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## The Industrial World

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## EMIGRATION STATISTICS.

The British Board of Trade returns the emigration from and immigration into the United Kingdom for the year ending 30th December, 1880, were recently published. Only in previous years did the emigration exceed that of 1850—in 1853 and 1854, when the numbers were 278,123 and 267,947 respectively. In 1880 the number was 227,542. The following statements are from an analysis of the returns in *The Colonies and India*. The excess of emigrants to, over immigrants from, the various countries in 1880 was as follows:—United States, 140,032; British North America, 16,214; Australasia, 19,274; all other parts, 6,995. Compared with the previous year, the increase to the United States alone was 10,000, while the reduction to Australasia was more than 50 per cent. upon the figures of the previous year. In 1876 and 1877 between 60 and 70 per cent. of the whole excess of emigration went to Australasia; last year it was less than 10 per cent. of the whole. The emigration of persons of Irish origin, which had fallen very low between 1875 and 1879, suddenly rose last year to 93,641, or 41 per cent. in excess of the annual average of the last ten years. The proportion of Irish emigrants to the total from the United Kingdom, which had fallen to about 25 per cent., rose to 41 per cent. The figures are:—English emigrants, 111,845, or 49 per cent. of the whole; Scotch, 23,950, or 10 per cent.; Irish, 92,641, or 41 per cent. The fact that two-thirds of the Irish emigration occurred in the first six months is thought to point to the suddenness of the American trade revival as the cause for the increase generally. Coming now to the emigration statistics themselves, respectively of the relation to immigration, there left the shores of the United Kingdom for the United States, 69,081 English, 14,471 Scotch, and 83,018 Irish; for British North America, 13,541 English, 3,221 Scotch, and 4,140 Irish; for Australasia, 18,176 English, 3,059 Scotch, and 5,949 Irish; for all places, English 104,7, Scotch 1,305, Irish 834. The total is 227,542 compared with 242,274 in 1879. Including foreigners

322,294 individuals left the shores of the United Kingdom, 281,560 as steerage-passengers, and 50,734 as cabin passengers. Of the former 156,150 sailed from Liverpool, 29,058 from London, 19,068 from other English ports; 20,340 from Glasgow, and 53,944 from Londonderry and Cork, all of whom went to the American Continent, in the proportion of 17 to the Republic to one to the Dominion. The total of those who went to British North America was 29,340; to Australia and New Zealand, 25,439; to the East Indies, 4,527; to the British West Indies, 1,643; to the Cape and Natal, 9,803; to British possessions in Central and South America, 2,203; and 2,100 to all other possessions. The proportion of male to female emigrants was nearly five to three, namely, 203,294 to 123,009; but among British subjects only the relations of the sexes were somewhat different, and in round numbers there were thirteen males to nine females. The Irish took most women with them, which is an indication of a more permanent separation from the mother country, their relations being 45 men to 45 women; the English were seven to four, and the Scotch thirteen to eight. Of the 188,950 adults of British origin of both sexes, 10,971 men and 25,239 women were married, the explanation of the excess being that the surplus women were going out to join their husbands; 92,470 were single men, 51,107 were spinsters; and there were also 38,692 children under twelve years of age, for whom the colonial will be home life to an extent that it never can be to the parents. Of the table of "Occupation of British and Irish Emigrants," the following are the principal features: General labourers, 50,064, of whom 5,085 went to Canada and 1,712 to Australasia; gentlemen, professional men, and merchants, 11,762, of whom 2,381 went to Canada and 1,261 to Australasia; farmers and graziers, 7,212 (428 to Canada and 784 to Australasia); mechanics, 6,639 (984 to Canada and 123 to Australasia); agricultural labourers, gardeners, carters, 3,921 (1,214 to Canada and 1,084 to Australasia). Of all other trades, the locksmiths and gunsmiths despatched the smallest number, namely, 499, two of whom went to Australia and two to the States. The United States had far the best share of all these useful classes. The women are thus classified: 18,757 domestic and farm servants, nurses, &c.; gentlewomen and governesses, 96; milliners, dressmakers, needlewomen, &c. 277; shopwomen, 14; other trades and professions, 318. Servants and nurses who went to Canada numbered 1,321, and to Australasia, 2,762; the gentlewomen and governesses to the two colonies respectively were 8 and 26; milliners, 1 and 113; the shopwomen, 9 in number, went only to Australasia. Settlers on the American continent remitted, as far as can be ascertained, £1,403,241 to their friends at home in 1880, while those in Australia and other places remitted, £71,407. Since 1848 £23,510,669 reached people in the United Kingdom from their friends across the Atlantic, besides £309,376 from the Australian colonies since 1875. This information was obtained from banks and mercantile houses, and therefore the money forwarded through private hands is not included. The proportion of gross emigration to the population was 0.51 per cent. in the ten years ending 1880; it was 0.52 in the previous ten years; and in the previous terms of eight years and three years, reaching back to 1853, it had been 0.55 and 0.54. Since 1852 during 29 years, the total number of British and Irish emigrants has been: to the United States, 3,025,594; to British North America, 131,694; to Australasia, 936,022; to all other places, 170,111; and these figures make a total of 4,503,431.

## THE DUTIES ON WOOLLEN GOODS.

The objection is made to the present scale of duties on woollen goods, that it puts higher rates on articles used by the poor than on those used by the rich. To which the answer is, that it could not be otherwise, if the home manufacturer of woollens is to have any protection worth speaking of. The *Toronto Globe* has paraded figures showing that a greater duty *ad valorem* is levied on coarse and cheap woollen goods than on those which are fine and expensive. Of course it is the specific duty which does it—the duty of 7½ cents per lb. in addition to the 20 per cent. *ad valorem*. The *Globe* finds that the duty is, according to value, higher on low priced tweeds than on high priced; and the same with regard to overcoatings. Coming to fine broadcloth, the duty on that, *ad valorem*, is low compared with the duty on common stuffs for the wear of "the million." And therefore, it is contended, the new tariff taxes the poor highly, while letting the rich off at lower rates. The answer to this is that the poor man, who wants to buy cheap woollen goods, free of taxation, has nothing to do but simply to buy Canadian goods, which pay no duty. It so happens that our home production is made up chiefly of goods for everyday wear, though under the new policy the encroachments of Canadian manufacturers on the finer lines of production are even now rapidly extending. An *ad valorem* duty, by itself, would be no protection at all against English competition in the heavier and coarser kinds of woollen goods. The English shoddy factories turn out goods of so low a value, per yard, that they could be sold here at a profit after paying even higher *ad valorem* duties. Goods of this kind are, however, the merest trash, and it is actually conferring a favour on the "poor man" to keep them out of the country. It is true that "shoddy" is made in Canada as well as in England; nay, we will go further, and say that the home manufacture of "shoddy" has been greatly stimulated by the new tariff. But what has to be observed is that there is an immense difference between the imported "shoddy" and that of home make. The makers of the latter are at our doors, and can promptly be made to answer for any defects; but against English makers of shoddy there is no recourse. This single circumstance, which the *Globe*, of course, does not take into account at all, is literally worth millions to Canadian consumers of cheap goods, in securing them fair value for their money. Again, if we imported all our consumption of woollen goods, then the plea that the poor man pays higher *ad valorem* duties than the rich man would hold good. But the important fact that we have a large home production alters the case entirely. When the "poor man" buys a suit of clothes of any such stuffs as are now staple manufactures at home, he pays not one cent of duty on them, but gets them duty free. On other goods, those in the manufacture of which we are only just beginning, the buyer pays something for protection, but still not half what the figures appear to show; while on such classes of goods as are not made here at all he pays the duty in full. The buyer of fine broadcloth pays all the duty, because we make none of that article here; the buyer of cheap Canadian tweeds pays not one cent of duty; and between the two extremes there are many variations. The old American tariff story is always applicable, and should never be forgotten. Said a Free Trade stump orator, "Every man in this crowd who wears a cotton shirt is taxed seven cents per yard on the cloth it is made of." "Don't see how that can be," said one of the crowd, "I got the cloth

