and apathetic temperaments by exposing them in a similar manner to red light. His conclusions seem to be based upon careful and scrupulous study and observation, and are attracting deserved attention.

MONTREAL PRICES CURRENT.

GROCERIES

TEAS.

Congous, fine to finest			
" fair to good			
" common			
Gunpowder, finest to extra			
" seconds			
" thirds			
Imperials, medium to good			
" fine to extra			
Japans, choicest			
" choice			
" finest			
" good medium			
" medium			
" common			
" dust			
Oolongs, choicest			
" fine			
" good			
Souchongs, fine to finest			
" fair to good			
" common			
Twankay			
Young Hyson, finest to extra			
" seconds			
" thirds			
" fourths			

COFFEE.

Cape			
Chicory			
Java, old Government			
" Ordinary			
" Singapore			
Jamaica			
Laguayra			
Plantation Ceylon			
Rio			
Maracaibo			
Mocha			

SUGARS.

Barbadoes			
Cuba			
Cut Loaf			
Granulated			
Do. Diamond A			
Grocers' A			
Montreal Yellow			
Porto Rico			

SYRUP.

Amber			
Diamond Drips			
Imperial			
Lord Lorne (nominal)			
Pale Amber			
Royal Imperial			
Star Amber			
Standard			

MOLASSES.

Barbadoes (Imp. gallon)			
Cardenas			
Centrifugal			
Filtered, brls			
Filtered, pns			
Muscovado			
Porto Rico			
Sugar House, brls			
Sugar House, pns			
Trinidad			

FRUIT.

Almonds, hard shell			
" soft "			
" Jordan shelled			
" sweet "			
Brazil nuts			
Currants, new			
Dates, golden			
" black			
" finest			
Figs, Eleme layers			
" Malaga mats			
" " boxes			
Filberts			
French Prunes, boxes			
" " kegs			
Raisins, black crown			
" London layers			
" Loose Muscatel			
" Old Loose Muscatels			
" Layers			
" seedless mats			
" old			
" black basket			
" blue "			
Sardines, quarters			
" halves			
Sultanas "			
Valencias			
Walnuts			
Walnuts, Grenoble, genuine			

SPICES.

African Ginger			
Allspice			
Cassia			
Cloves			
Jamaica Ginger, bleached			
" unbleached			
Mace			
Mustard Seed, yellow			
" ground, 4lb jars			
" " 1lb "			
Nutmegs			
Pepper			
Do white			

RICE.

Rice			
Sago			
Tapioca			

SALT.

Coarse (10 to the ton)			
Eureka, bags			
" halves			
" quarters			
Factory Filled			

FISH.

Canned Fish—			
Lobster, 1lb cans			
Mackerel, "			
Salmon, "			
Dry Cod (Gaspe)			
Green Cod in barrels—			
No. 1			
No. 2			
Large do., draft, No. 1			
" " " 2			
Herring, Labrador			
" Cane, No. 1 split			
Lake Superior White Fish, half barrels			
" Salmon Trout half barrels			
Columbia River Salmon, brls			
" No. 1			
" " 2			
" " 3			
Scaled Herring			
Split Mackerel, No. 1			
" " " 2			
" " " 3			

LIQUORS.

Brandy, Hennessy's, per gal			
" " cases			
" Martell, per gal			
" " cases			
" Otard Dupuy & Co., ✱ gal			
" Pinet's, ✱ gal			
" Vine Growers' Co., ✱ gal			
" Dulary & Co., ✱ gal			
" Jules Robin's, ✱ gal			
" Riviere Gardre & Co., ✱ gal			
" Renault's, ✱ gal			
" J. Denis, H. Mounie & Co., ✱ gal			
" Arbouin, Marett & Co., ✱ gal			
" De Luze, Fils & Co., ✱ gal			
Rum, Jamaica, 16 o.p., per gal			
Demerara			
Cuba			
Gin, De Kuyper's, red cases			
" " green "			
" " in wood			
" Blandenheyn & Nolet			
other brands			
green, other brands, per case			
" red, other brands, per case			

Pale Ale, Allsopp's Extra, per doz			
Burton Ale, Tennent's, cases			
" " wood			
Highlander Ale, Imperial gal in bond			
Rye Whiskey, Imperial gal, in bond			
" in small lots, duty paid			
Bass' Ale, quarts			
" pints			
Guinness' Stout, quarts			
" " pints			
Champagnes—			
Pommery			
Perrier, Jouet & Co			
Ayala & Co			
Moet & Chandon's Extra Superior			
" " No. 1			
Boelinger			
" No. 2			
Theo Roederer, Carte Blanche			
" Gladiateur			
Jules Mumm's Dry Verzenay			
" " Extra Dry			
" " Private Stock			
De St. Marceaux & Cie, Carte Blanche			
De St. Marceaux & Cie, Carte d'Or			
Max Sautaine			
L. Delsuconico			
L. Jaunay, quarts			
Sherries—			
M. Mira			
Pemartin's			
Ports—			
Cockburn, Smithes & Co.			
Geo. G. Sandeman, Sons & Co			
Port Wine, Graham's			
Pelee Island Wines			
Sparkling Saumur—			
Rousteaux's, quarts			
" pints			
Ackerman & Lawrence Clarets—			
Barton & Guestler's			
Nathaniel Johnston & Sons, quarts			
Nathaniel Johnston & Sons, pints			

DRUGS AND CHEMICALS.

Aloes, Cape			
Alum, per 100 lbs			
Arrowroot, per lb			
Bicarb Soda, per 100 lbs			
Bichromate of Potash			
Bleaching Powder, per 100 lbs			
Blue Vitriol			
Borax, refined			
Camphor, American Refined			
" English Refined			
Castor Oil			
Caustic Soda, per 100 lbs			
Citric Acid			
Copperas, per 100 lbs			
Cream Tartar, Crystals			
" Ground			
Epsom Salts, per 100 lbs			
Gum Arabic			
" Trajacanth			
Indigo, Madras			
Iodide Potass			
Logwood, Extract			
Madder			
Opium			
Oxalic Acid			
Pipe Clay, per 100 lbs			
Quinine			
Sal Soda, per 100 lbs			
Saltpetre, per keg			
Soda Ash, per 100 lbs			
Sugar of Lead			
Sulphur, per 100 lbs			
Sulphur, Roll, per 100 lbs			
Tartaric Acid			
Whiting, per 100 lbs			

WINDOW GLASS.

Window Glass, per 50 ft. ordinary 4th quality:			
To 25 added inches			
" 40 " "			
" 50 " "			

CORKS.

1sts to 3rds, per gross			

LEADS & PAINTS.

Red Lead and Litharge			
White Leads			

BLUE.

Ball			
Button			

OILS.

Cod, Gaspe, ✱ Imperial gal			
" Newfoundland, do			
Lard, Extra			
" No. 1			
Linseed, boiled, ✱ gal			
" raw			
Olive			
Palm, ✱ lb			
Paraffine—Canadian ✱ gal			
" American			
Petroleum, refined, carloads			
" in small lots			
Seal, Pale, ordinary			
Seal, Straw			
Steam refined Seal			

NAVAL STORES.

Coal Tar			
Oakum—Navy			
Pine Pitch			
Pine Tar			
Resin—Strained			
" No. 2			
No. 1 & Pale			
Spirits Turpentine, Imp. gall			

CORDAGE.

Manilla rope			
Sisal			
Tarred rope			
Jute "			
Cotton "			
Ball, canvass duck			
" cotton "			

CANDLES.

Belmont Sperm			
Mould, Montreal			
Paraffine, 12s & 6s			

IRON AND HARDWARE.

PIG IRON.

American			
Canadian Siemens			
Cambroe			
Coltness			
Eglinton			
Gartsherie			
Glengarnock, per ton			
Hematite			
Summerlee			

BAR.

Canadian Siemens			
Lowmoor and Bowling (under 200 lb)			
Scotch and Staffordshire, per 100 lbs			
Best Staffordshire, per 100 lb			
Swedes and Norway			

CANADA PLATES.

Arrow and equal			
Clifton			
Hatton			
Swansea and Penn., per box			

TIN PLATES.

Charcoal, I C, per box			
Charcoal, I X			
Charcoal, D C			
Coke, I C			
14 x 20, 20c extra.			

TINNED SHEETS.

Charcoal (best) No. 26			
Coke "			

GALVANIZED SHEETS.

Morewood's Lion, No. 26			
Other brands, No. 26			
Hoops and Bands, per 100 lbs			
Sheets, best brands			

STEEL.

Cast, per lb			
Sleigh Shoe			
Spring, per 100 lbs			
Best C, warranted			
Tire do			

BOILER PLATES.

Best Best Best, ✱ 100 lbs			
Lowmoor and Bowling, under No. 8			
Ordinary Brands, best, ✱ 100 lbs			

MISCELLANEOUS.

Anchors			
Anvils, "Peter Wright's"			
Axes, Chopping, 2 to 2½ per dozen net			
Best S S			
Best D S			
Chain Cable			
Cut Nails, per keg lbs:			
10d to 60d (3in and larger)			
8d and 9d (2½ and 2¾in)			
6d and 7d (2 and 2½ in)			
4d and 5d (1½ and 1¾in)			
A P			
Cut Nails, per 100 lbs:			
3d (1¼in) A P			
4d to 6d, C P, cold cut			
3d " "			
Galvanized Wire, No. 0 to 8, per bdl of 3 lbs			
Horse Nails, 40 to 45 p. c. discount			
No. 7 No. 8 No. 9 and up.			
Finished 22c 21c 20c			
Pointed and Finished 21c 20c			
Horse Shoes, per 100 lbs			
Ingot Copper			
Ingot Tin			
Iron Wire, brt. or an'd—			
No. 0 to 6, per bdl 60 lbs			
Pressed Nails, per 100 lbs			
Proved Coil Chain, ¼in			
Sheet Zinc			
Spikes, pressed, per 100 lbs			
Vices, "Peter Wright's"			

LEAD.

Bar, per 100 lbs			
Pig, "			
Sheet, "			
Shot, Canadian, per 100 lbs			

LEATHER

Buff			
Buffalo Sole, No. 1			
" " No. 2			
Calfskins			
Grained Upper			
Harness			
Hemlock Slaughter			
Hemlock Spanish Sole, No. 1			
" " No. 2			
Pebbled			
Rough Leather			
Sheepskin Linings			
Splits, large			
" small			
Waxed Upper, light and medium			
" " heavy			

BOOTS AND SHOES.

Boys' Split Brogans			
" Buff and Pebbled Congress			
Men's Kip Boots			
" French Calf			
" Buff Congress			
" Split Brogans			
Misses' Buff and Pebble Balmorals			
" Prunella Balmorals			
Women's Buff and Pebbled Balmorals			
" Prunella Boots			

RAW FURS.

Bear, cub			
Bear, large prime			
Bear, small			
Beaver, spring, do			
Beaver, Winter, clean pelt, per lb			
Cross Fox			
Fisher			
Lynx			
Martin			
Mink, Dark Prime			
Otter			
Raccoon			
Rats, Spring			
Red Fox			
Silver Fox			
Skunk, black			

WEEKLY REVIEW.

MONTREAL, August 31st, 1881.

The wholesale trade of the past week has shown fair volume, although it has not been as active as it will be in a few weeks hence. A large distribution of goods, however, has already taken place in dry goods, iron and hardware, boots and shoes, glass and earthenware, etc., and by the middle or end of September a general movement may be looked for. Remittances are fair for the season, the amounts falling due about this time being comparatively small. Canadian farmers are singularly fortunate this year in being blessed with abundant crops of cereals, for which they are receiving high prices, and the prospects for the continuance of same are good.

DRY GOODS—During the past week a number of buyers from the West have taken advantage of the arrangements effected with the Grand Trunk Railway Company whereby bona fide buyers are accorded the privilege of travelling from any of the stations on the line west of Kingston to Montreal and return for one fare. The tickets are available on the down trip by the boats of the Richelieu and Ontario Navigation Company from Toronto or from any place between there and Kingston on payment of one-third extra fare from such place to Montreal, returning by railway. Tickets may be purchased up to 30th September, which hold good for 15 days from the commencement of journey. From the number that have already availed themselves of these arrangements, and from the many fresh applications for tickets through firms in this city, we should judge that a larger number of Western buyers intend visiting Montreal this fall than for several years past. Those who have put in their appearance during the week have made very liberal purchases, several large buyers ordering from $4,000 to $7,000 worth of goods. One of our leading wholesale dry goods firms has compared its sales of the present month with those of the corresponding month last year, and the result is an increase of 17 per cent. in favour of this month's business. There is a brisk demand for all kinds of cotton fabrics, both bleached and coloured, and a very fair distribution of heavy woollens, flannels, tweeds, etc., is reported.

IRON AND HARDWARE—There has been a good Western demand for pig iron during the week, and several good sized orders have been taken for forward delivery at about last week's prices, leading brands having been placed at $20. Among the sales reported were 150 tons of No. 1 Glengarnock at $20, and 300 tons of Summerlee at $20; also 100 tons of Eglinton at $18 25. In bar iron the demand is as large as when last reported, and English makers are so busy and so full of orders that importers in this city have the greatest difficulty in getting on their goods.

GROCERIES—In sugar we hear of no change since last week, granulated being still quoted at 9c at the refiners, and Montreal yellows at 7¾c to 8¼c. In fruits, first lots of Valentia raisins have turned out excellent in quality. According to latest cable advices prices in Denia have advanced to 8s, and, indeed, all kinds have this week taken an unexpectedly upward turn at points of production. Sultanas have gone up to 32c, layer raisins, which sold at 32 reals at Malaga, are now reported up to 40 reals in store. Sales of Valencias have been made in the neighbourhood of 9c. Currants are very firm, the French demand having set in, which will probably preclude the possibility of any lower prices for some time to come. The new crop of almonds is reported very short, and prices are nearly 60 per cent. higher than at this time last year. A heavy demand continues for tobacco at advanced values. In teas we have nothing to report different from last week's review. Spices are steady and pepper is advancing. A fair business is reported in rice at $3.75@3 90.

SALT.—We have no change to note in this article, sales having been made at from 57½@60c for coarse. Dairy salt is in fair demand at last week's rates.

FISH.—The *Matchless* is expected in port immediately with about 400 to 500 bbls. of Nova Scotia herrings on board, and we quote large fat fish from $5 00@5.25 per bbl. Dry cod is steady at $4.00 per bbl.

LEATHER—There is virtually no change since our last week's report, prices here remaining just as then quoted. No 1 bal. sole continues to meet with moderate inquiry and sales have been made at 25c. to 26c as to quantity. Black lea hers are quiet at about former rates, and measured kinds move off fairly well for the season.

BOOTS AND SHOES—Our manufacturers are as busy as ever filling orders for prompt shipment as well as turning out goods for future delivery.

OILS—There has been some movement in cod oil, several lots having changed hands at 42½c to 43c., but holders are now demanding better figures. Linseed oil is firmer and higher at 76c to 77c for boiled and 72c. to 73c. for raw. There has also been a little movement in steam refined seal at 56½c. to 57c for small lots. There have been transactions in vat seal at 50c. Imperial, and in steam at 45c. to 46c. We advance coal oil another cent per gallon to 23½c to 24c. for car lots, 24½c. to 25c for broken lots and 25½c. to 26c. for single barrels.

DRUGS AND CHEMICALS—English advices quote more activity in caustic soda and bleaching powder, but no advance in prices. The improved feeling in borax noticed by us last week has been maintained. In bicarb there is little doing at the moment, large quantities being obtainable at $2 90 while jobbing lots bring $3 05 to $3.20 as to size. Sal soda is quiet at 90c to 95c in round quantities, and $1.00 to $1.10 for jobbing lots.

HIDES AND SKINS.—A fair seasonable trade has been done in green butchers hides during the week at $10, $9 and $8 for No's 1, 2 and 3. Lambskins are up 5c to 10c to 75c to 80c, and calfskins are steady at 12c per lb.

WOOL—The London wool sales have not given that satisfaction which was looked for by the trade, as prices of some kinds have fallen away ½c to 1c per lb, as compared with previous sales. In this market we have sales to report of 100 bales of greasy Cape at 18½c, and a lot of Australian greasy at 25c. In domestic wool we hear of 32c being paid for a lot of B super.

COAL—Scotch steam is quoted in cargo lots at $4.75@5.00, and Cape Breton at $3.80. There is little or no Pictou offering. Hard coal is steady, stove selling at $6 00 per ton of 2000 lbs. delivered and egg and chestnut at $5.75.

PRODUCE, ETC.—During the week there have been sharp advances in the price of wheat both here and in the West, No. 2 Canada red winter having been sold in the market at $1 43@1 44: No. 2 Canada spring at $1.40@1.41. No. 1 white Michigan at $1.40 and No 3 Toledo red winter at $1 36½@1.37. There has also been some trading in corn at 70c to 71c. Oats have been sold in car lots on the line at 38c per 34 lbs. The flour market has also been firm and a little more active, English as well as Quebec buyers having been in the field. Sales were reported yesterday of 4000 bbls of superior on export account at $6 35. Spring extra is scarce and wanted at quotations. Strong flour is very scarce and commands full prices. We quote as follows: Flour—Superior extra, $6.35@6.40; extra superfine, $6.35@6.30 spring extra, $6.05@6.15; superfine, $5.70@5.80: strong bakers', $6 25@7.00; fine, $4.90@5.15: middlings, $4 65@4.85; pollards, $4.30@4 45; Ontario bags, $2 90@3 00; city bags (delivered) $3.35@3 45. Meal—Oatmeal, per bbl, $4 90@5.00; cornmeal, $3 40@3 50.

PROVISIONS, ETC.—In mess pork there is still a very limited consumptive demand at $21.50@22, the high prices being a serious check to business. Lard is in small supply at the moment, and sales are reported at 15½@15¾c in pails for Fairbanks and 14½c in pails for city brands. Smoked hams are quiet but steady at 14@15c for choice brands. The egg market is steady at 16c per doz. Ashes rather easy at $5.20@5 30 per 100 lbs. for pots. We quote as follows: Mess pork, new, per bbl, $21 50 to $22; hams, city cured, per lb, 12c to 13c; hams, canvassed, per lb, 11c to 12c; lard, in pails, per lb, 12c to 13c; cheese, per lb, 12c to 13c, tallow, rendered lb, 6c to 6½c, tallow, rough, per lb to 4c, eggs, per doz fresh, 16c; pork per bbl, $5 20 to $5 25.

DAIRY PRODUCE—In butter we hear of an inquiry for choice grades dairy, and sales are reported of choice Townships at 22c, and 15c to do. at 21½c. 500 tubs Morrisburg at 21½c and a car of Western at 19½c. In cheese market has fluctuated considerably during the week in Liverpool, some fair transactions have taken place here. The Kelso factory has been sold for August at about 11½c, and today 800 boxes of July have changed hands at 10½c. We quote as follows: Butter—wholesale prices—Creamery, per lb, 23c to 24c. Townships, good to choice per lb, 21c to 22c. Morrisburg and district, per lb, 20c to 21½c, Western dairy, per lb, 18c to 19c. Cheese—Fine August, per lb, 11c to 11½c, fair qualities, 10½ to 10¾c, and per lb, 6½c to 7c.

Before the year 1729 mustard was little known, according to the *Grocers' Journal*, at English tables. About this time a old woman of the name of Clements residing in Durham, began to grind the seed in a mill, and to pass the flour through several processes necessary to free it from its husks. She kept the secret to herself for many years, during which she sold large quantities throughout the country, but especially in London. Here it was introduced to the royal table, where it received the approval of George I. From the circumstances of Mrs. Clements being a resident at Durham, it obtained the name of Durham mustard. The manufacture of mustard consisted in simply grinding the seed into a very fine flour; a bushel of seed, weighing 60 pounds, yielding 28 pounds to 30 pounds of flour of mustard. A false taste, however, arose for having an improved color, and the flour of mustard was introduced from which the oil had been abstracted. Hence other materials, such as capsicum powder, tumeric, terra alba, wheaten flour, etc., are added to bring the flavour and to increase the bulk.

MISCELLANEOUS.

THE PRESENT AND THE EX-PREMIER

A London correspondent writes: I am happy to say that Mr Mackenzie has benefited very much by his visit to the old country this stay in the Highlands was of very great service to him, and he now feels the strong again He has likewise spent some time in Glasgow and Edinburgh While the climate of the former city he was not enamored, and I do not recollect anyone met at any time any body who was, during a large part of Mr. Mackenzie's stay in the north rain fell more or less every day and no one came to the conclusion that a "horrid climate" In Glasgow I found a combination of soot, dust and rain, which would require one to carry umbrella and water all the time, while every resident must have a coating of soot in lungs and stomach. Nevertheless this change air, together with change of scene and the warm greetings of welcome he was everywhere received, have restored him to perfect health, and he sails in a few weeks time for "clear sky land," rehabilitated mentally and bodily.