for my shirt at six cents." The truth is that the *Globe's* argument is based throughout on a false assumption, and to refute it nothing more is necessary than to demand that it be carried out to its logical consequences. The *Globe* contends to a 17½ per cent. tariff, that we know. This, it allows, is necessary for revenue, but what next? Will the *Globe* venture to maintain that, were all duties abolished, we should immediately have boots and shoes, agricultural implements, heavy cottons, and other such articles as we make at home, cheaper by the amount of the duties remitted? Or will it not rather be believed, as every business man will admit, that in such case we would have an immediate rise in prices, consequent upon the shutting up of Canadian factories? The effect of Canadian manufacture on the market, in the way of making quote competition to sell, and consequently a better market to buy in is wholly lost sight of by Free Trade theorists. Whenever we start a new manufacture, under protection, the foreign manufacturers, who before had our markets all to themselves, drop their prices in order to retain it if possible. The contention that prices are always raised by the amount of the duty is a figment of the theoretical brain, which will not stand a moment's test by facts. The American duty on woollen goods, or on the kinds most largely consumed, is 50 cents per lb., and 35 per cent. *ad valorem*, against our figures of only 7½ cents per lb., and 20 per cent. And yet Canadians, to whom it is convenient, do actually go to Buffalo and Detroit to purchase clothing. This is the *reductio ad absurdum*, if the contention that the consumer always pays all the duty. If the Canadian 7½ cents per lb. is a tax on the poor, what does the *Globe* say of the American 50 cents per lb.? And yet to-day a poor man can certainly buy for five dollars as good a coat in Buffalo as he can for the same money in Toronto. Between the theory and the facts there lies a gap too wide to be bridged by Free Trade sophistry.

## A BRITISH ZOLLVEREIN.

Commenting on a portion of a despatch contained in an article in another column, the *New York World* (Free Trade) says: "While British exports to the United States in those branches of trade in which British capital and British labour are most heavily interested are falling off, the exports to Canada and Australia are increasing in spite of the 'protection' with which those colonies have been recently afflicted. It is proposed, therefore, to form a customs union of the empire, under which the mother country and her colonies shall trade on equal terms, to the exclusion of the goods of those foreign nations which maintain high tariffs. Ten years ago this would have been regarded as an Utopian vision. The proposal to form an Imperial federation has not hitherto met with much favour, simply because its advocates cannot explain how either the mother country or the colonies are to benefit by it; but there are no such insuperable objections to the present scheme. An Australian trade in canned meats is already established. Canada is going largely into the live cattle trade and dairy trades, and when her North-West Territories are developed, the older provinces must perforce turn their wheat fields into pasture lands for stock raising. Muskoka and Parry Sound in Ontario and the Lac St. Jean district in Quebec are admirably adapted for that purpose, and the provincial governments are hastening to bring them into direct communication with the trunk lines. In British Columbia there are millions of acres of the finest pasturage in the world, the grass in the valley of the Fraser River being exceedingly succulent, and the settlement of that province by the

Canadian Pacific Railway will open up a cattle market for England capable of supplying all her wants. Nova Scotia and New Brunswick send her fish, and Prince Edward Island is even a more fruitful mother of potatoes than Ireland. But it is in the North-West Territories that the problem will be solved. Professor Macov and other high authorities estimate that there are at least 200,000-000 acres in that lone land capable of producing wheat. At an average of fifteen bushels to the acre this would represent a crop more than sufficient to feed Europe and America. The Pacific Railway will be completed through this great wheat belt by 1884, and tributary lines are already projected northward. An attempt is also being made to open up the old Hudson Bay sea route for grain ships. The Hudson Bay Company's fur vessels have for centuries plied between Stromness, in the north of Scotland, and York Factory. Navigation is open for nearly three months of the year, and the route is shorter than any of the trans-Atlantic routes now travelled. But, even if the produce of the North-West has to be carried by rail to the waters of Lake Superior, the vast annual output will give England all the food she needs, and give it to her cheaper than our Western farmers can supply it. The North-West will also furnish unequalled cattle ranges. The region lying between the Rocky Mountains on the west, the Qu'Appelle River on the east, and Battle River on the north, is covered with luxuriant grasses, and the climate, tempered by winds and mists from the Pacific, is mild enough to admit of the cattle ranging at large through the winter. Ranches are already being taken up."

## THE FINANCES OF RUSSIA.

The *Pall Mall Gazette* contains the following interesting statement respecting the finances of Russia: "Any declaration of the new departure in Russian policy may be read by the light of the usual consular report on the finances of the empire just published. At first sight the figures here produced do not seem unfavourable. Taking for convenience the rouble at its depreciated value of 2s., we state the case in round figures thus:—The revenue for 1879 (the last year for which the accounts are published) exceeded the estimate by £4,485,624. Of this increase £1,622,194 is due to customs, while trade licences, stamps, registration fees, post office telegraphs, and all those items to which we are accustomed to look as indications of general prosperity, tend to make up this highly respectable surplus. It is noteworthy too that the very Nihilists are said to contribute to the prosperity of the empire, for the passport tax produces some £71,192 more than the estimate, owing to the stricter enforcement of this tax which their manoeuvres have rendered necessary. There is, however, a reverse to the medal. First of all, while the actual receipts are given as £66,195,419, the actual expenditure is stated at £77,600,157, of which, when the accounts were made up, £2,445,259 had yet to be paid—or, in unofficial terms, to be added to the mass of debt which is burdensome in proportion to the want of public confidence and public credit. The Russian national debt exceeded four years' revenue, whereas our own may be roughly estimated at ten years' income; yet the annual cost of the smaller debt is one-fourth of the revenue, while our own larger debts cost three-eighths of our income. The Russian debt charge has increased from 107 million roubles in 1873 to 172 millions in 1879, 'the result of the war and the depreciation of the rouble.' That the first named cause largely predominates (if, indeed, the second be not mainly due to the first), we may judge from the statement that the war expenditure of the five years 1874-79



Mr. H. will can apples, pears, blueberries with other fruit, also beef, mutton and poultry, in great quantities...