I paid a visit to Sir John Macdonald at his villa at Norwood yesterday He leaves that pleasant suburban retreat for London in a few days almost completely restored to health; indeed he says that he feels, if the passage out next month is a favourable one, he will be quite robust again. Owing to the rapid improvement which took place in his health he has been able to enjoy his stay in England, and has with Lady Macdonald paid several visits to persons of political and social distinction. This week he returned from visiting Lord and Lady Rosebery at Montmore, their charming place in Hertfordshire. Here it was that Baron Meyer de Rothschild—the "racing Baron"—Lady Rosebery's father, ordered best to live, and here he built the stables and constructed the *haras* where most of his celebrated racehorse were bred. The Montmore estate formed part of the enormous property which Miss Hannah de Rothschild inherited on her father's decease a few years ago. It is a favourite residence with her and her husband sharing their regard with Dalmeny in the Lothians and the Durdans almost on the race course at Epsom This was the historic residence of the Heathcotes, the last of his race to live there belong the Old Squire," so famous in race course story. Lord Rosebery has appropriately filled the library with sporting books, and the house with sporting pictures and rare engravings. It is a frequent resort of Mr. Gladstone's during the session of Parliament from Saturday to Monday, when his disciple and *protege*, the new Under Secretary of the Home Office, dispenses a splendid hospitality to a congenial circle of friends invited to meet the Premier.

To return, however, to the subject of my note: Sir John Macdonald intends to spend the remaining days of his sojourn in England at his old quarters at Batt's Hotel, Piccadilly. He expresses his entire satisfaction at the treatment of his physician, Dr. Andrew Clarke, who has been most attentive and assiduous in aiming at a correct diagnosis and a successful result. He has tabulated a somewhat elaborate regimen in matters of diet and exercise, which Sir John has strictly adhered to during the period of his convalescence, and which he intends rigorously to pursue

NEW PATENTS AND TRADEMARKS.

TRADEMARKS.

No 8,570.—Whiskey—James M. O'Donnell, St. Louis, Mo. Application fyled July 7, 1881. "The Seal and the Ribbon"

No 8,571—Soap—Strunz & Wetzel, Pittsburg, Pa. Application fyled July 14, 1881. The word-symbol "Want"

No 8,572—Land and Land Oil—Coe & Harlaugh, Cleveland, Ohio. Application fyled April 16, 1881. The symbol or figure of a shield having a triangle stamped thereon"

No 8,570—Smoked, Dried or Cured Beef, Pork and Hams.—Calvin J. Comstock, Cleveland, Ohio Application fyled June 22, 1881. The statue as described and shown in the fac simile and the arbitrarily selected words "Forest City Brand."

No. 8,571—Oleomargarine—Renard & Ondeshoys, Baltimore, Md. Application fyled July 22, 1881. The letters "I X L"

No. 8,572.—Laundry and Toilet Soap.—Lautz Bros. & Co, Buffalo, N. Y. Application fyled June 7, 1881. The arbitrarily chosen word symbol "Palma"

No. 8,573.—Starch.—Messrs. Lautz Bros. & Co, Buffalo, N. Y. Application fyled June 7, 1881. The arbitrarily chosen and newly coined word symbol Malzeflora."

No 8,574—Starch.—Messrs Lautz Bros. & Co, Buffalo, N. Y. Application fyled June 7, 1881. "The pictorial representation of a female."

No. 8,575—Starch.—Messrs. Lautz Bros & Co, Buffalo, N. Y. Application fyled June 7, 1881. The arbitrarily selected word symbol "Niagara."

No. 8,577.—Lard.—G. Morris, Popham New York, N. Y Application fyled June 12, 1881 "The figure of the pig or hog"

No 8,580—Smoking Tobacco, Cigars, Cigarettes, Cheroots and Chewing Tobacco—P. W. Felgner & Son, Baltimore, Md Application fyled June 29, 1881. The word "Derby."

No. 8,581.—Smoking and Chewing Tobacco—Marburg Bros., Baltimore Md. Application fyled July 15, 1881 The fanciful denomination, "Moss Rose"

PATENTS.

No. 245,604—Cigarette Mouthpiece—A A Boutell, Windsor, Ontario, Canada.

No 245,704.—Fish Hatching Apparatus.—O M. Chase, Detroit, Michigan

No. 245,679.—Mould for Bundling Fish or Fish Flesh;—N. Webster, Gloucester, Mass.

No 245,681—Horse Collar—J. Jordan, Fort Edward, N Y

No 245,684—Fruit Jar—W. C. Doherty, Albany, Oregon

No 245,721—Fruit Jar—M Harris, Jamestown N Y

No 245,782—Smoker's Cabinet—D J. Wilcox

No 245,743—Matching Sweating and Colouring Tobacco—C. S. Phillippe, Brooklyn N Y

No 245,750—Plug Tobacco Mill—W W. Wood Winston, North Carolina

THE TELEGRAPH ARRANGEMENT.

(From the Montreal Herald, Aug. 19th.)

We suppose no well-informed person could be surprised at the result of the meeting of the shareholders of the Montreal Telegraph Company the day before yesterday. For reasons which will doubtless be well understood, and which we need not further allude to, we have said little so far on the subject of the arrangement, which was completed on Wednesday. Now that the agreement is signed, however, it may be well to remark that, while the ordinary public—we are afraid the newspaper part of the public must be excepted here—will lose little or nothing in the long run, the stockholders (meaning those who are steady holders for investment) will save a property which, but for this arrangement, was exposed to great risk. As to the public, the restriction of rates to twenty-five cents per message will keep Canadian telegraphy, as it has long been, the very cheapest in the world. That is the cost of an English message. It is true that the English message may consist of twenty words, but how rarely it is that ten words do not suffice? The true way, however, to look at the matter is in relation to the cost of telegraphy in the two countries. To reach the 4,000,000 of people of Quebec and Ontario, wires must be laid for more than a thousand miles from west to east, besides all the cross roads, so to speak, leading off from the main branches. In England, the telegraphy of 4,000,000 in London alone can be done by wires crossing a circle of not more than about twenty-five miles in diameter. Similar proportions obtain as to offices. The fact is, considering distances and population, which are the true tests of the costs of telegraphing, the public in England pay three or four times more, proportionally, than Canadians will do for the same service, even at 25 cents per message. Besides this, the English receipts have so far been supplemented out of the taxes, in order to pay expenses; and a few months ago we read a correspondence in the newspapers complaining that there were only some three or four offices in London at which ordinary messages could be despatched after 8 o'clock at night, and only a few towns where they could be delivered between that time and eight in the morning. Except in the way of taxes, which some profess to like better in proportion as they are heavy, no one wants to pay more than he can help for necessary service. It is, therefore, natural that an arrangement involving the probable raising of rates should not be popular, even though the increased rate should still be relatively to work done the lowest in the world. But those who feel thus may be consoled by reflecting, that if not by this plan, yet by some plan, the old rates were sure to be restored before long, by agreement between the companies, because taking them both together, it was very doubtful if they could keep the lines in first-rate order and make the necessary additions from time to time in unprofitable neighbourhoods at the existing rate, so closely did the cost of each message follow up the charge of it. That, however, was a matter for the Government, as the representatives of the public, to consider. Our own impression is that the public, in one way or another, would pay a great deal more for telegraphy, worse managed than now, if the business were in the hands of the Government. Be that as it may, the company, so far from throwing any obstacles in the way of the assumption by the public of their lines, called the attention of the Government to the project just consummated, before it would enter into serious negotiations for carrying it out. It could do no more for the public than it has done, and it was under no obligation, except one of good feeling, to do so much, as every body is aware that the public will use its lines only so long as it gets its business transacted in a satisfactory manner, at a price as low as can be elsewhere obtained. The true question at the meeting on Wednesday was, however, evidently one affecting the interests of the stock, and that only. There are, of course, stockholders; and it is easy to understand that a stockholder with one or two shares and a large telegraph correspondence might be content to sacrifice his trifling dividend for the sake of saving five cents a message. Again, if a gentleman had bought largely of the stock when it was quoted low down the nineties and had sold again at his nominal holding, when the expectation of this coming arrangement had put it up to 30 premium, or thereabouts, with $12,000 or $14,000 profit and his original capital back in his pocket, he might, without loss and much patriotic enjoyment, see other people's property cut down to 40, 50 or 60 cents on the dollar, having the pleasure of knowing that the property was still in Canadian hands, and the loss falling on Canadian pockets. Then when the stock had got low enough for Americans to come in and purchase the control, such a stockholder would, if patriotism, indeed, did not stand in the way, be in an excellent position to come in again with them, and await the chapter of accidents to once more add 50 or 100 per cent. to the value of his holding. Those who had the management of the negotiations in the first instance, however had no right in conscience to consider the case of that class of stockholders, even though it would, perhaps, have been possible for them to see a way to their own advantage in it. Large holders and "operators," as they are called, can protect themselves, and, though they sometimes make mistakes, it is they who, as a class, make fortunes out of fluctuations in stock which freeze out the poorer, more timid, and less mysterious holders. If it could ever be the duty of directors to discriminate between classes of stockholders, instead of regarding the stock as apart from persons, it is this class, holders of from ten to one hundred, or one hundred and fifty shares, for whom they would be bound especially to care persons who know little of transactions in stocks, but who have sought a secure investment, and who, during the year or two of no dividends, in which riches and more intermittent stockholders are contentedly lying by waiting their chance, with their past profits realized, ready to deal again, are one after another frightened into selling out. There can be no doubt that the new arrangement is calculated to give investors what they seek, instead of exposing them almost to the certainty of seeing their property valueless for a year or two, with the bare possibility that, in the revolution of time, some new and more profitable combination may again be hit upon We may, perhaps, say one word here about the Western Union. That company has been for a great many years the ally of the Montreal Company so far as we have ever heard, with the mutual satisfaction which arises from good offices rendered and received. The Western Union, however, for purposes in which Canadian companies and Canadian telegraphy could have entered, if at all, in an infinitesimal degree, found themselves obliged to coalesce with the American Union. As an incident of that amalgamation, and out of no hostility to the Montreal Company, they became the owners of the lease which the Dominion Company had made to the American Union, *en passant* it may be said without one patriotic outcry against it from Canadians lately so jealous of American leases Could they be greatly blamed if, instead of giving the Montreal Company all the business they could control, they "christened their own child first," and did upon their own Canadian line about all the business it was capable of? We think not. And it was that situation and the complications to which it was sure to give rise, including a probable war to the knife, waged for Canadian as well as for International business, which forced the hands of the Montreal Company. It is not necessary to say the Western Union Company with any attributes of extreme benevolence to account for the offer they made. We suppose they and their friends see money in what they are doing But it is not unreasonable, on the contrary, it is highly just to say, that when a high-handed and cut-throat policy was clearly open to them, with the prospect of profit, they adopted a policy of wise moderation, in which it is probable that they were partly swayed by good feeling for an old friend, by circumstances beyond the control of either party likely to become an opponent. What might have happened can, of course, only be conjectured, but it is obvious that, with a capital of eighty millions and wires running all through Canada, the Western Union might, at a very small relative loss, have completely destroyed the dividend earning power of the Montreal Company, and might then have come in and purchased the stock at a song, making the line as American as it will be now, but at the loss of many hundreds of thousands to Canadians individually.

CANADA PACIFIC RAILWAY.

(Montreal Gazette, August 31st.)

Yesterday (Tuesday) a meeting of the Board of Directors of the Canada Pacific Railway Company was held at the head office in this city. The important business transacted had relation to the issue of the land bonds, in accordance with the Act of incorporation The contract for the sale of twenty millions of dollars of the company's 5 per cent land grant gold bonds was duly executed, and the Board instructed the President and Secretary to execute the mortgage as authorized at the meeting of shareholders held in Winnipeg on the 19th of July last. The mortgage securing the bonds is made in favour of the Hon Sir Alexander Campbell, the Hon. Alexander Mackenzie, M.P., and Mr. Samuel Toorne, of New York, who are constituted the trustees The name of Mr. Mackenzie as one of these trustees, will doubtless be a surprise to some of our readers; but a moment's thought will convince the public that Mr. Mackenzie's having consented to act in this capacity is a matter for sincere congratulation. One of the advantages, and certainly not the least among the many advantages of the contract recently made between the Government and the Syndicate is, that it removes this great public work from the arena of party politics, and the *personnel* of the trust will assuredly tend to confirm the public satisfaction at this result.

The issue of these bonds marks a most important epoch in the progress of this great enterprise, and the success which has attended the disposal of the first half of the issue at the respectable figure of ninety-two and a half, is an evidence of the public confidence, not only in the enterprise itself, but in the men who have control of it, and the principles upon which the contract has been entered into The progress made already in the work of actual construction is simply marvellous when compared with the progress of the previous seven years under Government control and direction There is every assurance that this year four hundred miles of railway west of the Red River, will be constructed ready for traffic, by the Syndicate; and the intention is that next year the line will be extended to the eastern slope of the Rocky Mountains, that is eight hundred miles from Winnipeg. The company are not only building the road rapidly; they are building it substantially and well, thus giving evidence of their *bona fides* in entering into a contract not simply to build, but to operate the line after it is built. One of the strongest objections urged against the contract was that it permitted the construction of a flimsy, insufficient railway, which, being built and the subsidies obtained for it, the company would abandon, leaving to the Government the task of reconstructing it, before it could be safely or economically worked. That objection is meeting its refutation in the most authentic form. Not only is it not true that the company are building a flimsy road, but it is a fact that they are actually rebuilding that portion of the Government road west of Red River, making it a much stronger and better line than that proposed by the Government within the last estimates of Mr Sandford Fleming, which Mr Blake is still using to show how profitable the work of construction is going to be to the Syndicate

Another feature of the work which the Syndicate are performing is the construction of branches, for which they receive no subsidies from the Government, and which must therefore be added to the main line in determining the extent of those subsidies It has been a favourite argument with Mr Blake and his friends that the subsidies given for the prairie section are more than sufficient to build that section, leaving to the company a road costing nothing The best answer to this is that the lines they have already resolved to construct at once, are greater in length than the figures named in the contract as the central section There is a branch from Winnipeg running towards the boundary, and then westward to the Pembina Mountains There is another branch from the main line, at the Assiniboine, running southwesterly into the Souris region. There is another branch running from the main line east of the Assiniboine, crossing through Rapid City to the Touchwood Hills, and there is a fourth branch, running from Grand Forks, near the Qu'Appelle, to Fort Edmonton. These branches make altogether 1,050 miles, or if, as is suggested, the branch to the Pembina Mountains be extended to connect with that to the Souris, 1,135 miles. So that in estimating the mileage of railway to be constructed in the prairie region, and the relation which the subsidies given to the central section bear to it, we have to take two thousand miles, and not simply nine hundred, as is named in the contract And this, it should be remembered, is independent of the Sault Ste. Marie branch, the contracts for which are about to be let by the company, to be constructed without any additional subsidy from the Government. Never was policy more signally or more swiftly vindicated by its results than has been the policy of the Government in making a contract with the present company for the construction of the Canada Pacific Railway.

NEW IRON COMPANY.

An iron company has been formed of New York capitalists, who have leased for a term of years the property of Mr. J. P Lawless, Ottawa, north of the old Baldwin iron mine, and who intend shipping their ore to Pittsburg, Pa. The machinery will be here next week, and operations will commence immediately thereafter. The machinery will cost $12,000, and employment will be given at the start to fifty men. The company pay a royalty of 40c on each ton of ore, which has been fully tested and found to produce the most satisfactory results Captain Symmons, the well known manager of Col Robbins' mine, has been offered a similar position with the new company, and in all probability he will accept.—*Citizen*

VALUABLE TO SHIPPERS OF FRUIT.

Carbonized bran proves so preservative of green fruit in long transits that next year's overland consignments will be largely increased, writes the California correspondent of the *Baltimore Sun*. Horticulture doesn't pay in the home market. Middlemen, by tricks of combination, get all the profit, and canners allow no profit on the surplus that fails to them. But our fruits ripen so early that if they reach the eastern market in good condition they pay largely. Hitherto, deductions for spoiled fruits have been an appreciable drawback. Experimental ventures with fruit packed in carbonized bran this season show no losses from this source The fruit went by fast freight as usual, which is necessarily high. So well satisfied is the inventor, that now he is sending by slow freight which is half price If this will do, it will so cheapen fruit in eastern cities that the consumption will greatly increase, and fruit culture will be a leading industry in California. In size and in weight of production, the world outside may be challenged to match our pears and plums, figs, apricots, nectarines and pomegranates The same antiseptic packing will serve eastern fruits in transit to Liverpool, and Florida oranges may be allowed to ripen before being packed for transport, which would give them double value over green, picked fruit. It is expected that grapes embodied in wheat bran charcoal will keep fresh and plump all winter, without perceptible loss of flavour.

THE ADULTERATION OF SUGAR.

In England as well as in this country the subject of food adulteration is attracting uncommon attention, and legislation has been called upon to assist in protecting the innocent consumer, upon whom countless frauds have been committed. Many of the staple articles of food, such as milk, butter and flour, were found by a recent analysis to contain an average of over 15 per cent. of adulteration. In some cases the foreign matter was found to be merely harmless, but in many more cases the adulterants were noxious and highly injurious to health.

The most extensive adulterations practised in this country are those which affect a prime necessity of rich and poor alike—sugar. It is a fact not widely known that the sugar interest of the United States ranks first in importance and extent of all departments of commerce, and, of the entire imports into the States, one-sixth in bulk and value is sugar.

These broad facts indicate the vastness of the sugar consumption and the fact that sugar enters into nearly all forms of infants food that are used as substitutes for their mothers' milk is a cogent reason why dangerous adulterations of sugar should be prevented

All laws that have been devised prove practically inoperative, so far as protecting the consumer who buys in small quantities, for though the refiner who makes a business of adulterating sugar may be required to label his packages "New Process," or even name the deleterious substances with which pure sugar is debased, still the consumer rarely sees the original package, or, if he does is unlikely to examine it closely. The principal substance used in the debasement of sugar is starch made from corn, commonly known as glucose, which, although not as harmful as many other substances with which sugars are adulterated is still comparatively worthless in saccharine power, and, therefore, fraudulent when offered as sugar But the danger of putting into the delicate stomachs of infants sugar that is contaminated with muriatic acid, muriate of tin, or other harmful substances, cannot be exaggerated, and the use of "New Process" sugars should be discouraged by all reputable dealers, and with greater emphasis by consumers, who can demand sugars that are known to be pure *New York Times*.

DISTRIBUTION OF AMERICAN FARM PRODUCTS IN ENGLAND.

A recent report to the State Department, by Vice-Consul Doyle, of Manchester, contains the following information and advice, which we give in full, as it may greatly benefit our producers

I have frequently called attention in my annual reports to the losses which fall on American producers through the imperfect way in which our farm products reach the English consumers. Only very recently a large cotton manufacturer informed me that he had just furnished a firm in his town with 300 pieces of cotton cloth for making coverings for American hams; and his firm was one of several that supplied this material. These hams come from the United States, and on reaching England are done up in English style and sold as English hams at a sharp advance. This is done with our cheese as well. Then, too, the English system of supplying retail dealers should be carefully studied and a more direct and comprehensive way of reaching these agencies should be adopted. Partnerships should be formed between American and English produce dealers, much the same as English houses now combine with the foreign trade in many parts of the world for the supply and sale of manufactured goods of various kinds The advantages to be derived from a proper system of distributing our farm products in English markets cannot well be over estimated. Under right management and with cheap and quick transit, which the excellent steamship lines between American and English ports now furnish, our surplus food supplies could be placed in the hands of retail and central distributing dealers without the delay and expense now named by "middlemen" and thus secure to our people a largely increased price

At present the hap-hazard way of disposing of perishable articles, such as apples, potatoes, etc., in England renders their shipment to this country more of a hazardous venture than a safe business operation. Such shipments might and should be made under better methods of disposing of them after they arrive Now these articles of food are largely sold at auction at the port of arrival, and the result is that they vary in price from day to day out of all proportions to the needs and natural demands of English consumers.

Action is being taken by the shipping firms of the port of London and by the authorities of riverside parishes to call the attention of the House of Commons to the necessity of relieving the Thames of the sewerage of London. Grievous complaints are made of the condition of the river.

Canadian leather is growing more popular Still it seems strange that the hides of beeves exported to England from the Dominion and the United States should come back here and be converted into leather. American sole leather has taken a foremost place. The fact that the price of bark, the essential of tanning, is about ten times greater in England, is no doubt the secret. The leather exports from this continent to Europe reach upwards of $12,000,000 This trade is illustrative of commercial possibilities.

Welland, Aug. 25.—The Corporation of Welland has sent a delegation to Ottawa to interview the Minister of Public Works in order to secure a water power by extending a cut from the Feeder to the Welland River. The expense is estimated at $6,000. The cut will be about one mile in length and will secure a fall of eighteen feet. The whole volume of water in the Grand River will no doubt be available for hydraulic purposes, and the improved water wheels used at present will render the water power of the Grand River practically unlimited. The necessity of closing the mills on the summit level for several months during the fall in order to supply the Welland Canal does not now exist.

SCIENTIFIC AND PRACTICAL.

APPARATUS FOR THE PREVENTION OF SMOKE

Mr J C Lee, before the Society of Engineers, gave the following description of a simple apparatus for the prevention of smoke. The first principle underlying the construction of such devices must be not to allow the cold air to come in contact with the gases arising from green coals, and for this purpose the furnace is, so to speak, divided into two parts. The fire door is removed from the boiler, and a box fixed on in front. On each side of this box rails are placed inside, on which a plate or shutter must rest, which can be pushed forward or backward as required. When pushed forward it passes within the boiler and drops over the fire bars some 18 inches, thereby cutting off the draft and preventing the condensation of the gases arising when fresh coals are put on, thus preventing smoke and the cooling of the boiler.