EXTENSIVE CATTLE SHIPMENT TO ENGLAND, VIA HALIFAX.

Messrs. M. Wood & Son of Sackville, Monday shipped 100 head of New Brunswick cattle over the Intercolonial to Halifax...

BOGUS BUTTER

It is said a Western agent has been in the city trying to open up a trade with Chicago in what is popularly known as "oleomargarine"...

PORK PACKING STATISTICS.

The Cincinnati Price Current says it has not yet obtained complete returns from Indianapolis, but, approximating that city's figures, the packing at the six large cities the past winter compares with the preceding year as follows:

Table with 2 columns: City and 1898-99, 1899-00. Rows include Chicago, Cincinnati, St. Louis, Indianapolis, Milwaukee, and Louisville.

This indicates an increase of about 200,000 head at these places. In our first of January estimates our figures for these cities reached 4,820,000, or about 85,000 more than were packed—Indianapolis alone exceeding the estimate.

crease in land, St. Louis 185 lbs decrease in net weight, and 1/2 PS increase in land, Milwaukee 145 lbs decrease in net weight, and 1/2 PS increase in land, Louisville 145 lbs increase in net weight, and 1/2 PS increase in land.

PROTECTION IN ENGLAND

The correspondent of the New York Herald in England says: "Trade generally continues to be very dull, and the long promised revision of the tariff is as yet American tariff protection is increasing severity upon the manufacturers, and is taking a great deal of trade from Sheffield and Birmingham."

WINNIPEG.

Winnipeg, 5th.—Gen. Rossel, chief engineer of the Canada Pacific Railway, has returned from locating the second bounded miles west, and has instructed the district engineer to deflect the main line some distance east of the terminus a hundred miles, so as to run southwesterly toward Assiniboine, and cross near the rapids of that river.

A letter from Moose Factory, Hudson Bay, dated the 16th February, says that the winter up to date had been the best ever witnessed by the writer either there or in Canada.

Mr. A. P. Rogers, chief engineer of the mountain division of the Canada Pacific Railway, has left for San Francisco, where he will proceed to New Westminster, B.C., to arrange the coast terminus of the Canada Pacific.

It is rumored that a number of the present employees of the official staff of the Canadian Pacific Railway have resigned, having secured positions elsewhere.

A new post office is to be opened after the first of May, at section 9, in the township of range 17 west, to be called Kleton.

Messrs. Earle and Brecken, late of the Government Canadian Pacific Railway staff, leave to-morrow via Portage La Prairie for Grand Valley to join the Canadian Pacific Railway Company engineering party in charge of Mr. Barclay.

to be located on the east side of Main street, and to the south of the present station on Point Douglas avenue, a very appropriate site for the purpose...

THE WAUBUNO CASE.

Toronto, 2nd.—At last winter's Assizes Mrs. Fisher sued the Georgian Bay Navigation Company for \$1,000 for the loss of her husband, who was drowned in the wreck of the Waubuno, of defendant's line in the Georgian Bay, late in the fall of 1879.

NEWS ITEMS.

Two manufacturers of Canadian lumber are to be established at St. Catharines. In a few cities there are more than half a dozen railway stations. In London there are at least 150. The number of Roman Catholics in England is estimated at one million, in Scotland, at 120,000.

The total exports from Hamilton to the United States for the past month amounted to \$69,970 72. The treasurer of a local society has absconded, taking with him about \$200 belonging to his employers.

On Thursday morning the Police Magistrate of New Orleans fatally stabbed a prominent ward politician named Coogras. Seven thousand looms are at a stand still in Belfast owing to a strike in the linen factories against 10 per cent. of a reduction.

Despatches from all over Ontario have been received referring to the cold north winds and blustering weather of Tuesday. In some places it is said to be 17° above zero and snow falling.

There are now in use in New Zealand alone over 5,000 reaping machines, from about 40 to 50 steam ploughs, 30 steam harrows, together with over 1,000 threshing machines, of which 374 are worked by steam power.

The import duties at Kingston received for the month of March amounted to \$16,031 25; total value of goods exported \$20,431. The duties received show an increase of \$2,001 31 over the amount received in March, 1880.

A joint stock company, composed of Messrs. G. I. Walker, John Marlatt and others, has purchased the Egin Park Factory, at Avmore, Ont., formerly carried on by Jehiel Yutker, and intends to largely increase its capacity.

At St. Catharines, on Saturday night, about 10 o'clock, a fire broke out in the residence of Mr. Geo. Cairns, entirely consuming the building. The use was a substantial stone edifice, costing \$2,000. Loss estimated at \$4,000.

A Mrs. Canfield, a prominent resident of Louisville, attempted to shoot Daniel Spalding, a clerk in a dry goods store, because he had become engaged to be married to her daughter. The bullet grazed the heads of two lady customers.

For the month of March the arrival of immigrants was as follows: English, 149; Irish, 174; Scotch, 23; German, 1; Dutch, 1; Swiss, 2—total, 350. Twelve passed through to Manitoba and the balance settled in Ontario.

The number of letters, postal cards, and parcels of merchandise mailed at St. Catharines in the principal cities of the United States, last year, was as follows: Letters, 400,211,384; postal cards, 1,538,100; packages of merchandise, 12,337,568.

Messrs. Gray, Young & Spirling are now turning out 300 barrels of salt per day in Blith. Including the Seaforth blocks, they manufacture nearly 700 barrels per day. They are about erecting a saw mill and stove factory for their own use.

170 emigrants arrived in Montreal on Tuesday. Thirteen remained in the city, twelve intending stopping at Kingston, and the remainder proceed to Ontario and Manitoba. They were all from the United Kingdom and were a well-to-do class of farmers.

In 1871, when the last census was taken, the population of the United Kingdom was set down at 31,629,197, to which total Scotland contributed 3,360,010. It was then shown that the population increased at the rate of 700 daily; that one individual out of 73 was named Smith, one out of 248 Taylor, and one out of every 434, King.

The season just opening will probably be one of the blishest ever known in Canada in connection with the export cattle trade, and active operations have already commenced. On Tuesday of last week the well known dealer, John Black, of Fergus, shipped for England 600 head of fat cattle, collected in the neighbourhood of Galt, Quetico, Elora and Fergus.

At the request of Merchants' Association of Hamilton and others, a bill was introduced in the Delaware Legislature yesterday, asking the right of way for a ship canal across the State, anywhere below Appoquinimink Creek. Two char-

ters have already been granted to the Delaware and the Queenstown routes. Congressman Martin, Governor Hall and other prominent men of Delaware and Maryland are named as incorporators, and the capital stock is set at \$10,000,000.