A still more simple apparatus can be made with the same results if the opening or flue will admit a higher box. The shutters can be cast together in one piece at an angle of about 130 degrees, to hang within the box on two pins or bolts, thus forming a swinging shutter. A rack is attached to the front of the shutter to regulate the movement. The advantage of this apparatus are: The cooling of the boiler is entirely avoided, the gases are consumed so that smoke is prevented, and there is a saving of from 15 to 20 per cent. of heat and coal.

In ordinary open fire grates the same object is attained, viz: the prevention of the cold air from coming into contact with the green coal, by removing the fire lump and substituting for it a cast iron box, which stands out at the back and is open in front only, and which is filled with coal. Within this box is a moveable iron plate, which can be forced forward, carrying with it the coals from which the gases have been extracted and consumed by the heat in front, or moved backwards when the box wants refilling. To regulate the draft so that the fire burns brightly in front, a plate is fixed under the grate, coming forward at the bottom. Another plate, resting on plus, is placed on the top of the box to prevent the flame entering the register. By this simple apparatus a bright fire is maintained in front of the grate, half of the heat usually escaping into the chimney is saved, there is little or no smoke, and the smallest coal can be used, and is, indeed preferable. In kitchen ranges, stoves and vertical boilers, a similar box to the foregoing can be affixed, the moveable plate being worked by a lever.

This apparatus can easily be applied to locomotives. A box is placed under the foot plate the whole width of the fire grate, and the coals put in from the top. By this means the gases are almost entirely drawn out of the coal and consumed, the result being that there is very little, if any, smoke. To supply the grate, the coal is pushed forward by a movable plate and lever.

HOW TO DEFINE THE SPIRAL IN FLUTED ROLLS

(Extracts from Chordal's Letters in American Machinist.)

In my last letter I referred to the spiral flutes in grinding rolls, and stated that some way of describing the spiral which would at once convey intelligence to the miller who wants the spiral flute and to the machinest who cuts the spiral flute would be found useful when millers begin to get as particular about roll dresses as they are about stone dresses.

A miller orders "fluted rolls, eight inches diameter, two feet long, fluted with V-shaped teeth, twenty to the inch, flutes to be cut spiral twenty degrees, same direction of spiral on each roll." Now, what does this miller mean by "cut spiral twenty degrees." Nobody knows but the miller who gave the order. You ask him what he means, and he says he means simply what he says; that there is to be a divergence of twenty degrees between the spiral flutes and a line representing a straight flute. You understand this well enough, and go ahead with the fluting.

Pretty soon you get an order from another miller—flutes to be cut spiral twenty degrees. You ask him what he means, and he says he means what he says; the flutes are to twist twenty degrees of the roll circle in the length of the roll. You understand this and go ahead with the fluting.

The next man orders a roll cut with a spiral of ten feet pitch. You understand this without questioning, and go ahead with the fluting. The next order specifies the flutes to be spiral two inches in the length of the roll. This is easily understood. Next comes an order: flutes to be spiral one inch and a half to the foot. This is easily understood. Another wants the flute to twist the width of ten flutes in going the length of the roll.

Here are several common methods of defining the degree of spirality, some sufficient in themselves, some requiring explanation.

A spiral is a line traced upon a revolving cylinder by a longitudinally progressive point. For examples we have the thread of a common screw, the periphery of a propeller blade, the rifle of a gun, the groove in a twist drill, spiral spring, and the teeth of helical gearing.

The degree of spirality of a screw thread is always indicated by the distance progressed during one revolution, properly mentioned as the "pitch" of the thread, as a tenth of an pitch, or, in the language of the shop, as "ten to an inch." A certain very ignorant class speak of a "number ten tap."

The word "pitch" is not intelligibly understood by many shopmen when used to express distance between points. We have the pitch of threads, the pitch of rivets, the pitch of joist, the pitch of gear teeth. Let it be considered that something is to be moved a distance by means of a succession of short tosses or pitches, and the applicability of the word will at once appear.

We always define a screw thread by its pitch, but in certain cases there is a chance for misunderstanding. A square thread of a quarter inch pitch, or four to the inch is to be cut on a half inch bar. Such a thread would call for a groove one-eighth inch, wide, cut one-eighth inch deep. This would cut the bar half in two and leave but a weak central core.

To get a stronger core, while retaining the same pitch of thread, resort is had to cutting a groove a sixteenth wide and deep, and then cutting a similar groove between the ones just formed. This gives the "double thread screw," which has no peculiar properties, except that due to a shallow thread.

In some rare cases circumstances may force us to cut a triple or even a quadruple thread when, if the piece would be strong enough, we would cut but a single one, the pitch being the same under all circumstances.

Now the question arises: What is the pitch of such a double threaded arrangement? The pitch of the spiral is, of course, a quarter of an inch, but the pitch of the thread is obviously an eight of an inch. The spiral is four to the inch, the threads are eight to the inch.

Machine tool shops deal considerably with double and triple threads. All machine tool shops use drawings and systems and what not. I do not know what the general practice is in such shops when they come to drawings of such screws. In my own practice on such work I have written on the drawing "Double square thread—three to the inch." I never knew of any trouble from such drawing, but I saw that the matter was helped by the existence of certain taps which such screws were to suit. In view of new sizes, I changed to "Square thread—three to the inch—cut double." This didn't look right, and after a while I changed to: "One-third of an inch pitch—cut double—square thread." I can't see that this is any better. I wanted a spiral of a third of an inch pitch, and, so far as the above specifications are concerned, a workman is justified in cutting the spiral one and a half-inch pitch, which is not what I wanted, but is just what I called for, viz: a thread three to the inch, or one-third inch pitch.

I have never heard of any trouble in regard to such matters, and for that reason I never supposed anyone contrived a brief and simple expression which would cover the ground with certainty. I have no suggestions to offer, as the subject might be a useful one for discussion among your practical correspondents.

The propeller screw of a vessel is simply a very short section of a two or three or four threaded screw, and its degree of spirality is always expressed as the pitch of one of the threads.

The degree of spirality in rifling is expressed by inches pitch of the twist, thus: "twenty-two inch twist." In some rifling the twist starts easy and gets quicker toward the muzzle of the gun. This is called a "gain twist," and its degree at each terminal of a length must be given, the twist always being defined by its pitch.

In the Morse twist drills the spiral, commencing at the drill point, gets less in degree towards the shank. They call this an "increase twist," the propriety of which expression depends largely upon which end of the drill you commence to talk about first. The degree of this increased twist is expressed the same as in rifling, that is by the pitch of a given length.

When the spirality of a wire spring is defined, which is but seldom, it is generally done by specifying the diameter of the wire, and the space between coils. These added together would determine the pitch, but the spring maker don't think pitch at all. He simply takes the specified size of wire, and winds it with the specified space between. Very small springs are spoken of as so many turns to the inch.

In helical gearing, a rarely used device for transmitting rotary motion between two shafts not parallel, and not in the same plane, the spirality of the teeth is defined by the pitch of the spiral.

The worming of feed rolls in fabric mills, by winding a tape upon them, is generally described by giving the width of tape and the distance between turns.

Let it be noticed that the only use ever found for the thread of a screw is to produce longitudinal motion during rotation. All we want to know is how far something will move during one revolution. The pitch of the spiral thread tells us this at once. We can think pitch and think intelligently. In a propeller screw we have the same conditions. The pitch gives us an idea at once of the advance per revolution. In the rifle we have the same conditions reversed. The pitch of the rifle tells how far we must travel to produce one revolution. The word pitch conveys the idea at once. In spiral springs we deal with new conditions. Nothing revolves, and we don't care what the pitch is, except for purposes of measuring. To say that a spiral spring has a half inch pitch would convey no idea of any quality of the spring to our minds. The spirality of a spring is not a functional quality of a spring and is secondary in every way.

All spiral cutting machines are adjustable with reference to the pitch of the spiral, just like screw cutting engine lathe. The gear tables are arranged in the same manner and tell us what gears to put on for certain pitches of spiral.

The pitch seems to be the essential quality measurable in a spiral. It becomes the proper handle to take hold of. It tells us what the spiral will do, and it tells the spiral maker at once what is wanted. The pitch of a spiral is independent of any other quality. When we think of a spiral we think of its advance during rotation—we think pitch. These facts might lead us to ask—why, in the name of common sense, the grist mill man can't tell us the pitch of the spiral flutes and be done with it?

The pitch of the spiral of a mill roll is no more a quality than in a spiral spring. The mill man don't care about the pitch—don't think pitch—he thinks of the angle of the flute caused by its spirality. Diameter does not affect the pitch of a spiral, but it does affect the angle. It is with this angularity that the mill man has to do, and we can at once see why he cannot think in pitches.

Our school books tell us that a screw is simply a rotary wedge—an inclined plane wrapped around a cylinder. They explain to us how we gain advantage by wedges, etc.

To return to the mill rolls. Let the mill man determine on the angle he wants, on the diameter of the roll, etc., and then figure out the pitch of the spiral. There are easy ways of doing it, and much trouble and time can be saved by doing it.

ADULTERATION OF LUBRICATING OILS.

Now that the various hydrocarbon oils obtained by the distillation of petroleum, bituminous shale and common resin are being extensively used for lubricating purposes, manufacturers and engineers have become interested in any additions to a knowledge of these bodies. It is well known that the heavy hydrocarbons which constitute the various lubricating oils derived from resin and mineral sources differ from the oils of animal and vegetable origin in the fact that they are incapable of saponification. By the chemist, the term saponification is employed to indicate a process by which a fixed oil or fact reacts with the elements of water to form a fatty acid and glycerine or some allied body. This process of decomposition is still called saponification, whether the change be effected by treating the oil with a fixed alkali, as in soap making; by the action of lime or litharge, as in the preparation of diachylon plaster; by sulphuric acid; or by the action of superheated steam, as in the widely practised method of preparing stearine and glycerine. The tendency of animal and vegetable fat oils to split up into fatty acids and glycerine under the influence of superheated steam is a point of considerable practical importance where such oils are used for lubricating engine cylinders and under similar conditions, as the resultant fatty acids exercise a serious corrosive action on the metal with which they necessarily come in contact. It is not too much to say that for uses involving the contact of the oil with superheated steam animal and vegetable oils are wholly unsuited, and should be replaced by the hydrocarbon oils. For many other purposes, however, the fat oils are by far the most suitable, and, for some, indispensable. Unfortunately, owing to the comparatively low price of hydrocarbon oils, they are now extensively employed for the adulteration of fat oils, with the not unfrequent effect that the resultant mixtures are wholly unfitted for the purposes for which they were intended to be used. As an instance in point may be mentioned the adulteration of the olein used in spinning wool with various hydrocarbon oils. Such sophisticated oil is but very imperfectly saponifiable, and hence its subsequent removal from the wool is attended with great difficulty, whereas a genuine olein can be washed out with facility. So great has the evil become that manufacturers have been compelled to submit samples of oils they intended purchasing to professional chemists, with the view of ascertaining their freedom from admixtures of hydrocarbon oils. Unfortunately, this precaution has not always resulted satisfactorily, for the results of the chemists consulted have often presented wide discrepancies, variations of 30 per cent. in the proportion of mineral oil stated to be present being not uncommon.

These differences are due to the very great difficulty which exists, or has hitherto existed, in making an accurate quantitative analysis of mixtures of different kinds of oil; for although the fat oils are distinguished by their property of forming soaps, the product obtained by treating them with alkalies is capable of dissolving large quantities of the hydrocarbon oils. To separate the unaltered mineral or resin oil from the soap in such a manner as to render the process quantitatively accurate has been a problem which has engaged the attention of several chemists, and the imperfect solution of it is the explanation of the discrepancies already referred to as commonly occurring between the reports of different chemists having such matters submitted to them. Under the circumstances it is satisfactory to find that the problem has been solved in what is apparently a simple and accurate manner by Messrs A H Allen, of Sheffield, and Wm Thomson, of Manchester, whose results were communicated in a paper recently read before the Chemical Society, "On the Action of Solvents on Saponified Fatty Oils and Waxes." The authors describe in detail a large number of experiments, and point out the numerous pitfalls into which the inexperienced analyst is apt to fall. In conclusion they cite the results yielded by a number of fat oils from shale, petroleum and resin, and they show that by their method of working it is possible to obtain accurate quantitative results from the most diverse mixtures. Their process appears to be of a very extended applicability, solving in a simple and accurate manner the vexed question of the determination of paraffine in stearine candles. Not the least interesting observation is that sperm oil differs from all other animal and vegetable oils examined in not yielding glycerine by its saponification. This fact may not improbably be made available for the recognition and determination of adulterants in sperm oil. Probably there is no class of products so much tampered with by unacknowledged admixtures as the oils, and we hail with satisfaction any advance which may be made in the means of discovering such illicit practices. Those manufacturers and engineers who value their machinery only require to have the importance of the matter pointed out to take steps to remedy what is at present a widespread evil.—*Iron Age.*

THE FUTURE OF ELECTRICITY.

The remark is common enough in the mouths of the common people as well as of the scientists that the future developments of electricity, as an applied art, have been as yet only dimly foreshadowed. It is the modern miracle worker, and after the telegraph, the telephone and the phonograph the world is very ready to receive with credence any statement of the wonderful things yet to come. The fairs which Boston is to have this fall will give us a clear idea of the progress of the last few years, and this department will not be equalled in the amount of interest shown in it by any other in the exhibitions. Meanwhile, in the French capital preparations are going forward for an exhibition to be held in the coming fall to be devoted entirely to electricity and its applications. It will give brilliant illustrations of the present condition of the science, and prefigure the progress to be looked for in the near future. The exhibition will be held in the Palais de l'Industrie, to which visitors will be carried on an electric railway. The trains will consist of two saloon carriages, and an electric motor which will take from the rails the fluid supplied by generators at the end of the line. In the centre of the Palais will be a small pond in which a steamer will lay a submarine cable.

In the basement of the building will be illustrated all varieties of such cable and wire manufacture, adjoining but not forming part of the official portion of the exhibition, which will comprise all forms of Government electric apparatus, manipulators, receivers, piles, telegraph posts, insulators, switches, and a thousand other matters of necessary detail in the complicated system of commercial or military telegraphy. Towering above the building will be an immense lighthouse carrying a light of great power. By daylight the visitors to the exhibition will watch the operations of a whole army of telegraphists, machinists, etc., while at night this swarm of operatives will be visible under the glare of a thousand electric lights streaming from the roof. It is intended to include among the illuminators every known burner, and a score or more are now known.

Among the "inevitables" of the exhibition we may look for fire alarms, electric dials, municipal and police calls, etc. The railroad companies will show their signal systems, electric brakes and alarms, and a new carriage for registering the velocity of trains, force of wind, consumption of steam, etc. The upper story has been devoted to scientific curiosities and fanciful inventions for the delectation of the curious but untechnical observer. Telephones will be connected with the theatres and the operas, and the visitor to the exhibition will be allowed to hear the utterances and the music at any or all of the places. Connection by telephone will also be made with distant cities. Next will come a series of eight rooms, literal copies of a Parisian apartment of the present day, where everything will be, so to speak, run by electricity. The kitchen will be lighted by electric lamps, the range heated by electric currents passing through water; a half dozen cooks, by means of incandescent platinum wires, will turn out waffles and cakes, and electrically heated metallic plates will serve for braziers and chafing dishes. The dining room will be fitted out with all the wondrous new apparatus which already threatens our peaceful firesides with its novel blending of science and comfort. The central sunlight, in place of a chandelier, can be lighted by the pressure of a button or the opening of a door. The dishes will be brought up on an electric dumb waiter. The only thing left to do would seem to be to eat by electricity, and, in view of the wonders accomplished, even that seems not so very improbable. The parlour will be furnished with [illegible] will be going by electricity, [illegible] with electrical [illegible] these telephones, [illegible] In the billiard room an electric [illegible] will enable a player to [illegible] cue, at least to mark them by electrical indicator. The bedrooms [illegible] sides all sorts of electrical [illegible] have electric hair brush[es], [illegible] made to dress the hair in a [illegible] pressing a button attached to [illegible] atus. Finally, a room will be [illegible] electric [illegible]. Inventions and [illegible] miniature telegraphic apparatus [illegible] boxes, magic lanterns, railways, dolls and automata for the amusement of children. All this strange as it may seem, is an actual fact, or will be very soon. Applications for space have been pouring in, and the lists are now closed. The exhibition will be educational besides being very unique.

OVERHEAD HEATING

The system of overhead heating manufactories and mills by means of steam pipes is being very generally adopted in New England, and is recommended by the insurance companies. The first objection usually made is that heat rises, but in point of fact, the connection of heat from pipes is by radiation, and does not follow special direction either upward or downward under the usual conditions of a factory. It is simply a question of diffusion, and the best place for the pipe is where the radiation or diffusion is effected in the best manner. One of the greatest dangers to which factory buildings are exposed, and one of the heaviest causes of loss, is the collection of combustible matter on steam pipes, where they are ordinarily placed at the sides of the rooms under the windows. Mr Edward Atkinson, president of the Boston Manufacturers' Mutual Fire Insurance Company, recently addressed a circular to the managers of fifty-two mills where this system is employed, asking a number of questions to draw from them the results of their experience with the overhead pipes, and received forty-two answers. Out of the forty-two replies two were unfavourable, two were unfavourable, but were qualified by statements that showed their apparatus to be poor, one was favourable with exceptions, and thirty-seven were absolutely favourable. In respect to economy in heating the answers varied from nothing to twenty-five per cent saved, and the greatest saving was shown where the pipes were away from the wood and brick work, and therefore lost nothing by having the heat conducted away. Among the mills which sent favourable answers are many of the largest in the country, and they do not speak until they have thoroughly tested the system. The coils of pipe are generally placed about two feet from the ceiling on hanging brackets from the beams, and one and one-fourth inch pipe is the best adapted for the purpose. In addition to the safety from fire, there is the economy of space, and every inch of floor space is available. The system is one that should commend itself to those who are engaged in the manufacture of inflammable articles.

MISUSE OF MECHANICAL TERMS

It is amusing and vexatious to the intelligent mechanic to see how plain mechanical terms are misused and misplaced in the daily and weekly press. It is not often that the reporter of a daily paper denotes the difference in his report between a "cam" and "wiper," between a "plunger" and a "piston," between a "cylinder" and a "case," between "flues" and "tubes," between "piston" and "valve," between "pitman" and "connecting-bar," between "thread" and "screw," between "shaft" and "spindle," and a lot of other popularly considered synonyms. But this is not so much the fault of the general reporter as that of the mechanic, who allows changes of nomenclature to make his business mysterious, when it should be perfectly plain.

Our mechanical nomenclature is greatly deficient in exactness. There is no sensible reason why names of parts of a machine should not be uniform in the language. Of course, it is not to be expected that a German, and a Frenchman, and an English speaking American should use the same term in speaking of the same part of a machine, but there is no reason why the people using the same language should not employ the same terms in speaking of the same well known parts of a machine. There should be gotten up a dictionary of technical—shop—terms in English, that should be comprehensive enough to meet the wants and secure the approbation of intelligent mechanics. We go far enough in the fact, but we do not move at all in the word. What is the use of calling a cylindrical shaft at one time a "shaft," at another time an "arbor," at another time a "spindle," at another time a "mandrill?" It is the same thing at all times, only it may be used for one purpose or another, or in one position or another. Why should a "reamer" be called so in one instances and be called a "broatch" in another? It can hardly be because one is larger than another, for there are great variations in the size of both. What writer on mechanics has decided the proper orthography of the top part of a machinist's hammer? Some call it the "pane," some write it "peue," and some "peane." We have "drift pin" and "tamp pin," meaning the same thing. Some mechanics do not know what a

...and Love to Richmond" name... the monkey wrench ... wrench has nothing ... with the Simon fish. But take it ... Buckshank. Here ... Jaw ... In this case we can trace the ... what stage of the Latin ... to denote a straight cylin... It may be the Latin ... suggested the other end of the ma... trimmer, one capable of cutting ... Buckshank, as being sharp or ... What is something. In ... that looms going in a ... the nearest we get to it is ... shaft, or arrow. The term ... possible, because of the ... of an arrow but how about ... on its own axis? Perhaps ... might be permitted because of ... of a father and mother on its ... during its flight. But it is hard to ... from the Latin tree. ... may come from the old spinning ... that by hand rotated on its own ... and man-drill may come from its ... sound, a drill driven by hand. But ... a large 'rimmer,' or 'reamer' ... could be a 'rimmer' or 'maker of a ... in one case, and be a 'broatch,' or ... 'broach'—the maker of a hole—in the ... case, is not so apparent. We can ... see why a 'drill' should 'make' a hole ... and a 'borer' should enlarge a hole al... ...ady made. On these two last terms ... chanics are generally agreed. But it ... es as though a glossary of English ... mechanical terms might be of use ... melody should attempt it.

HEATING STEEL.

Much of the difficulty experienced by machinists in occasional attempts to forge their own tools comes from improperly heating their steel. To produce a good cutting tool, steel should be heated no more than is necessary to forge and temper. Follow the advice so frequently given to heat slowly, but at the same time avoid being too long in heating. The best results are obtained by a moderate, even heat, until the proper degree is reached, and then forging at once. It is a great but common mistake to allow the piece to come to the proper heat and then lie in the fire with the blast shut off for some minutes.

While this should not be done in the process of forging, the practice should be particularly guarded against when heating to harden. In the process of forging the hammering in some degree seems to "restore" the steel, but when the tool is hardened and tempered from such a heat there is no possibility of its ever being of much use. In tempering the drawing should be done quite slowly, as in this way a much better cutting tool is produced than when it is rapidly performed.

The colour is by no means a sure test of temper, since different kinds of steel do not take the same colour for equal degrees of hardness. This is also true of steel that had been worked considerably, as old tools. The only guide in this respect is experience and judgment.

Steel for tools should never be heated, either for forging or tempering, in a fresh coal fire (unless it be charcoal).

If coke is not at hand the fire should be allowed to burn until the gas is burned out of the coal, before the steel is introduced. What has been said in reference to heating steel for cutting tools is equally applicable to steel used in making springs.—*American Machinist*.

ANILINE BLACKS.

Perhaps the most important aniline colour, and one which has been the subject of the most experiment, is aniline black. It should be understood that the aniline black is simply precipitated cotton, in the vegetable fibre. The first success achieved in this direction was purely accidental, and was based on the oxidation of the salt of iron, copper, chlorate of potash or a mixture of the same, acting upon it through the medium of a high temperature. But this method was found to be unsatisfactory. The oxidation was too rapid and destroyed the vegetable fibre which was to be dyed black by this colour. The question was, how best to subdue this oxidizing agent and keep it within proper limits. The first attempt was by the action of hydro-fluosilicic acid upon the chlorate of potash, which would be harmless while cold, but which would produce a powerful agent known as chloric acid when heated by the decomposition of chlorate of potash, thus forming a hydro-fluosilicate of potash of the free chloric acid, in such small quantities and from time to time as thoroughly to oxidize the aniline without injuring the fabric. This process dates back to 1864. Still later chromic acid was used to aid the process, and also clorate acid, as before. Especial attention has lately been directed by chemists to the manner of using the chlorates. In place of chlorate of potash, the chlorates of soda and baryta, though considerably more costly, have been used by calico printers, because of their greater solubility, which renders it possible to add a larger proportion to the colour. Thus a more powerful chloric solution is obtained and there is no fear that the chlorates will crystallize out in the colour. Streakiness has been the evil result of dyeing with aniline blacks, but by the above substitution this is avoided. The colour keeps well and requires only a slight warming to make it ready for use. In getting up steam aniline blacks, chlorate of baryta possesses some advantages over chlorate of soda, especially when the colour contains yellow prussiate, which runs into the whites and stains...

A German scientific journal says that during the Arctic winter (September to May inclusive) the ice reaches a thickness of from 5·28 feet to 7·54 feet. This difference does not depend merely on the lower or higher winter temperature. Where the water is deep and in constant motion, the ice acquires less thickness than in quiet bays. It is shown, however, that in places exposed to the cold polar current there is thicker ice than in other places not so exposed, though the mean winter temperature at the latter may be lower. In general the ice thickens more rapidly just after commencement of its new formation than later.

Count Eszeaberg, who has an estate in the Tyrol that suffers very much from lack of natural moisture, but on which, from the formation of the hills and the density of the woods, he has long believed that there were hidden springs, has employed the microphone to solve the riddle, and with excellent success. Along the foot of the hills he has several instruments, and has connected them with an insulated telephone and a small battery. In the night, when the vibrations of the soil are few at, he listens for subterranean ripples, and already has been able thus to discover several springs, which he has turned to practical purposes.

An Austrian chemist is said to have devised some time ago a new soporific, the action of which is so rapid and powerful that a few drops of it sprinkled on the head and face will stupefy a man in a few seconds and render him utterly defenceless. He gave it the name of Bandiger, or "tamer," and offered to sell the secret of its preparation to the Austrian Government. But the Government has not only refused to purchase it, but has ordered the police authorities to formally order the inventor to discontinue his experiments, and to abstain from using in any way his invention, or communicating it to others, under pain of being criminally dealt with.

For production of marble or wood paper, in which the various tones of colour are not limited by sharp lines, but pass so softly into one another that the boundaries are not recognized, Herr Gmeiner, of Dresden, uses engraved rollers made of caoutchouc or other elastic material, instead of metallic ones. Their diameter is determined by blowing in the air. Hard vulcanized caoutchouc is unsuitable for the purpose. The rollers have wooden disks at the ends, over the edges of which the caoutchouc is turned and fixed with glue and wire, so as to make the roller air-tight. A hollow axle enters on one side, and through this the air can be blown.

A Roumelian engineer, Trajan Teodoresco by name, has invented a new description of torpedo or submarine boat, whose peculiarity is that it is capable of manœuvring under water at twelve hours on a stretch. It is able to act at depths of from one hundred feet in rivers to seven hundred or eight hundred feet in the sea. It is able through the agency of screws, to rise or sink noiselessly, and either suddenly or gradually by successive stages, and can move or manœuvre in any direction. The illumination of the vessel is internal, and enables the officers upon her to see for a distance of 130 feet under water. Such are the advantages claimed for this boat.

Professor Knuis of the Naval Observatory at Washington, believes that the tails of comets are electric light. "If these tails had any substance," he argues, "the laws of motion are constantly violated by them. The great comet of 1843 went so near the sun that it passed from one side to the other in a few hours. Its immense tail, 100,000,000 miles long, was shifted completely, so that it pointed directly in an opposite direction. Could that be so if it were composed of any substance? Could a comet swing 100,000,000 miles of tail around so quick as that? The electricity is generated by evaporation. As the comets approach the sun, the heat becomes more intense, the evaporation and accumulation of electricity more rapid, the repulsive force greater, and the tails longer. Sometimes the material becomes completely evaporated. Then the comet has no tail."

A. Renouard, of Rouen, France, has lately experimented with greasy rags to ascertain the degree of their inflammability under certain conditions. He took for this purpose a quantity of cotton rags, saturated them with boiled linseed oil, wrung them out and placed them together with dry cotton in a box about eighteen inches long, eight inches wide and two feet high, in which he put a thermometer in order to watch the increase of temperature. The room in which the experiment was made was kept under a temperature of 170°F. The mercury soon began to rise, and showed within 1½ hour, 340°F., smoke commenced to come through the fissures, and as soon as air was let in the flames burst out. In another experiment, made under the same temperature, cotton saturated with crude linseed oil ignited within five or six hours. Rapeseed oil caused ignition after ten hours. In another room where the temperature was left at 120°F., cotton mixed with a little olive oil put in a paper burnt after six hours; castor oil required more than twenty-four hours, whale oil only four hours, and fish oil two hours. Spermaceti oil, free of glycerine, did not ignite at all, neither did heavy tar, coal tar or shale oils.

The manufacture of condensed milk is thus described in the *Scientific American*. When the milk is brought into the factory it is carefully strained, placed in cans or cools, which are put into a tank of water kept hot by steam coils. When hot it is transferred to larger steam-heated open vessels and quickly brought to a boil. This preliminary heating and boiling has a two-fold effect—the expulsion of the gases of the milk, which would cause it to foam in the vacuum pan, and also to add to the keeping quality of the milk by destroying the mould germs. A second straining follows, after which the milk is transferred to a vacuum pan, where, at a temperature below 160 degrees Fahrenheit, it boils and is rapidly concentrated to any degree desired. The vacuum pan employed is a close vessel of cupola, egg-shaped, about six feet high and four and one-half feet in diameter. It is heated by steam coils within, and by a steam jacket without—enclosing the lower portion. In one side of the dome is a small window through which gas illuminates the interior, while on the opposite side is an eyeglass through which the condition of the contents may be observed. The pan is also provided with a vacuum gauge and test sticks. Much of the milk used in cities is simply concentrated without any addition of sugar. The process of concentration is continued in the vacuum pan until one gallon of the milk has been reduced to a little less than a quart—one volume of condensed milk corresponding to about four and three-tenths volumes of milk. Condensed milk intended to be preserved for any length of time has an addition of pure cane sugar made to it during the boiling, and is usually put up in sealed cans. This sugar or "preserved" milk, when properly prepared, will keep for many years.

The disappearance of the comet of 1881—for such it must probably be hereafter called, not having been identified with any previous visitor—naturally suggests the question whether its literature (which has really proved rather voluminous) has added anything to our knowledge of astronomical chemistry. It will be owned probably that the chemical inquiries of Professor Henry Draper have marked an era in such studies, and that, in the direction they have given to astronomical research, they are at least of the highest interest and value. The curious fact about the spectroscopic investigations of the Professor thus far consists in the destruction of an astronomical doctrine set forth with great literary skill and elaboration by Mr. R. A. Proctor in his lectures a year and a half ago. The doctrine represented at that date the ripest, largest and most enlightened interpretation of astronomical physics, and it is a curious fact that a generality so brilliant, and apparently so well sustained by astronomy, should have been placed in a questionable position so soon. The theory advanced by Mr. Proctor was one of cycles of development in the bodies of the universe, some being in a state fitted for the inhabitation of living beings, others advancing slowly toward that condition, and others either senescent or in absolute senility. Now, carbon is the specially essential element of life—its physical basis. Hydrogen, oxygen and nitrogen are requisites, but they are less the basis of living matter than their wonderful compeer in terrestrial chemistry. What the stellar researches of Professor Draper have established, or, at least, tended to establish, is the comparative rarity of carbon and its compounds in the celestial universe. It has never been detected in the sun, and the star Capella, whose spectrum is identical with that of the sun, presents no evidence of its existence. Vega has a spectrum of three or four bands only, and is a very crude physical body; it may be considered as no more complex than a comet and no more habitable. Between Vega, which is a star of low physical development, and Capella, which is one of the most advanced, every variety of spectrum is found, but no evidence of carbon, and none consequently of life. The evidence of the spectroscope, indeed, appears to indicate that most of the bodies of the stellar universe are in conditions approximating to that of the solar orb, and that the hypothesis of hundreds of habitable worlds existing among them is not one that can be entertained. Indeed, until carbon as an element is detected in the stellar universe, the conception advanced by Mr. Proctor must be either abandoned or held in abeyance. An advance in complexity of physical constitution is constantly observable in the indications of stellar spectra; but conditions of the surface comparable with those obtained upon the surface of the earth have not yet been discovered beyond the limits of the solar system.

There are now twenty immense glucose factories either built or in process of construction in the United States. Already a capital of $2,000,000 is invested in the business. The daily consumption of corn for the manufacture of glucose is about 35,000 bushels, and the annual amount about 11,000,000 bushels. All the factories are run day and night to meet the demand, and still fail to supply it.

POSTAL TIME TABLE.

POST OFFICE, OTTAWA.

ARRIVAL AND DEPARTURE OF MAILS.

Mails	Arrive	Close
Eastern—Montreal, Quebec		2 30
Manitoba, Prince		1 00
Western—Kingston, Toronto		2 00
Western U.S.		7 00
N.S. and C. mails		4 45
Kemptville, etc.		4 45
Metcalfe		4 45
North Gower, Kars		4 45
Metcalfe, Russell, etc.	10 00 12 45	4 45
Pembroke, Renfrew		2 00
Ashton, Stittsville, Huntley		2 00
Perth, Smith's Falls, etc.		2 00
Sand Point, Arnprior		2 00
Bristol, Clarendon, Bell's Corners, Richmond	2 00	10 30
Hull		7 30
Aylmer, Eardley, etc.	10 00	2 00
North Shore and Montreal		2 00
Gatineau Route	6 00	2 00
New Edinburgh		10 30
Billings' Bridge	30	2 15
British, ex N.Y. M.T.		8 00
British, ex Halifax, Thursday		12 00 noon
British, supplementary		1 30

Registered matter must be posted half an hour previously.

Office hours from 8 a.m. to 8 p.m. For Savings' Bank and Money Order business, 9 a.m. to 4 p.m.

O. P. BAKER, Postmaster.

POSTAL TIME-TABLES.

POST OFFICE, MONTREAL.

Mails	Arrive	Close
ONTARIO & WESTERN PROVINCES		
Manitoba & Pacific Coast		
Ottawa River Route as far as Pembroke		
QUEBEC EASTERN PROVINCES		
Quebec, Three Rivers, Harbour at Sorel, Richmond, Q.M.O. & O. Ry		1 45
Quebec by Steamer		6 00
Quebec by G.T.R.		8 00
Eastern Townships, Three Rivers, Arthabaska and Riviere du Loup Ry		8 00
Occidental Ry. Main Line to Ottawa	12 30	7 00
Do. St. Jerome and St Jan Branches	9 20	4 45
St. Remi & Hemmingford Ry	11 20	2 00
St. Hyacinthe, Sherbrooke, etc	8 10 12 45	6 00 2 30
Acton & Sorel Ry		8 30
St. Johns, Stanbridge and St Armand Station	8 00	
St. Johns, Vermont Junction & Sheford Ry	10 00	2 15
South Eastern Ry		5 15
New Brunswick, Nova Scotia and P.E.I.	1 00	8 00
Newfoundland forwarded daily, on Halifax, whence despatch is by Packet leaving 6th and 20th July.	8 00	
LOCAL MAILS.		
Beauharnois Route	11 3	6 00
Boucherville, Contrecœur, Varennes and Verchères	11 30	1 45
Cote St. Paul	10 00	6 00
Tanneries West	11 30	5 30 6 00 2 00
Cote St. Antoine and Notre Dame de Grace		8 30 12 45
St. Cunegonde	11 30	6 00
Huntingdon	11 30	6 00 2 00
Lachine	10 00	8 30 6 00 2 00
Longueuil	10 30	6 00 1 45
St. Lambert	10 00	2 30
Laprairie	10 00 ...	6 00 2 30
Pont Viau, Sault-au-Recollet	10 00	3 30
Terrebonne and St Vincent	8 00	1 05
Point St. Charles	8 30	2 30 8 00 1 15
St. Laurent, St. Martin and St. Eustache		1 30 7 00 [& 5
North Shore Land Route to Boucherville Isle	10 00	3 30
Hochelaga	9 00	5 30 8 00 2 30 [& 6]
UNITED STATES.		
Boston and New England States, except Maine		6 00 5 40
New York and South and West States	10 30	[5 40
Island Pond, Portland and Maine	8 00 12 30	6 00 2 15m
Western and Pacific States	8 40	2 30 [& 8
GREAT BRITAIN, ETC.		
By Canadian Line (Friday)		8 00
By Canadian Line (Supplementary—Saturday)		7 0
By Canadian Line, Germany (Friday)		6 00
By Canard (Monday)		7 30
Supplementary, see P.O. weekly notice		5 25
By Packet from New York for England (Wednesday)		2 15
By Hamburg American Packet to Germany (Wednesday)		2 15
WEST INDIES.		
Letters, etc., prepared in New York are forwarded daily on New York, whence mails are despatched		2 15
For Havana and West Indies, ex Havana, every Thursday p.m.		

*Postal Car Bags open till 8.45 a.m. and 9.15 p.m.

†Postal Car Bags open till 9.00 p.m.

The Street Boxes are visited at 9.15 a.m., 12.30, 6.30 and 7.30 p.m.

Registered Letters should be posted 15 minutes before the hour of closing ordinary Mails, and 30 minutes before closing of English Mails.

RAILWAY TIME-TABLES.

Canada Central Railway.

CHANGE OF TIME.

On and after MONDAY, 20th JUNE, 1881, trains will run as follows:—

LEAVE OTTAWA.

*Western Express Train to the West, connection with all Trains for Pembroke, all points West, Toronto at 11 p.m.	11.15 a.m.
Pembroke Express Train, stopping at Carleton Junction, trains for Perth, Smith's Falls and Brockville	4 p.m.
*Express Train from the West, leaving Toronto at 7 a.m.	5½ p.m.
Express Train from Brockville, Perth, Pembroke, and all intermediate stations	1.40 p.m.

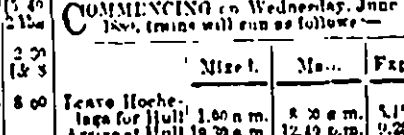
Train run on Montreal time.

*These trains make only four stops between Ottawa and Brockville Junction.

Connection made at Brockville with the Utica and Black River R.R. for New York, Albany and all points South.

T. A. McKINNON, Superintendent. ARCHER BAKER, General Manager.

Brockville, Ont., 21st June, 1880.



ST. LAWRENCE & OTTAWA RAILWAY.

On and after THURSDAY, 16th JUNE, 1880, trains will run as follows:—

LEAVE OTTAWA.

For the East, West, South and South-East	11.15 a.m.
For the West	3.00 p.m.
For both East and West	10.30 p.m.

ARRIVING IN OTTAWA.

From both East and West	6.00 a.m.
From the East, South and South-East	4.00 p.m.
From the West	9.30 p.m.

Going West take the 11 a.m. train. Ample time for dinner at Prescott Junction.

Sure Connections with Grand Trunk Trains to and from both East and West, and with those of the Rome, Watertown & Ogdensburg and Lake Champlain and Utica & Black River Railways at Ogdensburg, to and from New York, Boston, and all points South and East.

A Steamboat Express Train will leave Ottawa on Tuesdays, Thursdays, Saturdays and Sundays at 8 a.m., connecting with the different lines of steamers on the St. Lawrence, for both East and West.

A Sofa Car will be run on the Night Trains between Ottawa and Prescott Junction.

Trains are run on Ottawa time.

WALTER SHANLY, General Manager, Ottawa.

Ottawa, July 20, 1880.

Q. M. O. & O. RAILWAY.

CHANGE OF TIME.

COMMENCING on Wednesday, June 22nd, 1881, trains will run as follows:—

	Mixed.	Mixed.	Express.
Leave Hochelaga for Hull	1.00 a.m.	8.30 a.m.	5.15 p.m.
Arrive at Hull	10.30 a.m.	12.40 p.m.	9.25 p.m.
Leave Hull for Hochelaga	1.00 a.m.	8.30 a.m.	5.05 p.m.
Arrive at Hochelaga	10.30 a.m.	12.20 p.m. Night Passenger	9.15 p.m.
Leave Hochelaga for Quebec	6.00 p.m.	10.00 p.m.	3.00 p.m.
Arrive at Quebec	8.00 p.m.	6.30 a.m.	9.20 p.m.
Leave Quebec for Hochelaga	8.30 p.m.	6.30 p.m.	10.1 a.m.
Arrive at Hochelaga	8.00 a.m.	6.30 a.m.	4.40 p.m.
Leave Hochelaga for St Jerome	5.30 p.m.		
Arrive at St Jerome	7.1 p.m.	Mixed.	
Leave St Jerome for Hochelaga		7.15 a.m.	
Arrive at Hochelaga		9.00 a.m.	

[Local trains between Hull and Aylmer.]

Trains leave Mile End station seven minutes later.

☞ Magnificent Palace cars on all passenger trains and elegant sleeping cars on night trains.

Trains to and from Ottawa connect with trains to and from Quebec.

Sunday trains leave Montreal and Quebec at 6 p.m.

All trains run by Montreal time.

GENERAL OFFICE, 13 Place d'Armes Square.

TICKET OFFICES, 14 Place d'Armes and 202 St. James St., Montreal, and opposite the St. Louis Hotel, Quebec.

L. A. SENECAL, General Superintendent.

INTERCOLONIAL RAILWAY.

SUMMER ARRANGEMENTS, commencing 16th June, 1880:—

Through Express Passenger Trains run daily (except Sunday) as follows:—

Leave Point Levis	7.30 a.m.
" River du Loup	1.00 p.m.
Arrive Trois Pistoles	2.05 p.m.
" Rimouski	4.1 p.m.
" Campbellton	7.35 p.m.
" Dalhousie	8.37 p.m.
" Bathurst	10.15 p.m.
" Newcastle	11.10 p.m.
" Moncton	2.10 a.m.
" St. John	6.05 a.m.
" Halifax	10.45 p.m.

This train connects at Chaudiere Curve with Grand Trunk train leaving Montreal at 10 p.m.

The trains to Halifax and St. John run through to their destination on Sunday.

☞ The Pullman car leaving Montreal on Monday, Wednesday and Friday, runs through to Halifax, and that leaving on Tuesday, Thursday and Saturday, to St. John.

☞ The trains leaving Halifax at 6 p.m. and St. John at 10 25 p.m., and which reach Montreal at 6.30 a.m. by connecting at Chaudiere Curve with the Grand Trunk train at 8.50 p.m., remain at Campbellton over Sunday.

For information in regard to passenger fares, tickets, rates of freight, train arrangements, etc., apply to

CAPT. MacCUAIG, Sparks St., Ottawa.

D. POTTINGER, Chief Superintendent.

DOMINION TRADE REGISTER
AND
INDUSTRIAL DIRECTORY.

AGRICULTURAL IMPLEMENTS
A. S. WHITING MANUFACTURING CO., Cedar Dale, Ont.—Manufacturers of scythes, fork-glaves, etc.

WELLAND VALE MANUFACTURING CO., Fort Nos. St. Catharines, Ont., Canada.—Manufacturers of axes, scythes, forks, hoes, rakes and edge tools.

ANILINE DYES
EMIL THIORET & CO., Montreal.—Agents for J. Schider, Offenbach O. M., Germany

BRASS WORKS
H. N. FABER & CO., Montreal.—Brass finishers and steam fitters, and pump manufacturers.

BRIDGE BUILDERS
TORONTO BRIDGE CO., Toronto.—Builders of Wrought Iron, Railway and Highway Bridges.