The Committee reappointed under Mr. Gladstone's Irish Church Disestablishment Act have paid to that body in compensation no less a sum than £11,312,703. To the Archbishop of Armagh, one of the B-reforms, Marquis of Waterford whose family have held that see as a pocket borough for years, they have paid £28,442; to the Archbishop of Dublin, one of the T-reforms, £203,041; to the Bishop of Derry, one of the F-reforms of Exeter and Brazenose, Oxford, £111,367.

The Revised Version of the New Testament.—It is said that 100,000 copies of this work have been already manufactured in England, and 100,000 in New York, none of which can at present be sold. As soon as a copy of the English edition can be procured, 10,000 copies will be put into type within 24 hours in New York, and 6,000 will be manufactured daily until the demand is satisfied. The volumes, which will contain about 500 pages each, will be sold at the price of 10 cents apiece.

The Bangor Wagon says: "There are now over 300,000 salmon eggs at the hatching house on Broad street, 24,000 land locked salmon eggs having arrived Saturday from the Schoodic Salmon Breeding Works at Grand Lake Stream. It is intended to stock Cold Stream Lake at Enfield with the 24,000 just received. Commissioner Stillwell says they will be ready for shipment about the first of May. Mr. Stillwell recently presented a gentleman in this city with two or three eggs, which have been successfully hatched out."

It is expected that by the middle of May our outgoing vessels drawing up to 20 feet of water will be able to enter the Lachine Canal from Montreal harbour, and unload in the several deep water basins that are among the recently completed improvements. All that now remains to be done to affect this great advantage and convenience is the completion and placing of the gates for the new lock entrance. A large force of men has been employed all winter in making these gates, and a few weeks will witness their final completion.

A special meeting of the Coldbrook Rolling Mills Company was held at St. Johns on Wednesday, Mr. John Gibb, of Compton, Quebec, was present as representative of the shareholders in the Upper Province. By-laws were passed providing that the annual meeting of the company shall be held on the first Wednesday in May in every year. A resolution to consider the propriety of bringing the business of the company to a close, and to distribute the assets among the shareholders was tabled over, and a motion was finally carried directing the directors to bring before the general meeting in May all books, papers, etc., so that this question can be dealt with.

It is notified from the War Office that from the date on which battalions of Infantry of the line may be placed under order for service abroad their establishments will be increased by four second lieutenants, those having an establishment of 800 rank and file or upwards being also increased by eight sergeants. From the date on which battalions may be placed under orders to return home vacancies that may occur in them in the ranks of second lieutenant and sergeant will not be filled up pending the reduction of establishment that will be effected on the arrival of the regiment at home.

In the suit of the Direct Cable Company vs. the Dominion Telegraph Company, in which the plaintiffs entered action to restrain the defendants from proceeding with a certain arbitration between the two Companies, judgment was delivered by Vice-Chancellor Blake on Wednesday in favour of the former. On the question of the jurisdiction of the court to deal with the question, his lordship held in the general rule that the court retains jurisdiction, unless it is expressly taken away after a recital of all the facts. He thought that if there was no other well founded objection to the plaintiffs' case, the suit was one in which they were entitled to the interference of the Court on the question of the cross relief asked for by the defendants. In case the suit was entertained by the Court, his lordship thought the subject of the request formed no direct answer to the Bill. He decided that the plaintiffs are entitled to the declaration asked for, with costs, against the defendants' company, and the costs of the company's defendants.

The English correspondent of the London Avertiser says: "You will be glad to hear that Dr. Puncheon is much better in health and able to resume his secretarial duties at the Mission Hall, Bishopgate street. He lost his son a few months ago—a fine promising young man, 26 years of age, a B. A. of Cambridge. This was a great affliction to the father. However true, the great healer, and divine grace, the greater healer, have brought about a happy change in his health and spirit, and all his old friends in Canada, who heard, through the public journals, of his illness, will now be pleased to hear of his convalescence. Perhaps I ought further to say that the accounts given in various newspapers of his serious illness would convey to the general reader too grave an impression, going much beyond the actual facts. I believe the doctor was present last Tuesday at an important meeting of the English Committee, which is making arrangements for the Ecumenical Methodist Conference, to be held in London next autumn, or fall, as you would say in Canada."

SPIRIT OF THE COMMERCIAL AND INDUSTRIAL PRESS.

FREE TRADE

(London Advertiser)

Our enlightened people are again to enjoy the benefit of instruction from Mr. Mongredien. The country is indebted to him for a new treatise on Free Trade under the guise of a "History of the Free Trade Movement in England," which comes to us in two editions, with two different publishers—although both are printed from the same plates. The best part of this little book is the preface. Herein we are assured that the theoretical soundness and practical advantages of Free Trade had been proclaimed by scientific adepts a century before England adopted it, and that scientific men still persistently advocated the principle, while all but English statesmen persistently act in opposition to it. "There is, indeed," Mr. Mongredien is glad to know, "in many other countries a large and increasing band of thinkers who know the truth, propagate the truth, and work for the truth; but they are for the present overruled by the indifferent many and the interested few." Then again, notice this amazing statement: "There is no allegation that is more frequently or more exultantly urged as an argument by the foreign opponents of Free Trade than that England has been ruined by it. Falsely assuming that, since the adoption of Free Trade, England has been gradually declining—that the condition of her people has greatly deteriorated—that her commerce is melting away—and that a nation, once so flourishing, is on the eve of a total collapse, they triumphantly exclaim: "How dare you recommend to other countries that nostrum that has brought you so low?" One feels like inquiring with a famous and valiant sailor who proudly avowed himself an Englishman, "What is to be done with this 'ere hopeless chap?" It is certainly not worth while to argue with him. He has foreclosed all discussion of elementary principle by the simple expedient of announcing that the doctrine he preaches is "the truth." The only argument on the other side he can find to combat in one which he puts into the mouth of his opponents—a statement which no sensible advocate of the protective system ever made. He knocks down merely a man of straw, a very clumsy specimen of the home manufacturer. The real objection to following the example of England may be stated by following out one of Mr. Mongredien's metaphors in the same process. "The physicians in vain prescribe a salutary regimen if their patients deride their authority and ignore their injunctions. England is as yet the only patient that has conformed to the physician's precepts." Suppose the "patient" is not ill? Suppose, being ill, his ailment should be different from that of which England recovered by taking doctors' stuff? The history of the anti-commerce law agitation in England is the story of a great popular triumph. It was in behalf of a cause that deserved fully the success that crowned it. The men who initiated the movement and carried it through to victory, aided by a condition of the country that demanded were entitled to and have received the very measure of relief they advocated, highest praise and honour. Their names are held in as much respect by Protectionists in America as they are by Free Traders. There is no disposition in any quarter to "impute" what they were mistaken in their acts, their methods, or their confidence, in the result of what they forced the Government to do. If there is any other or stronger way of saying that Free Trade succeeded in England, we are ready to adopt it. What then? Does it follow that all countries—whatever their situation, whatever their necessities, whatever the temper of the people, whatever the character of their trade—must be benefited by the same step? If it does the discussion is at an end. But all men except ultra Free Traders are aware that different people choose and prefer different ways of taxing themselves. Some thousands of Englishmen blocked the avenue to the Houses of Parliament to protest against Mr. Lowe's match tax; a tax on matches is borne here without objection or inconvenience. Americans have an especial distaste for an income tax; but Englishmen dislike it only because it is a tax. The Government of France peddles tobacco, taking the tax in the form of profit; England would not tolerate that. Different nations also differ as to the form of government, one preferring a king, another an emperor, a third a president, as a chief ruler. Some governments, as, for example, the United States, give full Free Trade in all internal commerce, while levying protective duties on imported goods; on the other hand, Great Britain, having to import most of its raw material, except coal and iron, and half its food, admits them free of duty, and taxes internal commerce in the shape of stamps, railway passenger duty, income tax, etc. The Free Trade propagandist is merely a quack doctor who offers his one remedy as a cure for all diseases. If he is an Englishman he says, "I took this, and am well. Con., either all ye ailing and be healed." But the United States is not starving, as Great Britain seemed likely to be when Free Trade was carried. The country was not ill at all. Its health is quite as rugged and robust as that of its self-appointed physician. Moreover, we have plenty of proof that the sovereign remedy is not good for the constitution of countries situated as ours has been, and still is. Canada, which was under a