CAPS AND FURS
J. JOHNSTON, Toronto, Ont.—Manufacturers for the trade only.

CARPETS.
PETLEY & CO., Golden Griffin, 124, 126 and 128, King street East, Toronto.—Wholesale carpet dealers.

COTTON BROKERS.
M. WRIGHT, Dundas, Ont.—Sole agent in Canada for Gosney & McClure, cotton factors, Nashville, Tenn.

COTTON MILLS.
DUNDAS COTTON MILLS CO., Dundas, Ont.—Manufacturers domestics, denims, tickings, yarns, etc.

HAMILTON COTTON MILLS CO., Hamilton.—Denims, tickings and yarns.

JOHN MACKAY, Dundas, Ont.—Manufacturer of every description of cotton warps and yarns.

EDGE TOOLS.
R. T. WILSON, Dundas, Ont.—Manufacturer of axes, picks, mattocks, grub hoes and railway contractors' supplies.

ENGINES AND BOILERS.
G. C. MORRISON, Hamilton.—Engines, boilers, steam hammers, etc.

THOS. WILSON, Dundas, Ont.—Manufacturer of stationary and portable steam engines, boilers and machinery of every description—cotton mill calenders, hosiery steam presses and propeller wheels, all sizes.

ENGINEERS AND MACHINISTS.
JOHN FENSOM, Toronto.—Engineer, Machinist, etc. Manufacturer of hydraulic, steam and hand power passenger and goods elevators.

ENGRAVERS, ETC.
JOHN FLEMING & SON, Colborne St. Toronto, Ont.—Electrotypers, engravers on wood, designers, etc

FILES.
THOS. GRAHAM, Toronto.—Manufacturer and recutter of files and rasps.

FREDERICK BAUSCH, Cote St. Paul, Montreal.—Manufacturer of every description of hand made files and rasps.

FILE & SPRING CO., Cote St. Paul, Montreal.—All kinds of files and springs. Files recut. Sole manufacturers of Shaulding's patent concaved spring.

W. OUTRAM & SON, Dominion File Works Montreal.—Manufacturers of every description of files and rasps.

FURNITURE
OSHAWA CABINET CO., Oshawa, Ont.—Furniture Manufacturers. Toronto branch, 97 Yonge St.; Montreal branch, 417 and 419 Notre Dame St.

AMERICAN BRACKET CO., Hamilton, Ont.—Manufacturers of all kinds of fancy furniture, brackets, etc.

TEES & CO., 11 St. Bonaventure St., Montreal.—Manufacturers of office desks and revolving bookcases.

JAMES WRIGHT & CO., 11 to 17 Hermine St., Montreal—Church, bank, house, store and office fittings, art furniture and inlaid floors, etc.

GLASSWARE.
HAMILTON GLASS CO., Hamilton.—Manufacturers of flint and green glassware.

GLOVE MANUFACTURERS
W. H. STOREY & SON, Acton, Ont.—Manufacturers of fine gloves and mitts in every variety and style.

HARDWARE.
HENRY H. WARREN, Cote St. Paul, Montreal.—Manufacturer of every description of hatchets, sledges, hatchets, contractors' tools, etc.

HUBS, SPOKES AND RENT GOODS.
F. W. HORE & SON, Hamilton, Ont.—Manufacturers of hubs, spokes, rims, shafts, poles, sleigh and cutter stuff, etc.

INKS.
F. F. DALLEY & CO., Hamilton, Ont.—Manufacturers of inks, blacklings, harness oils, perfumery, etc.

IRON WORKS.
CANADA SCREW CO., Dundas.—Manufacturers of iron and brass screws, bolts and rivets.

COWAN & CO., Galt.—Manufacturers of every description of wood working machinery.

DOMINION BOLT CO., 139 Front St. East, Toronto.—Manufacturers of every description of bolts, hot pressed nuts, railway spikes, bridge, boiler and iron rivets.

H. R. IVES & CO., Montreal.—Hardware manufacturers and founders, iron railing and ornamental iron work a specialty.

HAMILTON BRIDGE & TOOL CO., Hamilton.—Iron railway and highway bridges and iron working machinery.

McKECHNIE & BERTRAM, Dundas.—Machine tools and wood working machinery.

THE OSHAWA MALLEABLE IRON CO., Oshawa, Ont.—Manufacturers of malleable iron; also *patent screw wrenches*.

OLMSTED & SON, Hamilton, Ont.—Manufacturers of fountains, fences, crestings, vases and statuary, wagon skeins, etc.

KNIFE WORKS.
THE WHITMAN & BARNES MANUFACTURING CO., St. Catharines, Ont.—Manufacturers of mowing and reaping machine knives, sections, guard plates, cutting apparatus complete, spring keys and cotters, etc.

KNITTING MILLS.
S. LENNARD & SONS, Dundas.—Manufacturers of plain and fancy hosiery.

LASTS, DIES, ETC.
CHAS. CHILDS, Montreal.—Manufacturer of last and shoe lasts, dies for cutting sole leather, upper leather, envelopes, boxes, cuffs, and paper collars.

LEATHER BELTING.
DOMINION BELT AND HOSE CO., Toronto.—Oak tanned belting, lace leather, etc.

ROBIN & SADLER, Montreal.—Manufacturers of every description of leather belting.

ORGANS AND PIANOS.
WM. BELL & CO., Guelph, Ont.—Manufacturers to the trade

BOLTON & SMITH, 167 Mountain St., Montreal.—Tuning and repairing attended to.

DANIEL BELL & CO., Toronto.—Manufacturers of the "Excelsior" organs.

DOMINION ORGAN AND PIANO CO., Bowmanville, Ont.—Manufacturers of Pianos and Cabinet Organs. See advertisement in other columns.

S. R. WARREN & SON, Toronto.—Manufacturers of church organs.

ORGANS AND PIANOS—*Continued.*
WM. NORRIS & SON, Nos. 8 Adelaide St. East, Toronto.—Wholesale importers of pianos, organs and sheet covers, and manufacturers of piano stools

HEINTZMAN & CO., 117 King St. West, Toronto, Ont.—Manufacturers of piano fortes

WOODS, POWELL & CO., office and Warerooms Corner Church and Ferra Streets, Guelph, Ont.—Manufacturers of Reed Organs

PAPER MANUFACTURERS
CANADA PAPER CO. (limited), 61, 63 & 65 St. Paul St., Montreal.—Manufacturers and importers of all kinds of papers. Mills at Windsor, Sherbrooke and Portneuf.

DOMINION PAPER CO., 47 St. Peter St., Montreal.—Manufacturers of manilla, sash and news print, cardboard middle and coloured papers.

JOHN FISHER & SONS, Dundas.—Manufacturers of printing and wrapping papers

LINCOLN PAPER MILLS CO., Merritton, Ont.—Manufacturers of every variety of straw paper bags and flour sacks.

WM. BARBER & BROS., Georgetown.—Manufacturers of book and fine papers

SAW MANUFACTURERS
R. H. SMITH & CO., St. Catharines.—Manufacturers of all kinds of saws, plastering trowels, straw knives, etc. Sole manufacturers for the Dominion of Canada of the celebrated "Simond's Saw."

SHURLY & DIETRICH, Galt, Ont.—Manufacturers of circular and cross-cut saws, plastering trowels, etc.

SEWING MACHINES, ETC.
W. WILKIE, Guelph, Ont.—Manufacturers of sewing machines, apple parers, ear heaters, sad irons, skates and hardware novelties

SCALES.
CANADA SCALE WORKS, Jas. G. White & Co., Toronto.—Manufacturers of all kinds of standard scales. Factory, 102 Adelaide St. East.

C. WILSON & SON, 45 Esplanade Street, East, Toronto.—Manufacturers of the Improved Wilson scales. Designers to the Government. Received 29 first prizes, medal and Governor General's grand diploma.

HOWE SCALE CO., 65 Yonge Street, Toronto.—Those in want of scales will find a larger and better assorted stock with us than at any other House in Ontario.

SPICES, ETC.
R. D. VAN DE CARR & SON, Toronto.—Manufacturers and importers of coffees, spices, cream tartar, mustard, etc.

STEREOTYPERS, ENGRAVERS, ETC
F. DIVER & CO., Toronto.—Electrotypers and stereotypers. Designers and engravers on wood.

STOVES.
WM. CLENDINNENG, Montreal.—Stoves, ranges, furnaces, railway and machinery castings.

TELEPHONES.
HOLT TELEPHONE CO., Toronto.—Telephones sold outright $5 to $20 per pair, wire 3c. to 6c. per rod; works two miles.

TRIERS.
BUTTER & CHEESE TRIERS.—Robert Donaldson, Montreal, manufacturer of pump augers, butter, cheese, flour and sugar triers.

WIRE WORKS.
D. GREENING & CO., Hamilton, Ont.—Manufacturers of wire ropes, cloth and general wire workers.

MAJOR & GIBB, 646 Craig St., Montreal.—Manufacturers and importers of wire cloth and wire goods and dealers in railway and mill supplies.

TIMOTHY GREENING & SONS, Dundas, Ont.—Manufacturers of the strongest description of steel wire cloth, malt kiln floors, and general wire weavers.

WOODEN GOODS.
C. T. BRANDON & CO., Toronto.—Have special facilities and machinery for the manufacture of all kinds of wooden articles. Correspondence solicited.

J. R. McLAREN, Jr., 63 College St., Montreal.—Manufacturer of Sharpe's patent safety oil cabinets; also, refrigerators, children's carts, wagons, sleighs, and general woodenware.

WOOLLEN MANUFACTURERS.
J. ROUTH & CO., Cobourg.—Woollen Manufacturers.

JOHN WARDLAW, Galt, Ont.—Manufacturer of Scotch fingering, wheeling and knitting yarns.

WOOLS AND COTTON WARPS.
WINANS & CO., Toronto.—Dealers in wools and cotton warps.

PETROLEUM.

CANADIAN MARKETS.

(Petrolia Advertiser.)

The market for crude keeps steadily rising, and the goal of the producer's ambition, viz. $2, may be said to have almost arrived. During the present week sales have been made at $1 90 and $1.95, showing conclusively that two dollar oil is again to prevail in Petrolia.

Refined remains about the same as we quoted last week, viz., 19c. Should the American market stiffen the least, we expect to see 20c. freely got.

The market here for crude oil, by the carload, is from $1.00 to $1.95 per barrel f. o. b.

This is the price obtainable for the *crude oil or warehouse receipts* issued by the different Pipe Line Companies, at Petrolia Ont., and includes the pipage charges of from 3c to 7c per barrel, according to the distance of the producers' well from the shipping tanks at the railway.

The price of American crude oil in the various producing districts of Oil City, Parker, Titusville and Bradford, by the latest quotations, is 77c to 78c per barrel in tanks at the wells for United Pipe Line crude oil certificates—to this price has to be added the pipage charges of 20c per barrel for pumping on board the cars. When a producer has his own pipe line he obtains from 10c to 20c per barrel more for his oil than the price at the wells, but he does not get the advantage of a certificate in case he wishes to hold his oil for a rise and get money advanced on it.

REFINED OIL MARKET.

Petrolia, (Ont.)	$0 19	per gall.	@ 00	days.
London	0 19	"	"	"
Toronto	0 19	"	"	"
Ottawa	0 21	"	"	"
Montreal, (P. Q.)	0 21½	"	"	"
Quebec	0 22	"	"	"
Halifax and St. Johns	0 22½	"	"	"

The above are wholesale prices per Imperial gallon at which refined oil is sold by the car load; the price per single barrel is generally from 1 to 2 above these figures.

The latest refined oil quotations in New York market are as follows:—

Cargo lots for export 110° burning test by the Rayhold tester, 8½c

Refined oil for the New York City trade, in lots of 50 to 100 barrels 100° flash test by the Tagliabue prism tester 9½c

Refined oil of 150° burning test 10½ to 12c according to brand. This is the kind of American oil usually purchased for the Canadian market and is coming into general use in the United States.

Cases of refined oil for export, 110° burning test, cargo lots 11½ to 12c, according to brand

PETROLEUM PRODUCTS

Lubricating	25 @ 30 per bbl
Tar	3 @ 4 00 "
Benzine	0 12½ @ 0 15 per gall.
Other—Straits	0 22½ @ 0 25 "
Paraffine Candles	0 18 @ 0 20 per lb.
" Wax	0 08 @ 0 10 "

THE BRITISH MARKET.

ARTHUR BROWN & CO.'S PETROLEUM REPORT

London, August 15th 1881.

Refined Petroleum oil.—There has been but little alteration in the market since our last. The slight advance in American quotations had the effect of making prices rather higher here, but the improvement was difficult to sustain, and business was flat at the end of the week. Prime and Standard White Pennsylvanian sold at 6½d to 6¾d. on the spot and for the month, Sept 6¾d, and from October to February 1882 at 6¾d to 6¾d. per gallon

To-day's market closes quiet, 6¾d.

Naphtha.—Firm, crude 10d, deodorized 10½d

Coal Oil.—Nothing doing.

Turpentine.—The advance established last week has been well sustained on the whole. There was a slight relapse about the middle of the week but things soon righted themselves, and 34s. 6d. to 35s. has been the nearest quotable price for both spot and forward. To-day's market closes steady. The stock at the Wharves is 10,329 barrels, and deliveries for the past week 1,402 barrels.

PETROLEUM OIL.

Prices of S. W. Petroleum.	1881. N. York. 7½c. London 6¾d.		1880. N. York. 8½c. London 7¾d.	
	Refined.	Cru.	Refined.	Cru.
Stock this day	86,980 bbl.		117,012 bbl	
Landed last week	2,302 ex.		1,361 ex	
	5,422 bbl.		660 bbls	
Delivered last week	5,328 bbl.		4,274 bbls	
	33 ex.			

COAL OIL

	1881.		1880	
	Refined.	Cru.	Refined.	Cru.
Stock this day	924 bbl.		3,665 bbl.	..
Landed last week	500 bbl.		500 bbl.	..
Delivered last week	19 bbl		235 bbl.	.

Above represents stocks and movements at London Public Wharves, excluding Thames Haven Wharf.

NEW ZEALAND AND UNITED STATES TRADE.

The value of goods bought in 1879 by New Zealand from the United States was $2,133,145, by New Zealand Customs returns, showing an excess of $1,832,991 in the imports. The total exports of that country for 1880 were $30,916,011; imports, $29,988,042. The exports were the largest since 1872, at least, and were more than $9,000 000 in excess of 1879. The imports declined nearly $11,000,000 from 1879, and were the smallest since 1872, at least, the returns prior to 1873 not being before us. In American goods taken by New Zealand, machinery ranks first, $284,016 value, of which $162,067 is for agricultural machinery. Tobacco stands next, with $234,521, besides $6,671 for cigars. Oils, of course nearly all are kerosene, stand next, with $173,618; then hardware and ironmongery, with $171,752; then railway plant, valued at $104,933, including 14 cars and 7 locomotives. New Zealand has a very moderate tariff, the highest ad valorem duty so expressed being 15 per cent., except that watches pay 25. There is a large *free list*. Among the free articles are *machinery for agricultural purposes, for boring, for making brick and tile*, pressing hay and wool, mills and looms, iron in most of its common forms, all materials for railroad construction, sewing machines and several kinds of musical instruments, many carriage materials. An Englishman in New Zealand has written home to one of the newspapers in his city—Birmingham—that the Yankees, as he calls them, probably as much to their own surprise as anybody else's, have had for several years an entire monopoly of the Australian market for reaping and binding machines. The profit, he thinks, must be ample, because the makers advertise expensively and send experienced instructors to every farmer who purchases a machine; they are at a great disadvantage in the scarcity of direct travelling sailing vessels and in the very long voyage, and he does not know anything in the material used which cannot be had quite as cheap in England as America, yet there the fact of American possession is. As to light cast steel hay and manure forks, he sees by the home papers that the English can compete in all respects with the Yankees, but, nevertheless, all the forks in New Zealand are American. He finds axes, hatchets and hammers far more salable if of American make, and adds that saws, carpenters' tools, and door locks are crowding in from America, so he thinks it time Birmingham woke up. A resident of Birmingham, in reply to this, admits it to be an old story that Americans control the colonial trade in hay forks, hoes, shovels, "and a few of the lighter agricultural machines," but makes light of American competition in hardware in general, averring that it will take a generation for American makers to obtain such knowledge of English hardware *as to seriously compete in* quality, and that even then they will be unable to compete in cost. But this does not fit in well with the reported facts, and the New Zealand writer is probably the nearer right. It is certain that especial attention is given by Americans to Australia as an export field, and that trade with the colonies is growing well. For a recent evidence of this the manager of the United States department in the late Melbourne exhibition sends a list of American awards, and says that in proportion to the number of exhibitors a larger number of awards was received than in any previous exhibition, also, that American exhibitors have sold more goods and received more orders than those of any other nation. In proportion to their number present a very large part of the exhibits being peculiarly adapted to Australian wants.—*New York Times*

The Immigration commissioners at New York have commenced suit against the steamship companies to recover $10,000 for inspection fees at Castle Garden for June and July

Hamilton, Aug 25th.—Yesterday the work of "steeping" the gates of lock 23, New Welland Canal, on the mountain brow at Thorold was finished. To-day work was to have been commenced on the gates of lock 24, and so soon as they are placed in position the job of fixing those in lock 25 will be begun. This is the last lock on the new canal, the summit level having been transferred by the construction of that national work from two and a half to three miles farther north—extending the "long level" on which there will be none but guard locks from 14½ to 16 or 17 miles. It is intended if the work is completed in time to send the first vessel through the new canal next week. This will be the *Enterprise*, which was transformed into a barge by the Messrs. Muir Brothers, of Port Dalhousie, out of the hull and frame of the old steamer *Enterprise*, built and run by the Welland Railway Company for a year, and, after being condemned, sold to the above firm. The *Enterprise* is very nearly, if not altogether, the full size of the new locks, and if loaded it is expected that her passage through will give the new canal a very fair trial, and will make apparent any defects, if such should exist. As the turbine wheels (Mr. Townsend's patent) cannot be applied the lock gates will have to be operated and closed by means of the old fashioned winches. The wheels of which 300 are required, are being made by Messrs. J. H. Killey & Co., of this city, and Mr. Wilson, of Dundas, but are feared that they will not be able notwithstanding their superior and extensive facilities, to turn out the wheels in time for the regular opening. It is possible the inspector may recommend the employment of one or two more factories in their production, so as to fully test the new canal this fall, and have it ready for the opening of navigation next spring.

THE MONEY MARKET.