tariff for revenue only was compelled to discontinue the use of Mr. Mongredien's medicine. It weakened her and rendered her incapable of contending against her self-proclaimed neighbour. She was not alone among British colonies that gave a fair trial to the panacea and threw away the bottle. France tried a little of it, and cannot tell whether it helped or hurt her. Germany tried it and has sent the care-all doctor about his business. The thinkers who think only of England are still believers. The patients have learned something which tells them to beware of benevolent old deathmen with patent medicines for sale.

GOVERNMENT EMPLOYMENT

(Journal of Commerce) The late John Sandfield Macdonald himself an eminently practical and a self-made man, once in conversation with the writer, at that time occupying a position under Government, remarked: "If I were a young man I should not remain in a Government situation a single day. The advice was acted upon and never at any period since has there been occasion to regret the step. There is a large and apparently growing number of men, young and old, throughout the country, whom it would be difficult to convince that a Government position, however subordinate, is not much to be preferred to any along the various avenues of industry in a new country like ours. Those who visit Ottawa during the sessions of Parliament cannot fail to notice the number of respectable looking persons who with commendable patience haunt the lobbies and corridors of the House and the different departments, waiting day after day and week after week for an audience with some ministerial friend who, when he is not up to his eyes in business, is studying, if he remembers them at all, how he can redeem his former promises, or break them with the best grace, in order to maintain friendly relations with his influential and exacting constituents. The "I shan't forget you, my boy" promises lightly given at an election or other inspiring time has been the cause of ruin to many a man who places any value upon such hardy wrong promises. Even for the one position possibly vacant there are hundreds of applicants, all eager to serve their country for a little share of the public money, until one is reminded of the remark attributed to a certain Wentworth county representative: "If all those who seek employment from the Government were to succeed, there would be no one left to pay the taxes." There are thousands of men in the country to day who would gladly give up the opportunity of earning an honest livelihood, and the possibility of future independence or wealth, for any petty position in the Civil Service, whose permanence would probably depend upon the continuance of their friends in power, a position that would yield them much less than they could earn in a new country like this with ordinary perseverance, with a little of the persistency with which they seek political preferment. Why is the public service so attractive to a large number of people? Is it because they mistrust their ability to earn a competence for themselves? Is it that the position reflects a respectability upon him who attains it? It is notorious that a great number of Government employees are driven to live beyond their means—compelled to run in debt, as many a grocer, tailor, shoemaker, and other retailer in the metropolis can testify. Not one in twenty saves anything for a rainy day—for a young family that grows faster than his salary. "Oh, we are in the Government, you know," says Mrs. Browne to an admiring young merchant just started, "and mamma thinks we should marry in the Government," a problem in the solution of which poor Browne, the father of five of them, and in receipt of a salary of \$1,000 a year, is making himself prematurely gray. It is difficult to imagine how an active man with something of ambition in his character can look through the different Government departments and then covet such an occupation as the most desirable in life. If the positions were for life, with pensions after disqualification by age, we can see how a man without ambition could content himself with such a humdrum life, but when men seem anxious to throw away other opportunities to accept clerkships at a few hundred dollars a year, it can only be accounted for on the same ground that the repeated indiscretions of the inebricate are accounted for—an overmastering appetite which leads the unfortunate victim to sacrifice his future welfare for a present gratification. No man has a more hopeless outlook than a young man in a public office under the system which obtains in Canada, except perhaps him who accepts such a position in the neighbouring Republic. When he is removed after a few years of service, he is less fitted than before for any other business. Even should he be successful as the Vicar of Bray, to hold office under all changes, his lifelong experience, and knowledge of the business are of so earthly assistance to him in case of a vacancy above, to which he might naturally expect to be promoted. He has the chagrin to find the man who has a few political friends appointed over his head, however qualified he may be. The young man who enters such service is destined to a life of poverty, while the man in middle age who leaves a moderate business to take such a position abandons his place in life for the merest morsel of postage. We have heard of a few cases, very rare indeed, in which Cabinet ministers actually refused to use their influence to obtain Government

situations for young relatives, solely because they felt it would be the worst start they could give in life. The influence of one of the same today who have been saved to the business and industry of the country, men of means and growing influence, and furnishing employment to others, while he who succeeded in getting the position, the son of a political friend, a promising young fellow, has degenerated into a veritable dudge.

THE EFFECT OF PROTECTION

The London Free Press thus, in its weekly statesome of the more apparent advantages of a protective tariff. Free Traders who have not pondered the matter very deeply find themselves often put out of countenance by the statistics which state them in the fact. Free trade between America and England, it continues for the last thirty years would have left America a huge farm, dependent for all but bread and beef upon Europe, and for handiwork trade between the United States and Canada, if continued for five years longer, would have reduced this country to very much less than a farm for the supply of bread and beef. There is much more in the question than "buying in the cheapest and selling in the dearest markets." There is self preservation, which can often be translated self independence in this yet imperfect world. Instead of allowing Canada to remain as a slaughter market, to be raddled upon by Americans every time they desired to work off old stock, or to crush a rising industry, the Tilley tariff has made it so attractive for the American manufacturers that many of them are coming here to locate in order to carry on their business. It hardly seems necessary to explain that one of the objects of the N P was to induce any Americans who wished to continue to furnish the Canadian market with their wares to remove to Canadian soil, employ Canadian labour, and pay Canadian taxation. That was an object, however, and it is bearing fruit in different parts of the country.

ARE LOW PRICES BENEFICIAL TO THE RETAIL DEALER?

Abnormally low prices are not so beneficial to the dealer as is popularly supposed. When the value of goods falls below the point where a fair profit is realized for the makers or factor, the condition of the trade is unhealthy and a reaction is likely to ensue, bringing a change of disadvantages offsetting any gains realized in the first instance. It may be true that occasionally one can make money purchasing at a time when the market is demoralized by the cutting of rates. Dealers strive to avail themselves of such an opportunity, but the trouble is to know when the bottom of the decline has been reached, and how much to buy at such a time. The dealer, coping with a fluctuating market, encounters many difficulties and sometimes obtains a monetary advantage. Suppose, to illustrate, that the price of nails becomes demoralized, and the rate is cut from, say, \$3 rates, a fair price, to \$2.50 rates, a losing price, whereupon the merchant, thinking of obtaining a great bargain, purchases a large line, but, unfortunately, by the time he receives the nails in stock a still further decline ensues, and his competitor, more fortunate than he, lays in his stock at \$2.25 rate, which gives him an advantage of 33c a keg; or suppose that nails do not decline below the \$2.50 rate, but actually advance to \$3 rates, now, the dealer whose stock is first sold out finds himself in the uncomfortable position of being compelled to go into market and pay 50c a keg more for his nails than his competitor paid for the stock he has remaining on hand. But it may be well said that one dealer is as likely to be favoured by this change in the market as another. The result, however, of such a saw-swing market is that both merchants gain and lose, and in the end neither are substantially benefited. Cutting of prices disturbs and unsettles the market, and this, too, often at a time when the retailer can least afford to have it disturbed. It is well known that in nine months out of ten the market is strong at the time, in the spring and fall, when the heaviest purchases of the year are made. This strength arises, no doubt, from the activity of the demand. But after the rush of the trade is over, and during the dull periods of the year, there is a tendency to cut prices and to force more goods on the market than the trade naturally requires. This leaves the dealer in the plight of having his store well stocked with goods which he has to sell on a declining or disturbed market. Speculators may step in and out of a changing market, and, if they are lucky, may reap large gains from the sudden fluctuations of prices, but it is not always so with the general dealer, who is compelled to carry a stock whether values go up or down. It is easier to sell on an advancing than on a declining market, but before an advance there must precede a decline. What is most advantageous to the trader is a steady market buoyed up by a strong feeling, with prices which afford a fair remuneration to the makers and the jobbers, as well as to the retailer. Such a market is full of life and health. The tendency, under such conditions, is for the manufacturers to furnish a good quality of goods and to furnish them in the most attractive and satisfactory manner. Such a market does not induce over production, bankruptcy of traders, recalcitancy, nor an over-weening anxiety to monopolize the trade

by manufacturers or dealers, but is rather indicative of the "live and let live" principle, which is satisfactory to all engaged in the business. While cutting of prices and an indiscriminate competition are destructive of the interests of all concerned, there is thus to be no practicable remedy. It is also likely that merchants and makers will go on in the future, as they have in the past, destroying each other by an insane desire to see which can sell the cheapest. Pooling arrangements and combinations allay the evil but do not wholly remedy the matter. To cure the disease, the whole superstructure of trade must be returned, or, at least, the current methods of doing business will have to be changed, in so far as that, where prices are varied, the cause producing that variation will be something higher than the desire to kill off a co-competitor.—Exchange.

IRON, STEEL AND ALLIED TRADES IN 1880.

The annual report to the members of the British Iron Trade Association for 1880 has just been issued by Mr. J. B. Jeans, the secretary to the association. In a preface Mr. Jeans points out that one or two new features have been introduced into the report for the past year. One of these relates to stocks held by makers and in warrant stores at the end of the year. In reference to this feature the secretary says: "At the instance of the president the association has collected from iron makers throughout the country statistics of the production of pig iron in 1880, and of the stocks held by makers and in warrant stores at the end of that year. That such information is likely to be of much use to those engaged in the trade is sufficiently obvious, and pig iron makers generally have shown their appreciation of its importance by the readiness with which they have furnished the figures required." In a chapter on the production and importation of iron ores, the report has the following: "The most notable feature of the year 1880, so far as the course of the trade in iron ore is concerned, has been the very exceptional bulk of the importation from Spain and other countries. Within the last twelve years the importations of ore by the United Kingdom for ironmaking purposes has increased from 114,435 tons to 2,634,401 tons, or 2,300 per cent. Within the same period the make of pig iron in the United Kingdom has increased to the extent of 55 per cent. Evidently, therefore, the iron ore resources of our own country have not only quite failed to respond to the demands of the pig iron makers for the special qualities of ore employed for Bessemer purposes, but they have largely given place to the imported ores of which hematite ironmakers now so largely avail themselves. The maximum production of iron ore previous to last year was reached in 1876, when it amounted to 18,841,883 tons. Of the aggregate quantity of 17,513,818 tons of ore used in that year in the manufacture of pig iron, only a trifle more than 3 per cent. was imported. Last year, assuming the production of iron ore in the United Kingdom to have been about 17,300,000 tons, more than 13 per cent. of the whole quantity used was imported, the increase in the imported ores during last year alone being not less than 142 per cent. on the importations for the previous year. The great bulk of the iron ore imports of 1880 was brought to the ports of Newport and Cardiff for the South Wales Ironworks, which took considerably over a million tons of the total quantity. After South Wales came Cleveland, which received the following quantities: Imported into the Tees, 398,621 tons; imported into the Tyne, 181,576 tons; imported into the Wear, 78,583 tons; total, 658,740 tons. South Wales now imports a considerably larger quantity of foreign ore than the Tees, Cleveland, on the other hand, only imported a little over 1 per cent. of the total quantity of ore smelted in her blast furnaces during 1880." In regard to home production of iron ores the report says that statistics kindly supplied by the Cleveland Mine Owners' Association show that the production of iron ore in that district for the year 1880 was 486,000 tons, being an increase of 1,674,306 tons, or about 36 per cent. on the output for 1879, which, however, was the lowest that had occurred since 1871. In regard to the production of pig iron the report says: "The production of pig iron from Cleveland during 1880 has been ascertained to be 1,991,832 tons, so that on an average, if all the stone raised went into consumption, 3 tons 5 cwt. of ore were used per ton of pig iron made. Of the ore used to produce the additional 519,281 tons of hematite iron made in Cleveland, 658,740 tons were imported, while the remainder, which can hardly be put at less than 400,000 tons, was brought from the west coast and other home districts. The detailed statistics of the production of iron ore in other localities during 1880 are not yet available, but is sufficiently evident from our returns of the production of pig iron that in nearly every case there has been a more or less considerable increase, aggregating not less than three million tons on the statistics for the previous year. Of hematite ores, the output on the west coast for 1880 is estimated at 2,853,000 tons, being an increase of 664,000 on the production for 1879; while of other ores the total output will probably be about 14,500,000 tons, making, with the 2,634,401 tons imported, a total consumption approximating 30,000,000 tons.

The following table shows the production of iron ore in the principal districts of the United Kingdom in 1880, compared with increase and decrease.

Table with 4 columns: District, Output in 1879, Output in 1880, Increase or Decrease. Rows include Cleveland, Lancashire, Cumberland, Scotland, N. Staffordshire, S. Staffordshire, S. Wales, Yorkshire, Northamptonshire, and Total.