TORONTO STOCK REPORT

BANKS	Amount of Capital	Capital subscribed	Capital paid-up	Rest	Dividend last 6 months	Closing Prices June 15 Sellers	Buyers
	$	$	$	$			
Canadian Bank of Commerce	4,000,000	4,000,000	4,000,000	1,600,000	4		
Consolidated	1,000,000	2,000,000	2,000,000		4	160	
Dominion Bank	500,000	500,000	500,000	350,000			
Federal Bank	1,000,000	1,000,000	1,000,000	50,000	4	170	
Hamilton	1,000,000	1,000,000	750,000	220,000	4	146	
Imperial	1,000,000	1,000,000	998,000	300,000	5	178	
Merchants' Bank of Canada	4,000,000	3,766,800	3,766,800	425,000	4	135	
Molson's Bank	2,000,000	2,000,000	1,900,000	100,000	4	140	
Montreal	2,000,000	1,000,000	11,999,300	5,000,000	8	240	
Ontario Bank	500,000	500,000	500,000	100,000	4	110	
Standard	1,000,000	1,000,000	1,000,000		4	130	
Toronto	1,000,000	2,000,000	2,000,000	500,000	5	160	
LOAN AND SAVINGS' COMPANIES.							
Anglo-Canadian Mortgage Co	100	400,000	331,411	50,000			
Building and Loan Association	25	750,000	741,216		4		
Canada Landed Credit Co	50	1,500,000	1,500,000	110,000	4½	130	
Canada Permanent L. & S. Co	50	2,000,000	1,500,000	1,000,000	8	240	
Canadian Savings and Loan Co	50	442,500	277,500	34,461	6	100	
Dominion Savings & Invest'n Soc.	50	800,000	800,000	80,000	4	110	
Farmers' Loan and Savings Co	50	1,067,250	600,315	71,415	4	110	
Freehold Loan and Savings Co	100	1,000,000	600,000	210,000	4	140	
Hamilton Provident & Loan Soc'y	100	1,000,000	1,000,000	120,000	4	130	
Huron & Erie Savings & L. Soc'y	50	1,000,000	998,140	240,000	4	130	
Imperial Savings & Invest'n Co	50	600,000	544,800	60,000	4	115	
London & Can'n L. & Agency Co	50	4,000,000	600,000	240,000	4	115	
London Loan Company	50	454,700	221,200	20,000	4	100	
Manitoba & N.W. L. & Inv't Co							
National Investment Co	100	1,000,000	292,000	11,000	4		
Ontario Loan & Debenture Co	50	1,000,000	941,500	108,000	5		
Ontario Savings & Invest'n Soc'y							
People's							
Real Estate Loan & Debt'r Co					3½		
Union Loan and Savings Co	50	500,000	445,312	105,000	5	110	
Western Canada Loan & S. Co	50	1,000,000	1,000,000	300,000	5	130	
INSURANCE, &c.							
British America	50	800,000	600,000	645,393	8	145	
Western Assurance	40	800,000	400,000	835,000	5	118	
Canada Life	400	1,000,000	125,000	36,064	24	310	
Confederation Life Association	100	500,000	50,000		5		
Consumers' Gas	50	600,000	600,000		5	170	
Dominion Telegraph	50	711,709	711,709		5	102	
Montreal Telegraph	40	2,000,000	2,000,000		21	190	
Globe Printing Co					4	100	

DEBENTURES, &c	INTEREST PAYABLE.	WHERE PAYABLE.	
Dominion Govm't stock, 5 per ct	30th April and 31st Oct	Ottawa, Montreal, and Toronto	107
County (Ontario), 6 "			
Township " 6 "			
City of Toronto 6 "			
Toronto, G. & U. bonds, 6 "	January and July	London (Eng), & Toronto	01
Toronto and Nipissing bonds	January and July	Toronto	

MONTREAL STOCK REPORT

	NAME.	Par Value	Capital subscribed.	Capital paid-up.	Rest.	Dividend last 6 Months	Closing Prices June 15 Sellers.	Buyers.
		£	$	$	$			
BANKS.	British North America	£50	4,866,666	4,866,666	1,170,000	2½		
	Canadian Bank of Com.	$ 50	6,000,000	6,000,000	1,400,000	4	164	16
	Dominion Bank	50	970,250	970,250	335,000	4		16
	Du Peuple	50	1,000,000	1,000,000	180,000	4	93	
	Eastern Townships, x d	50	1,499,800	1,382,037	300,000	3½		13
	Exchange Bank	100	1,000,000	1,000,000	50,000		179	18
	Federal Bank	100	1,000,000	1,000,000	220,000	3½	187	18
	Hamilton	100	1,000,000	745,100	80,000	3½	12	13
	Hochelaga						87	9
	Imperial Bank	100	1,000,000	998,000	100,000	4		11
	Jacques Cartier	25	600,000	600,000		2½	103	10
	Maritime	100	800,500	599,600				
	Merchants' B. of Can'a	100	5,766,800	5,800,000	475,000	3	125	12
	Molson's Bank	50	2,000,000	1,500,000	100,000	3½	112	11
	Montreal	200	12,000,000	11,999,300	5,000,000	4	201	20
	Nationale	100	2,000,000	2,000,000	300,000	2½	91	9
	Ontario Bank x d	50	3,000,000	2,997,000	100,000	3	103	10
	Quebec Bank	100	2,500,000	2,500,000	475,000	3	112	11
	Standard	50				3		
	Toronto x d	100	2,000,000	2,000,000	600,000	3½	153	15
	Union Bank	100	2,000,000	1,992,980		2	91	9
	Ville Marie		1,000,000	919,570			65	6
Canada Cotton Company		100					121	11
Dominion Telegraph Co.		50	711,709	711,709		2½	93	9
Montreal Telegraph Co		40	2,000,000	2,000,000		4	153	15
Montreal City Gas Company		40	2,000,000	1,600,000		4	145	14
Montreal City Pass'r R. Co		50	600,000	600,000		5	115	11
Montreal L'n & Mortgage Sy		100	1,000,000	850,000	75,000	3½		10
Richelieu & Ont Nav. Co.		100	1,500,000	1,500,000				
Intercolonial Coal Company		100					62	6
Quebec Fire Association Co.		100					30	20
Silver Plume Company		100				5		
Royal Canadian In. Co.		50					161	
Graphic Printi'g Co'y bonds						8	(66)	
Dominion 6 p.c. Stock							92	
Montreal Har. 6 p.c. bonds							110	10
Montreal 6 p.c. Stock								
Do. 7 p.c. do.							106	10
Do. Corporation Bonds								
Do. Waterworks do.							106	10
Montreal Building Asso		50					70	
Canada Shipping Company							113	11
Dundas Cotton Company							120	12
Montreal Cotton Company							215	21
Canada Paper Company							125	12
Canada Central Bonds							100	
Bell Telephone Company							80	
Champlain & St. L. R. Bonds							90	
Graphic Stock							60	

THE DRY GOODS TRADE.

NEW YORK ADVICES

(N Y Mercantile Journal

The week under review has developed a active business in all departments of the jobbing trade in domestic dry goods Letters from travellers of the country, especially the southern and western sections, are well represented by buyers on the market and their selections indicate their appreciation and ability to operate liberally There is a steady and active request for cottons of staples and department goods, both cotton and woollen A large and satisfactory distribution has been made of bleached and unbleached cottons, cotton flannels, prints, gingham hosiery and underwear, skirts, etc, etc Other departments have sympathised in the general condition of trade, including carpets, houses and wholesale clothiers, orders in fancy goods, notions, etc These as a rule are very firmly maintained and some *four dealings have been* made in quotations which will be found noted in other columns. The cautious buyer will do well to note carefully the tendency of value as indicated by the changes made in our price lists from week to week. The jobbing movement has been of moderate proportions, many jobbing buyers having completed their principal purchases for the season, but frequent orders have been received by mail and telegraph for duplicate assortments showing an active distribution by jobbers in the interior. Stocks of all staple goods in the hands of manufacturers and agents are generally of very moderate proportions, and with the large current and prospective demand there would seem to be a sound basis for the strong and buoyant tone now ruling in the domestic dry goods market.

The market for foreign dry goods shows continued improvement in the demand from first hands Staple goods are moving with more freedom, but buyers as a rule, are not yet inclined to extend present requirements to any extent, although values have generally opened at very moderate figures and many have a firm tone with an upward tendency in many instances Specialties and novelties, both in dress and fancy goods, show a good degree of activity and the richest and most striking effects seem to be most popular. In dress goods there is rather more inquiry for black cashmeres, but coloured cashmeres still rule quiet. Supplies are not excessive and prices are very firm, though unchanged, notwithstanding a slight advance in these goods in the foreign market. Fancy dress fabrics meet with a liberal request, and plaids, stripes sombre effects and mixtures maintain their popularity The better grades of black silks are more active and prices rule firm and higher than the closing quotations of last season Stocks of good quality black silks are only moderate, but inferior grades are in ample supply Coloured silks move slowly, but the most desirable shades and qualities have a fair inquiry. Specialties and fancies in silks are in demand and a fairness of fair proportions is reported in brocades, damasses, satin de Lyon and other satin faced goods. Velvets, both silk and cotton, also plushes, move quite freely at steady prices. White goods receive only moderate attention, but laces and lace goods are taken in assorted lots to a fair aggregate. Hamburg edgings rule quiet but steady. Linen goods are without special activity, but housekeeping varities are in some request. Foreign woollens move rather slowly, but values are unchanged. There is a limited inquiry for fine cassimeres and other fabrics for men's wear. Low grade goods are neglected The jobbing trade in foreign dry goods is fairly active; a business of satisfactory proportions has been completed

The cotton goods market has lost nothing in strength or buoyancy, especially in the jobbing departments of trade At first hands the new demand is rather less urgent, the immediate wants of a majority of the larger jobbers having been supplied, but the aggregate of small selections of fabrics needed for the renewal of assortments swells the volume of business to a very satisfactory total Agents continue to make steady and large deliveries in filling back orders and stocks of all desirable fabrics are kept at a low point in first hands Prices rule very firm, and agents have made further advances in certain lines of goods. The jobbers report an active trade during the past week, and in addition to satisfactory distribution of assorted lots many of the larger houses have completed a package business of considerable volume. There has been a steady movement of coloured cottons in filling back orders, and denims, ducks, stripes, cloaks, ticks, checks, osnaburgs, etc., have also been distributed quite freely in small assortments on new orders. Prices rule firm, with stocks under good control

The reports of the week's transactions in woollen goods are much the same as for several previous issues. Transactions have been largely on previous orders, while desirable makes of fancy goods are in a supply behind demand. The new demand for men's wear woollens is but moderate, though some large sales have been made in less desirable cassimeres. Prospects do not warrant the hope for large profits in the future, but capital not being involved in large stocks of goods with manufacturers or agents, small margins in an active market promise a satisfactory remuneration to all, and the feeling is satisfactory, and prices are firmly maintained. Leading makes of fancy cassimeres still sold ahead of production. Worsteds however, are free and Worsted coatings are in the condition of close to supply and demand Repellent are quiet the market having closed to make Kentucky jeans are receiving more attention with jobbers than at first hands Prices are firm and stocks in second hands Movement in Linseys is light Stocks of flannels are light demand has been steady at firm prices New lines of blankets is light Shawls are fairly active at firm prices Skirts are in steady demand, trimmed and embossed receiving most attention Carpets are moving to fair previous orders from a cents hands Supply is light and prices are firm

Prints have ruled active both at first and second hands during the week under review Buyers have been unusually critical in their selections, but have taken liberally of such styles and qualities as satisfied their tastes. A large *and varied assortment of new styles and* effects are displayed, some of which are very attractive and meet with a quick market For many of the most desirable effects agents have already received orders for duplicate assortments There is a good demand for leading makes of shirtings Robes, patch work prints, trimming prints, furniture cretonnes, Turkey reds, indigo blues, etc, etc have been taken to a considerable aggregate at well sustained prices In wide print there has been a fairly active movement of desirable styles of foulards and cretonnes both at first and second hands. Prices are low and are firmly maintained. Ginghams continue in brisk demand, but the package movement has been limited on account of the meagre supplies of leading makes of dress styles. Jobbers are making an active distribution of these fabrics, and agents, though making deliveries as fast as possible, are unable to keep pace with the demand The jobbing trade report an active demand for all classes of prints and an aggregate business has been done in package and assorted lots.

The cotton market is at a standstill, at least so far as any important changes in prices are concerned. There have been the usual slight daily fluctuations in future options, but the figures leave off but little different from last week. Prices for spot lots are almost identical with those we last quoted Foreign advices report rather a dull market, while reports from the South, on the whole, are not discouraging as to the extent of the crop. Some sections, however, complain bitterly of the effect of the summer's drouth

The wool market continues very dull, nearly the whole business being confined to orders covering the immediate wants of manufacturers. Buyers are not inclined to go beyond these, while sellers, on the other hand, do not press them for negotiations. Were they to do this, the cost price of wool in many cases would not be realized Holders, however, retain their confidence that a few weeks will change the current of the market, and they will come out even, or more Stocks are acknowledged to be large, but a heavy demand is anticipated with the advent of more active days in the goods market. Foreign advices report a quiet market abroad. Nominally prices with us have not changed since our last, but concessions would have to be made to effect any considerable sales

CANADIAN WOOL—AN IMPORTANT MATTER.

We commend the subjoined article from the *Monetary Times* to the special attention of our farmers The subject is one of great importance, and the considerations set out by our contemporary should lead farmers to change their breed of sheep in the direction indicated —

"Twenty thousand pounds of Canada wool, which cost me twenty-nine cents, I offered this week for twenty-four, and could not even get that" Such is the story of a country merchant a few days ago. The statement is made that 750,000 lbs of Canadian long stapled wool is at the present moment on hand, unsalable. We hear of cases in which single holders have lots of from 10,000 to 40,000 pounds on hand, bought at high prices, and offered in vain at a *loss from six to* ten cents per pound. American mills have had Canadian wool in store for a year, unable to make use of it. What is the remedy for this?

Farmers and breeders in Canada must change the character of the wool they grow, or make up their minds to sell it at a low price, if indeed, they can sell it at all We have already shown that the bulk of our wool is fit only for making worsteds, coarse yarns, bed blankets, etc But worsted goods, such as alpacas, are largely out of fashion, and the wool that suits for making them is no longer in request at home or abroad. Besides, as a large wool dealer tells us. Most of the domestic wool offering now is too coarse even for blankets or etoffes. The result is that our manufacturers have to buy mainly English, Scotch, Cape, Australian, and other finer wools, of which to make Canadian woollen goods. And for this foreign wool 30 to 40 cents is paid, while 22 to 24 cents is the ruling price for our native combing. If, therefore, Canadians would grow the kind of wool that Canadian mills want, there would be no need to go to Europe, Africa and Asia for it, but the Canadian farmer would find a ready market at a greatly improved price

Finer fibred and shorter stapled wool is a distinctly felt want in this country, and the sooner our growers realize this fact and act upon it the sooner they will make some profit out of their sheep And what is more, by obtaining animals which yield the right kind of fleeces they will receive better prices for their mutton The country wants other breeds than Cotswolds or Leicesters The Southdown and Shropshire Down will give better mutton and finer and higher priced wool, or a cross of the native sheep with one or other of these will improve the quality of both flesh and fleece, and thus put money in the farmers' pockets To repeat what we have already stated upon the authority of a grower, three Southdown sheep can be fed and kept in proper condition at the same expense for food and room as two Cotswolds.

A very important confirmation of the views we have urged is found in the conclusions reached by Prof Brown, of the Model Farm at Guelph, which we give in his own words —

"In the fattening of wethers, to finish *as shearlings*, the Cotswold and Leicester grades can be made up to 200, the Oxford Down to 180 pounds, and the Southdown (grades) 160 pounds each (live weight)

"Combining wool and flesh value, the Southdown grades give the highest returns—as much as double that of the Cotswold grade and 35 per cent over that of the Leicester grade, also slightly in advance of the Oxford Down grade"

The Professor, in his advance report of the Ontario experimental farm, considers it a point subject to no dispute that the great, roomy Cotswold sheep will eat one-half more than the hardy, compact Southdown "Having tested during five past years the crosses resulting from pure bred Leicester, Cotswold, Oxford Down and Southdown rams upon ordinary Canadian ewes at the farm, all being fed alike, the following conclusions are reached as to the yield of each sort of animal in flesh and fleece —

	Cost	Yield.	
		Wool.	Carcase.
Cotswold grade	$6 50	$2 62	$10 05
Leicester do	8 10	1 21	9 91
Oxford Down grade	7 40	2 81	10 62
Southdown do ..	6 00	2 60	10 20

Showing that where the Cotswold and Leicester show a profit of $3 17 to $4 05 respectively, the Oxford Down yields $6.02 profit and the Southdown $6 60

There is something else in the annual report of the Model Farm which should commend itself to our farmers It is this "In this country the market value of store cattle can be increased 25 per cent. during six months by good feeding This statement is founded upon the results of actual experiment. A like result is to be expected in the case of sheep And even for those farmers who have only Cotswold and Leicesters, it will pay to give attention to the better feeding and housing of them "There are too many Canadian farms on which," says a communication just received, "the daily custom in the depth of winter is to fork out upon the snow some pea straw for the cattle and sheep to nibble. The animals are not adequately sheltered nor properly fed; how then can they yield succulent beef or mutton?" We suggest, further, that in the case of sheep, it is quite possible that the exposure to the rigours of a Canadian winter must tend to make their wool coarse as well as long. Hence to improve the flesh as well as the wool shelter and better food is needed. Turnips and carrots might be fed them, and a covered shelter afforded. There are many farmers, we know, who do not need these suggestions, having long ago anticipated them, but there are numbers who would be advantaged by greater care of their cattle.

ENAMELLED CLOTH

As a substitute for leather, enamelled cloth is now largely used where lightness and pliableness are desirable Having the appearance of leather, and nearly, if not quite, its durability, it is used where strength is not so important as a good appearance. In the covering of carriage tops, the upholstering of furniture, the covering of trunks and travelling bags, a great quantity is used, and it is also employed in garments, coverings, etc., as a protection from water. Enamelled cloth originated in America, and was first made at Newark, N J, in 1849. The details of its manufacture are very simple and can soon be told. The foundation of the article is cotton cloth of the best quality, and generally made expressly for this purpose. The cloth is taken from a bale and wound upon a large cylinder preparatory to receiving its first coat. It is then passed between heavy iron rollers, from the top one of which it receives its first coating of composition In many places the covering is spread by a knife under which the web passes. The composition is made of linseed oil, lampblack, resin, and a few other ingredients which are boiled together until they reach the consistency of melted tar. From between the cylinders it is carried to a drying frame made in the shape of a reel, and subjected to a high temperature in the drying room, which is heated generally by steam pipes. After the drying process, it is given to workmen who make all the rough places smooth by rubbing with pumice stone and water. The cloth is then passed through the same operation as before, rolling, drying and rubbing, and this is repeated from three to five times, or until the required thickness has been laid on. After the last scrubbing down, the fabric is taken to another department, thoroughly varnished, and again passed through the heater It now appears as a piece of cotton cloth, with one black side looking very much like patent leather. One step yet remains to be taken The cloth is passed between heavy rollers which cover its surface with regular indentations resembling the grain of leather It is now ready for the market We venture to say that as many hands are perpetrated in this article as in any one other article that can be mentioned Manufacturers who desire to turn out a heavy material first fill the cloth with clay, and the result is an enamel that will crack during the cold weather of winter, or, in their endeavour to turn out a cloth that will stand a low temperature without cracking, they fill the merchant's shelves with material that will be sticky in summer The poor quality is used in the cheap trunk and box trade, but none but the best will do for the outside wear that comes upon carriage tops

RUBBER SHOES

Twelve thousand pairs of rubber shoes would make a very large pile, and be worth a deal of money, and yet it represents no more than what was the daily product of the Boston Rubber Shoe Company, whose works were recently partially destroyed by fire in Maldon The company employs one-tenth of the population of the city in which its works are located, and it was in contemplation to increase the capacity so that 20,000 could be turned out But the fire delayed all such plans and reduced the number to 8,000 pairs per diem Workmen are now engaged in rebuilding the shops, and enlarged facilities will be provided The operation of making rubber shoes is very interesting After receiving the crude rubber from the importer, the first step is to cleanse it To facilitate this process, the rubber, which comes in pieces resembling in size and shape a soldier's canteen, is cut into thin slices by means of a large circular knife, revolving with great speed and kept constantly wet. The slices are further reduced in size by another machine, resembling somewhat a hay cutter, and, yet again, a machine cuts the rubber into minute particles, and at the same time removes from it all dirt and other foreign substances that may have got into the material by accident, or been put in by dishonest merchants to increase the weight. Much of the fine finish of the shoe depends upon care at this stage, for if any grit remains it will show itself in the completed article. The small particles of rubber, all clean, are then shovelled into a rolling machine, which transforms them into rough sheets. The sheets are then thoroughly dried in the drying room, a process which takes a very long time, often three months It is an important point thoroughly to extract the moisture from the gum, for if it is made up into shoes before it is sufficiently dry the watery particles will expand under the heat of vulcanization and cause blisters

After the gum is thoroughly dry it is carried into the grinding room and fed into machines called grinders, where, passing between heavy iron rolls, heated with steam, it is softened so as to permit of the admixture of the vulcanising and colouring material. The call for low priced goods has led to extensive cheapening, by which less expensive material than rubber is added to lessen the cost. Coal tar, lampblack and other cheap and bulky articles are thus sometimes used. The gum is then run into long sheets between the large rollers of a huge machine These long sheets are cut into convenient lengths and taken to the cutting tables. The cutting process is not unlike that of other shoes. Men with sharp knives, which are whet to make them cut easily, cut out the soles and uppers by means of patterns. The lasting comes next. Meanwhile in another department the linings, whether of purple stocking net for shoes, or of woollen fleecy cloth for practice, or of heavy felt for boots, are coated on one side with rubber by passing a batch of gum in company with the cloth between heated steel rolls in another calender, and, after being cut into various sizes, many thicknesses at once, with dies in a drop press, are distributed to those who make up the boots and shoes After affixing various strengthening pieces of cloth stiffening, etc., the rubber upper is carefully laid on and sticks fast to the rubber on the cloth with a light pressure and smoothing movement of the hand. No pegging nor sewing is required. The edges are then trimmed, the sole is put on and rolled down firmly, so as to adhere closely in every part. The shoes are now collected and carried to the varnish room, where a coat of elastic varnish is quickly applied and the shoe is hung in the heater. This varnish, besides imparting the lustre finish, protects the rubber from being injured by the intense heat of vulcanization, and further protects the shoes when in use from the effects of the atmosphere It is found that goods which are made up of a dull finish do not last as long as the varnished articles. The heater is a large fire proof room, heated by means of a large number of steam pipes. In the evening, when the heater is full of goods, the doors are closed, the steam turned on and the baking begins. The heat is gradually run up to 300°, under the supervision of experienced hands, who remain all night, carefully watching the progress of the baking, as indicated by thermometers hung up inside, but visible through small windows in the wall of the heater. Too much heat renders the rubber brittle and rotten, and not quite enough heat denies the sulphur in the shoe and makes what are called "white goods" in the trade. These white or sulphurous goods are really better to wear than those commonly put forth, but appearance goes a great ways and renders the shoes unfit for sale. The first effect of the vulcanising process is to make the goods soft, and in this condition the rubber runs together into one homogeneous mass, and finally, when a higher point is reached, it hardens again After remaining in the heater for ten hours the goods are taken out, removed from the lasts, inspected and packed for market There are those who can well remember when there were no rubber shoes, and still a greater number who can recall the clumsy shoes that were worn years ago, and the contrast between the shapeless and heavy articles of the first days of rubber shoes and the tasteful shoes of today is very marked. These shoes were made by the Indians on the banks of the Amazon, and were simply formed on wood lasts, coated by repeated dippings and smokings They were first imported in 1820, and for many years the imports reached the *large number of 300,000 pairs per an*num. The manufacture of these goods was tried in America, and large sums were expended for machinery and experimenting, but it was found that the rubber would not stand the atmosphere, and manufacturers found their goods resolving themselves into a sort of treacle in hot weather. Charles Goodyear solved the problem by his celebrated discovery and made rubber the important article that it now is

THE MECHANIC'S CAPITAL

The mechanic is sometimes looked upon as a man without capital. Sometimes he looks upon himself in this light. This is all a mistake The man who earns $1,000 a year has not only capital, but, in these times of low interest, he has considerable capital.