The very limited extent to which Lancashire and Cumberland have increased their output of ore—12 per cent. in the one case, and 0.4 per cent. in the other—will be noted in the foregoing return. This limited expansion becomes all the more remarkable when viewed in relation to the enormous increase within the period under review in the demand for the special qualities of ore which these districts supply.

From the chapter on the "Pig Iron Trade in 1880" we take the following: Although the course of this industry has been marked by considerable fluctuation the general results of the year 1880 come out favourably in contrast with its immediate predecessors. Alike in production, in demand, and in average prices, a decided improvement has been realized. Returns made to the British Iron Trade Association by pig iron makers throughout the country show that the total production in 1880 was 7,721,833 tons, being an increase of 1,712,100 tons, or 28.1 per cent. on the production of the previous year. These figures represent the largest make of pig iron that has ever occurred in the United Kingdom. The largest production previously attained was that of the year 1877, which reached 6,741,929 tons. In 1880, therefore, the make was 979,904 tons in excess of that of 1877. With reference to stocks, it has been ascertained that the total quantity in makers' hands and in warrant stores at the end of 1880 was 1,841,411 tons, or about 20 per cent. of the total make for that year. This quantity includes the iron stocked for consumption in forges, etc., where these are carried on in connection with blast furnaces. The following table shows the position of the stocks relative to the production of pig iron in each district.

Table with 3 columns: District, Production in 1880, Stocks at end of 1880. Rows include Scotland, Cleveland, West Cumberland, North Lancashire, South Wales, North Staffordshire, South Staffordshire, Northamptonshire, Yorkshire, Derbyshire, Gloucestershire, Wiltshire, etc., and Total.

In regard to the Bessemer steel trade the report says: The production of Bessemer steel in the United Kingdom during 1880 has reached a total of 1,044,387 tons, being an increase of 209,471 tons on the production of the previous year which reached 834,916 tons. This increase, which is equal to 25 per cent. of the largest that has ever taken place in a single year. Of Bessemer steel rails the production during 1880 was 739,919 tons, being an increase of 213,193 tons, or 41 per cent. on the production of the previous year, which amounted to 519,718 tons. The increased production of 1880 has been contributed to by every one of the steel making districts throughout the country, as the following figures show:

Table with 4 columns: District, Production in 1879, Production in 1880, Increase or Decrease. Rows include South Wales, Sheffield, Lancashire, Cumberland, North-East Coast, and Staffordshire.

The following table shows that the production of Bessemer steel rails has also been larger during 1880 in every district except one:

Table with 4 columns: District, Production in 1879, Production in 1880, Increase or Decrease. Rows include South Wales, Sheffield, Lancashire, Cumberland, North-East Coast, and Staffordshire.

—Saw the first shipment of cattle from Halifax in England on the 23rd of January, 1879, to the last per steamer Liverpool, nearly 8,000 head and 2,000 sheep have been sent across. They comprised thirty-two shipments, and the total value in round figures was \$30,000.

TORONTO PRICES CURRENT.

Table of current prices for various goods including Groceries, Flour, Sugar, and other commodities.

Table of prices for Oils, Paints, Hides and Skins, Leather, Produce, and other specialized goods.

WEEKLY REVIEW.

Weekly market review for Toronto, April 6th, 1881. Discusses transactions in stocks, flour, and other commodities.

A QUESTION OF DUTY.

Article discussing the duties of the government regarding bridge construction and the impact of foreign goods.

News items and reports, including information about Nova Scotia, the British House of Commons, and various local events.

Advertisement for WINS & CO. located at 18 Church St., Toronto, listing various types of wool.

Advertisement for 'DIRECT TRADE BETWEEN Canada & the Brazils' featuring the Montreal & Halifax Steamship Service.

MINING NEWS.

MADOC MINING NEWS.

Mr. Charlton, an English assayer of ores, arrived on Saturday from New York at the Consolidated Gold Mining Company's works. He has been employed by the company as resident assayer at the mines.

Work at the Seymour mine is progressing as usual, although no shipments have been made for some weeks past. A new shaft is being opened, and the hoisting apparatus changed from the position it has occupied for some months past. The use of compressed air for working the drills, instead of steam, has been found a great improvement in this mine. A steam pump is in constant operation to keep the mine free from water. Work goes on day and night.

We hear that active preparations are being made by the proprietors of the Gladstone gold mine to resume extensive operations here this spring. New machinery is being put in, and the prospects are spoken of as exceedingly encouraging.

A number of men are constantly engaged at the slate quarry, on Mr. Arlworth's place. A large excavation has been made here, and the men are now clearing the bottom of loose slate preparatory to blasting. A large quantity of out slate is now on hand, some of which is a very fair sample.

A valuable discovery of iron ore was lately made on lot 6, in the 7th concession of Madoc, owned by Mr. Jno. R. Ketcheson. Mr. Pusy secured the claim, and has had a small force engaged in opening it up for some time. The ore is said to be the purest and best of any yet discovered in this district. About two tons have been taken out, and there is every indication of a large deposit. We understand work will be proceeded with on a much larger scale shortly.—Madoc Review.

DUNCAN MINE.

The latest reports from the Duncan mine are very encouraging, and indicate the probability that this property will reap some benefit from the large outlay that has been incurred. We doubt if any other location in the country has been worked as steadily and managed as economically as this, and all will be glad to hear of the probable good fortune which awaits it to all appearance. The work on the seventh level, which has resulted in yielding good pay rock, now shows a fine looking vein, with native silver on the east wall in thin sheets; but as the work is progressing very slowly it will be some days before any definite information can be obtained. The drift that is being worked from the eighth level is in about 86 feet, but the vein is somewhat broken up although improving gradually. Another level is being worked from the bottom of the shaft at a depth of about 800 feet from surface which also shows a very fine looking vein.—North Shore Miner.

GOLD AND IRON MINING IN ONTARIO, CANADA.

Mr. Austin Gallagher, who has but returned from Ontario, reports considerable activity in the Marmora gold fields. The Canada Consolidated Gold Mining Company, of New York, is making considerable improvements. He reports that the "deep shaft" as being, on the 14th inst., 163 feet deep, while the first level was driven 10 feet and the second level 118 feet, all in ore, with a good strong vein at all floors. In fact, the mine never looked better, in his estimation, than at that time. A substantial dam has been built across the Moira River, which will furnish power during the greater portion of the year. Men were at work clearing the way for a large flume to be conducted to the mill, which will be located about twelve or fifteen hundred feet distant. The mill site has been cleared, and stone for the foundations was piled upon the ground waiting the coming out of the frost to be put in place. The main timbers for the proposed mill were cut and framed ready for erection. Cedar posts for the trestle between the main shaft and the mill were cut and distributed. A large portion of the trunks necessary for the roasting furnaces were upon the ground. Telegraph poles have been distributed between the mines and Marmora, a distance of about four miles, and wires and instruments will be furnished by the Montreal Telegraph Company shortly. The company had on hand nearly a year's supply of fuel, or about 1,200 cords of wood. The superintendent expected to be able to put in 300 or 350 cords more before the breaking up of the roads. Permanent shaft houses for the Tattle and "deep shaft" were framed and ready for erection. A temporary shaft house, to be used in sinking, was nearly completed over the Tattle shaft. A new pump and hoisting engine were at the mouth of the "deep shaft" waiting boiler, the one previously purchased to drive them having exploded in testing at the shops. Work is progressing in both levels of the "deep shaft" and as soon as the air compressors which have been ordered arrive sinking will be resumed. The severity of the winter has hindered progress to a considerable extent, but all the indications point to great activity from this time on.