The manufacturer and the merchant aim to increase their capital by a judicious handling of present means The mechanic does or should try to increase his in the same way Knowledge to the mechanic is capital, because it enables him to command more for his services If he possesses simply the skill of the workman, he can make that skill earn him a certain sum per year, which sum is the exponent of the capital he has invested in his business If, to the skill of the workman he adds the knowledge of the man who thinks beyond present purposes, he earns more, or, in other words, he increases his capital. The young machinist, for instance, who learns machine drawing is morally certain at some time to find use for it where it will stand exactly to him as the money of the capitalist stands to its possessor; although this is hardly a fair statement, because he will at once find use for it. When the man who earned $1,000 a year by virtue of his skill as a workman adds such a knowledge of his business as to earn $2,000, he has as assuredly doubled his capital as the man who has twice as much money to invest in his business as he formerly had

It is earnestly advised that every apprentice to the machine business shall do a little calculation for himself on this subject, always remembering that capital which is the result of skill and knowledge is seldom at a discount, and never lost. It is just at this time in their lives when habits are formed that to a great extent determine the working capital with which they are to go through life.—*American Machinist*.

W Mattieu Williams, in a paper communicated to the *Building and Engineering Times*, describes some experiments which he made some time since to test the durability of stone in an atmosphere more or less infected with sulphuric acid. Some pieces of stone were immersed in moderately strong solutions of sulphuric and hydrochloric acids respectively, and were afterwards carefully examined with reference to any action occurring. At the same time the crushing pressure of samples in their natural state was tested, and similar pieces, after being submitted to the acids, were likewise tested. In cases where there were no evidences of internal disintegration after several days' immersion it was inferred that the stone would stand the acid vapours of the Birmingham atmosphere. Subsequent *practical tests proved these* conclusions to be correct. Experiments of this kind indicated that the worst kind of material for exposure to acid atmosphere is sandstone, the particles of which are held together by limestone or are otherwise surrounded by or intermingled with limestone On the other other hand the best ordinary material for resisting acid atmospheres is a pure sandstone quite free from lime Compact sandstone, such as good homogeneous marble, stands fairly well, although even it is slowly corroded. The corrosion, however, in this case is purely superficial and tolerably uniform. It is a very slow washing away of the surface without any disintegration such as occurs where a small quantity of limestone acts as binding material to hold together a large quantity of silicious or sandy material and where the agglomeration is porous and the stone so laid that a downward infiltration can take place. It must be remembered that although the acid originally exists as vapour in the air it is taken up by the falling rain and the mischief is done to the stone by this acidified water. This, of course, is very weak acid indeed, that which was used for testing the stone being many thousand times stronger. On the other hand, the stones in being tested were exposed for only a few days.

THE METAL TRADE.

THE BRITISH MARKETS

(Per cable to American Manufacturer.)

Wolverhampton, Saturday, August 6, 1881.—It is satisfactory that the returns touching the business during July in the raw iron of Cleveland show a falling off, with a continued augmentation in the stocks. An increase of 5,280 tons in stock upon the month which those returns show is of itself unsatisfactory enough at a time when no increase was expected by the bulk of the people concerned, but it is especially so when it is borne in mind that a calculation based upon the past ten years shows an average decrease in July of 8,000 tons.

High class raw iron also is weaker. Times have greatly changed with the makers of the old fashioned argillaceous pig makers. With these the competition of the hematite iron firms is now no joke. Of the exact competition of these one against the other all the time that professedly a compact to uphold prices exists between them and hinted in my last—a competition, let me add, which has enabled some finished iron makers of my acquaintance to buy at £3 1s 3d per ton iron which is held by another firm at £3 5s, and hold under the delusion that the other firm was refusing to sell at under that higher figure. At no more money than the lower figure splendid Staffordshire all mine pigs have in the past few days been sold. Soon the Staffordshire market will be not a little astonished when it learns, as is the fact, that Earl Dudley's "Buffery" iron has been sold at £3 1s 3d per ton. The designation is taken from the locality in which the furnaces are erected. Reputable in a marked degree is the iron yielded by those furnaces, in which the material used is splendid local stone, and the fuel is the yield of the pure ten yard seams for which his lordship's best collieries are famous. The market price of this iron should be £3 7s 6d. That indeed is supposed to be the price which would have to be given; though it may be conceded that an old customer may be favoured by the taking off of 1s 3d or 2s 6d in some special sales. To my knowledge, however, his lordship's chief agent has just made a sale of 100 tons at the low price I have named—just the price, it will be seen, at which sales are being made very quietly of hematites of an unimpeachable forge quality, delivered at customers' works in central England. Nevertheless the British iron trade is improving.

The demand for rolled iron and steel shows amendment only in those passing instances in which there are workmen's strikes. The chief of these now on relate to the shipbuilding trade on the Wear, where some workmen in the inferior departments are holding out for better terms than the employers are prepared to concede them. Prices of finished iron are remarkably strong compared with the prices of raw material; though it will be hard for them to uphold present rates directly that the demand subsides even slightly. The reassuring fact argues the *Times*, in its weekly review of the iron trade, is that the demand for finished iron continues to improve. And it sees no reason to regret outside that range of the trade immediately affected that the production of pig iron is in excess of consumption. Reasonably enough on the general economy of the question it argues that this excess of production means so much more acquired wealth possessed by the nation. Considering all circumstances concludes the writer, and the steady progress of hand-to-mouth trade during the last two years, "the country will do even better the next year or two." If the United States will only continue to buy no less freely from us in the next than in the past two years this forecast will be realised. Meanwhile raw iron prices in Scotland are being weakened by the action of speculators, who, believing that the recent proposition for a specific decrease in production would be adopted by the masters, bought somewhat heavily for the rise which they hoped would follow. That proposal having fallen through they are now anxious to sell out again. And the same class of thing is operating also to the disadvantage of the Cleveland prices, where speculators were equally eager as those in Scotland. Prices in the Glasgow Warrant Market yesterday (Friday) showed a slight decline upon those which opened the week, business being done in the afternoon at 46s. 4½d. to 46s. 5d. cash, and to 46s. 6d. and 46s. 6½d, one month. The export and home demand in Scotland is entitled to be characterised as decidedly good, yet it is insufficient to cope with the production. The Continental demand keeps pretty well, and on United States account some tolerable sales are also being made. Yet last week's shipments of 9258 tons were a decrease on the preceding week of 3120 tons. It is with no satisfaction that the market learns that of the eight furnaces which I reported a week or two ago were temporarily blown out for repairs seven have this week been relighted—six of them at the Gartsherrie Iron Works. Thus the number of furnaces blowing is again raised to 119.

Regarding the Cleveland trade there is not much that need be added to that which I have said in my opening. The week's business has been very quiet, and yesterday's prices in Middlesborough fell to 36s 6d for No. 3. The most serious feature of the export trade is the decreased business doing in Scotland. During July that market only took 21,635 tons of Cleveland pigs, which was a decrease upon the previous month of over 12,000 tons. Comparing the same periods, Russian demands show a falling off of more than one-half, but France increased her buying from 6,000 to 10,400 tons, and Belgium from 3,700 to 5,000. The quantity taken by Germany during July was within 200 tons of that bought by France. The best foreign customers of Cleveland are in the order mentioned: Scotland, France and Germany.

Heavy quantities of plates continue to be rolled for the shipbuilders. These people have a very busy season before them, as the activity in ship building now presented has perhaps never been surpassed. The bar trade is very steady at about £5 12s 6d per ton. Angles are £5 10s to £5 12s 6d and ship plates £6, than 2½ per cent. Puddled bars are rather quieter at £4 15s net. The total amount of manufactured iron and steel sold to foreigners during last month amounted to 14,188 tons. India was the largest customer, taking 3,400 tons; next stands Spain with 2,000 tons, then Australia with 1,850 tons, and so on.

The improvement in the Bessemer steel trade of Sheffield noted a fortnight ago is maintained, and makers are in hopes of having more remunerative employment in that department. Steel rails cannot be quoted any higher; recent contracts have been rather smaller than those placed a fortnight or three weeks ago, but the prices obtained have not been more profitable. Steel plates for marine boiler making are selling freely on a basis of £18 per ton, and numerous mills engaged in this class of trade are running actively. Best cast steel is selling freely, for common qualities are in much part neglected owing to the competition of Bessemer billets of guaranteed temper. In the railway spring and axle trade there is slightly more doing. The armour plate works continue quite busy.

Although the file trade as a whole is still in an unsatisfactry position, yet there is less inactivity to be seen than there was a few months ago. Some good orders have come to hand from the United States for special classes of goods. They are the first of any moment that have been received for some time, and that they have come is in the opinion of some of the Sheffield houses partly attributable to the fact that the American makers have put up their prices. It is also noticeable that the orders are for "hand cut" files. With the French and other foreign markets an improving trade is being done.

There is a well sustained demand for all classes of steel implements used in the garden and the field, and some houses are still well supplied with orders. There is a more active demand from certain markets for the better descriptions of cutlery. The razor trade has never been known to be so brisk as now, and houses that had stocks, the accumulation of years, have cleared them out, and are now unable to execute orders as fast as they are wanted.

In South Staffordshire the business current in manufactured iron continues fairly active, and the tone of the market is firm, more particularly for sheets, hoops and galvanised iron. The most potent factor of the improvement, which has lately taken place is the active demand from Australia, New Zealand, India, and various South American markets for galvanised corrugated sheets. Plain sheets are sharing to some extent in the improvement; and for iron of various descriptions there is a growing local demand for manufacturing purposes, in connection chiefly with the iron tube, girder, carriage ironwork, and heavy iron foundry branches.

In Birmingham home orders, which are specially good just now from Scotland and some of the west coast watering places, affect chiefly furnishing ironmongery; and agricultural tools and implements and shipping tackle continue in good request for the northern shipbuilding districts. Most of the leading railway companies are liberal customers at present for railway stores, shedding, lamps, nuts, bolts and spikes; and cable contracts contribute to the activity of some of our local wireworks at which high qualities of wire are produced. The great strike in the wrought nail trade continues. There is a considerable business stirring in cultivating and edge tools for the Indian and South American markets, but the prices necessitated by competition are very unsatisfactory, and it is only makers of leading reputation who can command fairly remunerative terms. In the metallic bedstead branch there is a little more doing, both for home and export. In the latter department the Spanish West Indies, the Cape, and Australia are conspicuous. Machinery is selling freely for export, the demand being principally for light driving engines, pumping and stamping machinery, hydraulic apparatus, crabs, winches etc. Australia, India, Russia, and the Levant are taking large quantities of machinery just now.

The indents both from New Zealand and Australia continue on a tolerably large scale, more particularly for heavy goods. Trade with the South African colonies appears to have sustained a check since the conclusion of the Basuto and Transvaal wars; but business prospects there are considered satisfactory, and in certain lines such as tools, implements, carriage iron work, fencing wire, and fancy goods, trade is fairly active. Indian trade is fairly steady with the north-eastern provinces of the Continental markets; France and Spain at present exhibit the most vitality as regards the productions of this district.

THE LONDON MARKET

The following were the closing prices in the London metal market August 4th 1881 —

	£	s	d	£	s	d
IRON						
Bars, Welsh (in London)						
Bars, Swedish (in London)						
Bars, Staffordshire (in London)						
Pig, G.M.B. (f.o.b. Clyde)						
Rails, Welsh (at works)						
Rails, Northumberland (at works)						
STEEL						
Bessemer rails (at works)	6	15	0	7	0	0
English spring	11	0	0	15	0	0
Swedish (in kegs)						
Swedish (in faggots)	15	10	0	0	0	0
COPPER.						
Sheathing and sheets	72	0	0	73	0	0
Flat bottoms	74	0	0	75	0	0
Tough cake	64	0	0	65	0	0
Best selected	75	0	0	76	0	0
Burra or P.C.C.	67	10	0	0	0	0
LEAD (per ton)						
English pig, W.B.	17	5	0	0	0	0
English sheet	18	0	0	0	0	0
English red	16	15	0	0	0	0
English white	21	15	0	22	15	0
English patent shot	17	5	0	0	0	0
Spanish pig	16	2	0	0	0	0
TIN (per ton)						
English ingot	97	0	0	0	0	0
English bars (in barrels)	0	0	0	0	0	0
English refined	99	0	0	0	0	0
Banca	0	0	0	0	0	0
Straits	92	7	6	93	10	0
TIN PLATES (per box)						
Charcoal, I.C., 1st quality	1	2	0	1	4	0
I.C. Coke	0	18	0	0	19	0
SPELTER (per ton)						
English (Swansea)	19	10	0	0	0	0

UNITED STATES MARKETS

Pittsburg.

Pig Iron—The market thus far this calendar week has been extremely quiet, some agents not having sold any iron at all. It is possible, however, that there may be considerably more sold during the remainder of the week than there has been thus far. This is often the case; indeed, it appears to be the rule that there is more iron sold in the latter than in the first part of the week. It is not probable, however, that the aggregate will be very large. The indications, at any rate, do not point that way. The extreme quietude, notwithstanding the enormous consumption going on, is explained by furnace agents as follows: Consumers, generally speaking, have as much iron as they want for present use, and do not care to buy except at rates that have been current for two or three weeks past, while on the other hand makers, as a rule, will not sell except at an advance, and many of them have withdrawn their iron from the market. We are advised of one case where a maker has given a consumer the option of taking a lot of iron at last week's figures if he will take it within the next two days from this writing. If at the end of that time the offer is not accepted the iron will be withdrawn from the market, unless better figures are tendered. No matter, however, whether business at the agencies is dull this week or lively next week, the enormous consumption of pig iron still goes on, and the demand must be satisfied. It is altogether probable that more pig iron is being melted in Pittsburg at the present time than ever before. Some idea of the amount of pig consumed here in a year may be gained from the fact that in the first half of the present year the receipts of the same by rail and the Ohio river amounted to 177,334 tons, or at the rate of 354,000 tons per year, and that the make of the city furnaces in 1880 was 300,000 tons—these two sums making a total of 654,000 tons. It should be taken into consideration, too, that there was not near as great activity at the rolling mills and foundries here in the first half of the present year as there promises to be in the latter half. It is probably within bounds to say that fully 700,000 tons of pig iron will be consumed in this market this year. The last sale of neutral iron smelted from native ore was at $22.50 per ton, 4 months, and $22 cash. Neutral mill, smelted from Lake Superior ore, may still be quoted at $24, 4 months, while Bessemer is stationary at $27@27 50. No. 1 at $25 and No. 2 at $22.50—all 4 months.

Nails—The demand for nails continues to be light compared with that for other iron products, and the manufacturers are somewhat puzzled thereat. They think, however, that the substitution of wire fencing for board fencing in the West has a great deal to do with it; and this certainly is at least one cause, for the former kind of fencing requires no nails at all, while the latter requires an immense quantity. Prices remain as quoted last week: $3 per keg for 10d to 60 days, or 2 per cent. off for cash, and an abatement of 10 cents per keg on car load lots.

Steel Rails—There is no change in the situation since last week. The demand is still enormous, with prices unchanged. For prompt delivery $40 and upwards is quoted, while $60 is quoted for next year's delivery.

Railway Supplies—Prices remain as quoted last week. Spikes, 3c per pound; splice bars, 2.40c; track bolts, 3½c—all thirty days.

Steel—The demand for steel continues to be very heavy, and prices have an upward tendency, although they are not quotably higher. Steel does not feel the fluctuations in the market as much as iron and nails. It is usually last to go up and last to come down, and does not rise as high nor fall so low. Prices are very firm at the following quotations: Best quality refined cast steel, 11 to 12 cents per pound, as to quantity purchased; crucible machinery steel, about 7 cents, and Bessemer and open hearth do at 5@5½ cents, Bessemer open hearth spring, 4@4½ cents, and do plough 3½@4 cents. Open hearth plough steel, 4x6 inches, $45 per net ton at mill.

Old Rails—Are firm at last week's quotations, namely $40 net for iron and $41 50 for domestic heads.

Scrap Iron—Ordinary No. 1 wrought is still bought by consumers at $26@27 per net ton while No. 1 railway machinery scrap fetches $23 cash. We learned of a purchase of 100 tons track and shop scrap, mixed, at that figure. Hammered car axles $48 asked. Cast iron scrap may be quoted at from $15 per gross ton to $22, as to kind. Grate bars are worth $18, while old rails fetch $18@20, and if broken up about $2 more. Old car wheels $23@27 per gross ton.

New York.

Pig Iron—American. In nearly every respect the market has ruled just about as described in last week's report. There is apparently about the same steady movement of supplies into consumption, but not a great deal in the way of large purchases and absolutely no purely speculative business. There may be some grounds for the opinion entertained by some members of the trade that the unfavourable accounts coming from the Scotch and English markets will ultimately have no little influence upon the local market, but as yet prices here are well maintained and not likely to be unsettled unless the importations run beyond the present comparatively full total. At all events, there seems to be very little probability of extensive amounts of good brands of American pig being left over to offer upon the open market during the remainder of the year, while it is scarcely possible that foreign makers will take the risk of sending forward large blocks of even the best brands, so long as there is every probability that such action would lead to a depreciation in the value of their goods. A lot of 2,000 tons No. 2 X Thomas is said to have been sold from second hands at about $21.75, but aside from this the transactions reported are in lots of less than 500 tons. A few lots of good brands of No. 1 X foundry can be secured at $24, but most holders are asking $24 50@25, while it is even said that some are refusing bids of the first named price. For No. 2 X foundry $22 seems the bottom price, with $23 the other extreme, and $21@22 are now the prices generally named for gray forge of reliable make.

Scotch—The continued free arrivals leave a few lots over which cash buyers are able to pick up from dock at comparatively easy prices. Purchases of round lots for future shipment are also said to be made occasionally on special terms. When it comes to store lots there is nothing short of firmness noticeable, however, the supply being kept under good control by steady purchases of 100 tons and under. The week's sales, including lots on spot and to arrive, are placed at about $21 for Eglinton, $22 50 for Carnbroe, $22 50 for Glengarnock, $23@23 50 for Gartsherrie and $23 50@24 for Coltness.

English—It is understood that Middlesbrough pig of good brands can be bought in round lots for future shipment at prices about $50 below the lowest named a week ago. The moderate supply here is held firmly, however, about $18.50@19 for No. 3 and $17.50@18 for No. 4 proving the very lowest figures that holders will listen to. Bessemer is still quoted at $24@25, according to brand and delivery, with a very fair demand, and some fair amounts said to have been placed, the total of which is estimated at about 15,000 tons.

Steel Rails—Sales of about 20,000 tons American are reported, about one-half of which it is understood were classed at $55 at mill. The demand continues more or less active, and the majority of makers are asking $57 for next year's deliveries. Foreign on the spot are held at $63@64, but can be secured at $61@62 here for future shipment.

Iron Rails—To all accounts there is a good demand for American, and a fair amount of sales making, though no important individual sales are reported. Prices are quoted irregularly at from as low as $45 up to $50 for heavy section at mill. Foreign are still quoted at $48@50 laid down here, but no large purchases are reported.

Old Rails—Last week's advance seems to have checked the buying somewhat, though a fair number of sales have been effected. It is claimed by some parties that the market just now is not so buoyant in tone as it was four or five days ago, but $37.50 for tees and $39.50 for double heads seem to be the lowest prices holders will quote. Sales of 3,000 tons at the above prices were reported.

Scrap Iron—The supply of good quality wrought scrap is still moderate, and, under a continued good demand, prices hold very firm. Selected yard lots are held at $39, and it is doubtful if fair quality can be bought from store or to arrive at below $27@28. About 900 tons are said to have changed hands.

Philadelphia.

(From our own Correspondent.)

PHILADELPHIA, August 30th.

Iron is in extraordinary demand, and prices rule firm. Importers are buying and selling vigorously on paper. This month closes up the most prosperous month the iron trade has ever seen, and September promises to bring an increase in the volume of business and at equally remunerative prices. Quotations are as follows: Pig iron, No. 1 foundry, $24 to $25; XX, $22; Forge irons, $21 to $22; Scotch, $21 to $23; English, $17 to [illegible], Bessemer [illegible] are out of the market [illegible] refuses to sell at [illegible] delivery makes the position [illegible] of the market. It is the [illegible] trade in check and keeps [illegible] at any price and at all hazards [illegible] stocks are now so low that [illegible] no harm, and stocks abroad [illegible] at present prices. The [illegible] to furnaces are very low but [illegible] the best obtainable under [illegible] prices of coal and ore [illegible] and is in active demand [illegible] vance, and thus increase slightly [illegible] pig. High prices are [illegible] trade is buying evenly. A few [illegible] leading consumers have bought [illegible] six months stocks. A half dozen larger companies have not a ton of grade now to offer on the market [illegible] are not quoting prices high enough [illegible] new customers. They are simply completing existing contracts and will not give an artificial or inflated value to [illegible] iron by fancy quotations when [illegible] none to sell. This was the error committed last year. The return of cold weather has permitted a slight increase in the output of rolled iron. Mills have very fair all last week at $40 to $50. Blooms are very scarce, and only sell above $70, but the bulk of accepted contracts are booked at $63 to $65. Bar mills are in their overcrowded condition, and prices are firm at 2¼ cents. Higher prices are talked of, and may be asked in two or three weeks. Buyers are willing to pay any price for prompt deliveries, but all mills have been sold ahead at 2 4 rates, and cannot take advantage of the advance until present orders are cleared up. Mills have from 60 to 90 days' orders in hand but so arrange deliveries that they can accommodate new buyers. In structural shapes there is a very active demand at 2 7 for angles, 3.3 for beams, 3 4 for channels and 3½ for tees, and inquiries are coming in daily for supplies, which denote continued activity at exceptionally remunerative prices. Construction iron of all kinds is in very active demand, and some mills are unable to promise prompt deliveries before January. Others have some disengaged capacity all through the fall. Tank is firm at 3¼, refined flange 3. Wrought pipes are active at 60 off, and tubes 40. Steel rails are fairly active. Eastern transactions were about 45,000, to 50,000 last week, and at $37 to $60. A good deal of business goes abroad at $60 for Southern delivery. Iron rails are $48, old tees $18. Steel ingots active at $44. The local industries were never more closely pressed and prices are firm in all branches. Late in the week several large orders for mining machinery and rolling mill machinery were received.

Shipbuilding is going on at a greater degree than ever. Every yard is crowded, and work is waiting. Shipping is paying well. The coastwise trade is increasing, and domestic commerce with the Southern States is steadily improving. Terminal facilities are being perfected by the construction of piers building of two grain elevators, the extension of railway tracks, etc. The grain shippers held a meeting on Wednesday to discuss the revised form of grain contract imposed by the London Corn Trade Association. The merchants of New York and Baltimore have taken action already.

Oil exports are increasing. The fleet now loading will sail with 3,399,475 gallons this week. Seven vessels cleared last week with 327,862 bushels grain. Exports of corn since Jan. 1, 4,967,037 bushels; wheat, 7,270,034 bushels. Oil exports since Jan. 1, 52,280,074, same time last year, 36,249,092 gallons.

It is proposed by McKay, the great contractor, to lease the Reading shipyards and shops up the Delaware river which have been idle so many years. This is one more evidence of the increasing prosperity. The vast undeveloped coal lands of this company are improving in value, and it is probable that this great property, will yet swing clear of all difficulties and become a paying concern.

There have been 3,339 persons maimed or injured and 127 persons killed, in the streets of London during 1880. Of these "light carts" are responsible for 1,043, cabs for 800, omnibuses and cars 362, broughams and carriages for 307, heavy carts, waggons, drays, and vans for 241; but of the 592 accidents by vans 45 were fatal, whereas of the 1,843 accidents by cabs, only 43 were fatal.

Respecting the commercial results of the Telegraph Department, the Postmaster General says in his report just issued:—"From the circumstance that many items are included in the annual telegraph expenditure which represent capital outlay, it is obvious that the net profit realised in any particular year does not accurately measure the results of the telegraph business for that year regarded from a commercial point of view. By order of the House of Commons a return is annually laid before Parliament showing the commercial results of the telegraph business for each year. Although the return for 1880-81 is not yet ready to be presented, the following figures may be regarded as substantially correct:—Aggregate amount of capital, including all the sums which in business would be charged to capital account, £10,685,926; revenue, 1880-81, £1,633 884; expenditure, deducting the items charged to capital, £1,189,42[illegible] balance of profit (equal to 4.17 per cent on a capital of £10,685,926), being the full amount available on commercial principles for dividend on capital or for a reserve fund, £144,459.

LUMBER TRADE.

CANADIAN TIMBER AND LUMBER TRADE

(*Toronto Mail.*)

It is most pleasing to hear that Canada, some people are inclined to speak, is a country and lamentably of its dense and valuable forest, is being rapidly depleted of wood and that the supply, with the present drain upon the resources, cannot last longer than ten or twelve years more. Yet such is the fact, if the statements of prominent timber merchants who are qualified to speak on such a matter—are to be credited. Timber is undoubtedly becoming very scarce and this fact has been made abundantly apparent during the last two or three years. Within the present year, extensive fires and hurricanes have assisted materially in the work of depletion, for the flames have claimed large tracts, while gigantic trees have been blown down by the strength of another element, to gradually decay and become useless before the lumbermen had reached them. Next year England, to which country of course, the great quantity of the timber felled is shipped, will be directly notified of the fact that Canada is not an inexhaustible forest by the failure to receive as much of the commodity as usual. White oak is getting very scarce and difficulty is also experienced in obtaining ash and red pine. Rock elm, for the Quebec market, to be used for shipping purposes, is about thinned out, and walnut will soon be an unknown article. With the increasing scarcity of timber comes a decrease in prices. White oak is not as good as last year. It is hard to be got at, and when obtained is hard to sell at prices even lower than last year's. A reduction of ten cents per foot is reported as the result of comparison between the rates ruling this season and those which prevailed during the previous one. Waney ash, sold for shipping purposes in Quebec, is selling at 25 cents to 26 cents per foot, and shippers in this city contend that there is no money, for them at all events, in such prices. Rock elm square timber has been shipped in large quantities this season from this port at 25 cents to 26 cents per foot, from which prices, it is said, there are no profits accruing to the shipper. Prices for waney board timber are a little better than last year, an advance of a few cents per foot being obtained. Messrs. Platt & Bradley, of Hamilton, delivered a large quantity of waney ash this season at 25 cents per foot, and this had been contracted for last year. Notwithstanding the growing scarcity of timber, however, the prices are not as high in Liverpool this year as they were in the same place twelve months ago. This statement will scarcely be credited, for obvious reasons. Other explanations have been given for the small quantities received of the higher grades of wood, besides those already mentioned. It is asserted that as the best wood is gradually being cut down the partial clearings thus made extend further and further back from the ports to which they must be conveyed for shipment, and therefore the trouble and expense of removing it to the lakes is proportionately increased. Sooner than suffer either one or the other, many persons engaged in the business now retrace their steps and cut down timber which they had hitherto passed scornfully by. A number of people are now engaged in cutting pine who never touched it with an axe before. Again, that there is now such a good demand in the United States for sawed lumber that attention has been turned in that direction and to the business created by that article. Furthermore, that as the country is being gradually cleared, and the timber being consequently more exposed to the weather, the influences thus brought to bear are affecting the decay of the trees, the rapidity of the decay being regulated by the different degrees of sensitiveness possessed by the different kinds of wood. Beech and maple stand the weather well, but rock elm, ash and pine yield quickly.

The shipments of timber from this port have not yet, however, given any indication of the early famine which is feared. They have not only not diminished in extent, but have actually increased. Up to the present time fully one-half more timber has been shipped from Toronto this season than was shipped from here during the same period last year. An idea of the business done may be formed from the following figures, as they represent an approximation to the quantity of timber shipped from this port during the present season by the prominent merchants throughout the province:—

McLean & Stinson, Weston, 200,000 feet.
Burton Bros., Barrie, 100,000 feet.
Cook Bros., Toronto, 116,000 feet.
O. F. Wright, Barrie, 150,000 feet.
McArthur Bros., Toronto, 250,000 feet.
J. Latimer, Toronto, 250,000 feet.

These figures added together make a grand total of 1,125,000 feet of timber shipped from Toronto during this season up to date.

A large increase in the receipts and shipments of lumber during this season up to date, as compared with last year, is reported. This year the cut of timber has been rather short, but prices are firmer than formerly, with an upward tendency, the present average being about $13 per thousand. It is estimated that the total quantity of lumber cut this year in Ontario alone will amount to about 500,000,000 feet, which, calculated at $12 per thousand, would represent a cash value of $6,000,000. Good stock however, will bring from $14 to $15 per thousand, while for the lowest grades $10 per thousand feet is paid. The common grades are $1 per thousand feet, and the higher grades $8 to $9 per thousand feet, higher than last year.

Comparing the present season with two years ago, the prices for the higher grades are advanced $8 to $10 per thousand feet. A careful estimate places the quantity of lumber handled at this port during this season up to the present time at 150,000,000ft, an advance of about 25,000,000 over the figures recorded for the whole of last year. Of course these figures do not represent the actual shipments from port, for a great part of the lumber has been retained in Toronto, and must still be included in the business transacted. All of the merchants agree that if it had not been for the lack of a continuation on the railways the quantity of lumber passing through the city this year would have been much greater. The Toronto & Nipissing railway has been undergoing many alterations recently, and, therefore, could not devote that attention to the conveyance of lumber which the dealers therein would have desired. For the same reason the shipments by the Northern railway have not been as large as they otherwise would have been. For selfish reasons the Toronto, Grey & Bruce Railway Company has given the right of way to woods in preference to lumber, and the Grand Trunk railway has its hands full of general freight. During the last week, however, lumber has been coming down pretty rapidly. A great quantity of lumber is also "hung up," because there is not sufficient water in the rivers to carry it down. Some authorities say there is as much as twenty-five to thirty per cent. of the logs cut since last year lying untouched in this manner, and for the reason above stated, but others state that not more than ten per cent. of the cut is so situated, and that only about 20,000,000 feet is at present hung up.

Probably many will be interested in learning the amount handled during this season by each of the principal wholesale merchants of Toronto. Mr. S. S. Mutton has since the 1st of January up to date shipped about 4,000,000ft. of lumber, or about one-third more than during the same time last year. Messrs. McIntosh & Co. within the same period shipped 7,500,000 feet, and 18,000,000 feet passed through the hands of Mr. S. C. Kenady. Donnegh, McCool & Oliver have handled about 11,000,000 feet since the 1st January, which is already ahead of the business done by the same firm during the whole of last year, when 10,000,000 feet of lumber were shipped. In 1879 they shipped 11,500,000 feet, but during the previous year the figure reached only 7,500,000. Mr. D. S. Briggs has already shipped 4,000,000 feet, and will probably have to announce an improvement in his business as compared with last year, when only 4,000,000 feet had been shipped when the season closed. A prominent firm has already shipped 30,000,000 feet, and probably 5,000,000 more would have passed through their hands if the required number of cars could have been procured. The mills belonging to this firm have a combined capacity of 87,000,000 feet per annum. J. & F. N. Tennant have handled about 20,000,000 feet so far this season, and Thompson, Smith & Co. about the same quantity. The lumber business has been greatly injured this year by the number of mills destroyed by fire. More saw mills were burned last month than in any one month for the last ten years. The good prices, however, are likely to be maintained, or even rise higher; but there is no better demand for the poorer grades of lumber than formerly. The lumber is gradually deteriorating from some cause or other not yet explained, and as a whole is becoming coarser.

A Boston paper says that a short trip among the lumbermen fully substantiates the statements made a few days since that the Eastern furniture manufacturers are seriously troubled at the scarcity of black walnut timber, and that the whole supply of the United States has now become entirely inadequate to the demand. The difficulty of obtaining this wood, which is now so popular, is so great that the question is brought sharply home—What is to be done in the future, and to what place are the dealers to look for a supply? Within the last year he price has increased twenty-five per cent., but even at such advanced figures it is almost impossible to secure the needed stock. A few years since a man would go west and purchase 500,000 feet of one dealer, but now he must journey from town to town, picking up a few thousand feet wherever he may chance to find any for sale, and accounting himself lucky if he obtains the desired amount at almost any cost. There are dealers always ready to pounce down on any lot of walnut that a farmer may wish to dispose of, and, as one of our dealers said, "if you get your eye on a few hundred feet you must sit down on it immediately, and stay there until you clinch the bargain, for if you leave it for an instant some one else will take advantage of your absence, and when you return you will to a certainty find it gone."

The terms continues says the *Mississippi Lumberman*, in the lumber trade, with no signs of abatement or symptoms of weakness, outside of Chicago, either in the demand or values. From all our advices we doubt whether any standard or desirable stuff can be bought in any quantity at a discount amounting to anything in the West. Chicago exhibits no more than usual chronic disposition to "raise hell and sell lumber," as one recently expressed it to me. She succeeded in beating down short piece stuff fifty cents two weeks ago at the auction, and its newspapers will not get done talking about the "great break" before Christmas, but with dimension boards and strips running from $1 50 to $20 by the cargo at Chicago the Mississippi valley men can afford to keep their under garments on. The streams are well high cleared of logs and the crop delivered at the mills. A few small lots remain hung up and efforts to get them out are being made on the Chippewa and St. Croix during the week. There are no logs on the market at any price. St. Louis shipments reach ten millions per week, which is about the maximum capacity of her railroads with their present equipment. Minneapolis is still agitated over a lack of transfer facilities which greatly hinders trade. St. Paul dealers report a large accumulation of orders which cannot be filled, and numerous inquires, especially from the Southwest. The lumber line shipments exceed three million feet per week, which takes all the cars the road can muster. The wheat of the Northwest will soon commence moving, and then the troubles of the lumberman will multiply indefinitely, as the grain will take the cars.

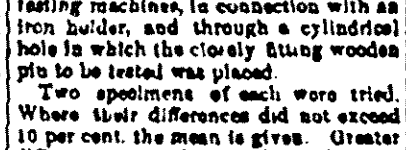
RELATIVE STRENGTH OF WOOD.

Notwithstanding the common use of wood for pins or treenails, no experiments that I know of (writes Mr J. C. Trautwine, C.E., to the *Wood Worker*) except one or two isolated ones, and they imperfect, have been tried for determining the extent of its reliability for this purpose. With a view to supplying this deficiency in some measure, I have recently tested several American woods in the shape of cylindrical pins, 64 of an inch (or full ¾ inch) in diameter. I used one of Richle's well known and accurate testing machines, in connection with an iron holder, and through a cylindrical hole in which the closely fitting wooden pin to be tested was placed.

Two specimens of each were tried. Where their differences did not exceed 10 per cent. the mean is given. Greater difference must of course be of frequent occurrence, even in good sound specimens. All the specimens were fairly seasoned and without defects. The central pieces sheared off were ¾ inch long. The single circular area of each pin was .822 of a square inch; and, since .641 by 1.28 equals one square inch, it follows that if the result in the table be divided by 1.35 the quotient will be the actual double shearing strength found for each pin of full ¾ in diameter.

The following table gives the result in pounds per square inch of total sheared area:—

Ash	6,290
Beech	6,223
Birch	5,746
Cedar, white	1,572 to 1,819
Cedar, Central Am.	3,419
Cherry	5,046
Chestnut	1,388
Dogwood	6,319
Ebony	7,168
Gum	5,890
Hemlock	2,740
Hickory	6,045 to 7,376
Locust	7,142
Maple	6,288
Oak, white	4,438
Oak, live	8,488
Pine, white	2,860
Pine, yellow, Northern	4,340
Pine, " Southern	5,776
Pine, " very resinous	6,203
Poplar	5,613
Spruce	4,200
Walnut, black	4,788
Walnut, common	2,880



NOTICE TO CONTRACTORS.

SEALED TENDERS addressed to the undersigned, and endorsed "Tender for Post Office, etc., Belleville, Ont.," will be received at this office until THURSDAY, the 22nd day of September next, inclusively, for the erection of Post Office, etc., at Belleville, Ont.

Plans and specifications can be seen at the Department of Public Works, Ottawa, at the Custom House, St. Catharines, and at the office of R. C. Windeyer, Esq., Architect, Toronto, on and after Friday, the 3rd September.

Tenders must be made on the printed forms supplied.

Each tender must be accompanied by an accepted bank cheque, made payable to the order of the Honourable the Minister of Public Works, equal to five per cent. of the amount of the tender, which will be forfeited if the party decline to enter into a contract when called upon to do so or if he fail to complete the work contracted for. If the tender is not accepted the cheque will be returned.

The Department will not be bound to accept the lowest or any tender.

By order,
Y. H. ENNIS,
Secretary.

Department of Public Works, Ottawa, 23rd August, 1881. (60-3)

NOTICE TO CONTRACTORS.

SEALED TENDERS addressed to the undersigned, and endorsed "Tender for Post Office, etc., Belleville, Ont.," will be received at this office until THURSDAY, the 22nd day of September next, inclusively, for the erection of Post Office, etc., at Belleville, Ont.

Plans and specifications can be seen at the Department of Public Works, Ottawa, at the Custom House, Belleville, and at the office of R. C. Windeyer, Esq., Architect, Toronto, on and after Monday, the 5th September.

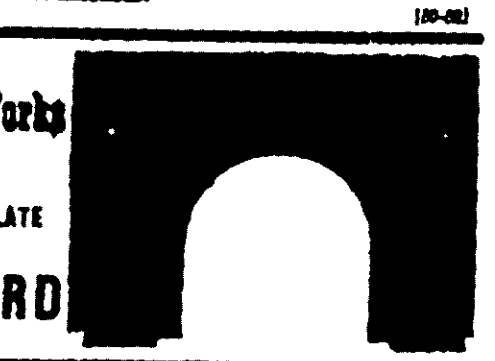
Tenders must be made on the printed forms supplied.

Each tender must be accompanied by an accepted bank cheque, made payable to the order of the Honourable the Minister of Public Works, equal to five per cent. of the amount of the tender, which will be forfeited if the party decline to enter into a contract when called upon to do so, or if he fail to complete the work contracted for. If the tender is not accepted, the cheque will be returned.

The Department will not be bound to accept the lowest or any tender.

By Order,
Y. H. ENNIS,
Secretary.

Department of Public Works, Ottawa, 24th August, 1881. (60-2)



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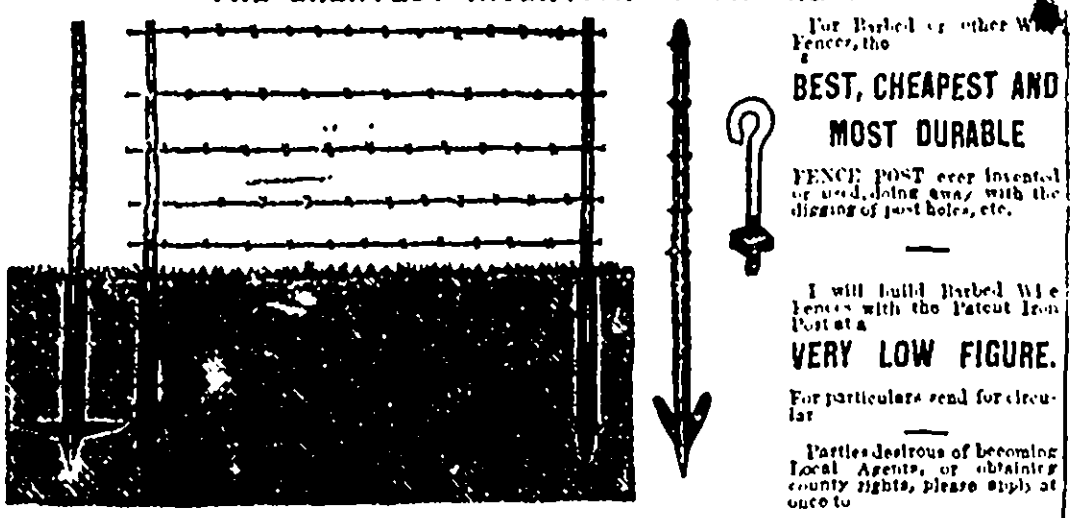

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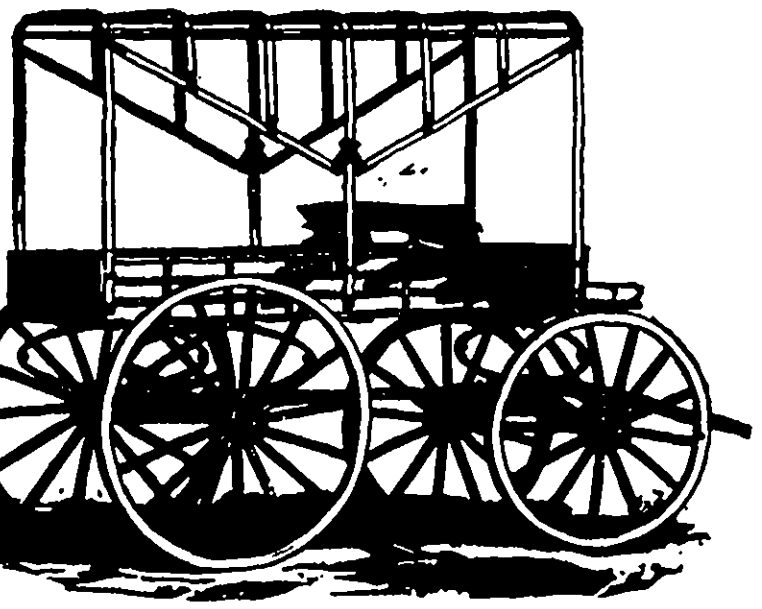

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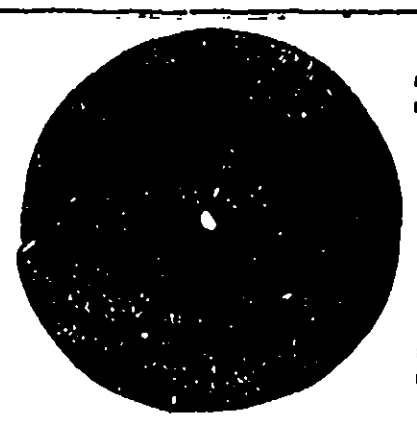

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