Messrs. D. K. Stewart & Co. have opened, to a depth of 35 feet, a mine on lot 18 of the Eleventh Concession of Marmora. The vein is said to be 4 1/2 feet of sulphurets, assaying from \$10 to \$25. Sinking is going on. The same parties

have bought the 60 acres adjoining the Feigel on lot 17 in the Eleventh Concession. They are seeking ten men and have two shafts 4 1/2 feet deep. The vein is irregular, and carries from \$4 to \$70 of gold. A mill will be running on this ore very soon.

The Feigel mine lately purchased by Messrs. Beatty & Kelso, will be running soon. The Craig mine, in Taylor, has been working a 4 foot vein hauling the ore five miles to the Beacockburn mill, and getting about \$8 per ton, free gold. The famous Richards mine, in fact, is likely to be worked again next summer.

The prospects for the iron mines at Madoc are fairly encouraging. The ore from this district is selling at from \$10 to \$5 per ton on the cars, according to percentage of iron contained. It is thought that the production from these mines will aggregate from 100,000 to 1,000,000 tons during this year. The cost of mining is estimated at about \$1.50 per ton, the freight to Black Rock \$1.00, and the United States duties, fees, etc., about fifty-seven cents; so that with incidentals the cost at Black Rock duties paid, will range between \$4 and \$4.25 upon a large business. The following mines are being operated, or likely to be, during this year: Homatite, Seymour, S. Smith, Dufferin, Hobson, Nihil, Brooks, Neilson, and the Blairton.—N. Y. Journal.

THE MANUFACTURE OF IRON.

The departure of the large schooner Mary Parker on Saturday for Texas Island, there to take on board a cargo of the famous iron ore of that island, to carry the same to the foreign port of Port Townsend, in Washington Territory, there to be converted into merchantable iron, naturally raised the query, Why is this? Why should our raw material be taken out of the province to be manufactured, when nature has so bountifully provided us with the means of manufacturing the same within our provincial borders. The push and energy of our American cousins have taken the lead in this matter (as in many others) and have started blast furnaces in close proximity to Port Townsend, and a ready have commenced to supply the provincial market. The manufacture of iron is now carried on there by a joint stock company, with a capital we believe of only \$30,000, with every prospect of the undertaking being a grand financial success. The prosecution of railroad works in this province will greatly increase the demand for manufactured iron, and there is, without a reasonable doubt, a splendid opportunity for the investment of capital in smelting works in this province. We have the best qualities of coal and iron ore in abundance, and it only requires a little of the push and energy of our near neighbours to have all the iron required in this province manufactured within her borders, and with a fair prospect of successfully competing with our neighbours in the foreign market. It appears to us that such an undertaking could most profitably be carried on in connection with our coal mines and that it would be a very safe venture for a judicious amount of capital by either the Vancouver Coal Company or Messrs. Dunsmuir, Diggle & Co. Iron is a staple article, with an ever increasing demand, and in other places is looked upon as a sure and profitable means of investing capital. \$3,000,000 is set down as the expenditure for railways in this province during the next fiscal year, and there is no reason why that immense sum should go entirely to enrich our neighbours across the border. Two men of that already spent has gone in that direction for the good of the province, but the fault partly lies with ourselves. If this province was in a position to supply what was needed, it is hardly likely that Oronoko & Co., or any other contractors, would pay heavy freight and duties on what they could procure close to their works. It took but a few months to organize a joint stock company and erect smelting furnaces at Port Townsend, and the thing could be done in this province if properly taken in hand and the trade secured. If the American Iron is allowed to get a hold in this market it might take some time for the local production to obtain a solid foothold. Texas, with its practically inexhaustible stores of iron ore, is situated in the Gulf of Georgia, about 20 miles from Nanaimo, and is therefore vitally easy reach.—Nanaimo Free Press.

THE GOLD MINING ASSOCIATION OF CANADA.

The prospectus of the Gold Mining Association of Canada appears in the London Times of January 23rd. It is incorporated under the English Joint Stock Companies' Act, with a capital of £250,000 in one pound shares. The capital was privately subscribed, and the lists closed on the 24th January. The Hon. J. A. Chapleau, Premier of Quebec, is one of the local directors, and Mr. A. A. Humphrey, who has been conducting experiments on the property for the past two years, has been appointed managing director. The association is formed to purchase and work an extensive gold bearing property on the Riviere du Loup, Bonaventure county, Quebec. The property consists of about 1,240 acres held in fee simple, and of mining rights over about 1,237 acres in addition thereto. It is intended to start work at once to work the gravel, which has been thoroughly tested and proven; concurrently with this work the large veins of quartz will be more thoroughly opened and explored, and as soon as the best

veins are located a mill will be put to crush the quartz. The estimated cost of plant is £25,000—£10,000 for hydraulic machinery for washing the gravel, £15,000 for quartz mill. The gross estimate receipts are placed at \$1,200 per day and net proceeds at \$1,000. The profit on one year's operations is set down at £15,000. There is, says the Montreal Herald, gold in the Beauce district, in quantities which will pay to operate, and the Association will be required with sufficient capital to successfully work these claims.

THE CANADA CONSOLIDATED MINE.

The following is the report of Mr. Walter Shany, the eminent Civil Engineer, on the Canada Consolidated Gold Mining Company's property in Matamoras:—

MONTREAL, January 17th, 1881

Richard P. Rutwell, Esq., Mining Engineer, New York

DEAR SIR,—I have pleasure in conveying to you my impressions of the Marmora Gold Mines, forming the property of the Canada Consolidated Gold Mining Company, as gathered from my visit to and examination of the ground and workings last month. The situation of the property in affording every possible facility for cheap working is probably not to be equaled by that of any important gold mine on this continent. Most of the great mines are to be looked for in regions difficult of access, where labour has to be imported and highly paid for; where even the simplest necessities of life have to be brought from afar, and at great expense; where fuel is commonly scarce and precious article, and where even water has to be paid for by the bucket. The Marmora mines lie in the midst of a highly productive wheat growing and cattle raising country, where provision and all the other requisites of "living" are as abundant as, and cheaper than, in England or New York. The county of Hastings, of which the township of Marmora is a subdivision, is intersected by macadamised highways and railways. One of the former extends from the city of Belleville, on the Bay of Quinte, to the mine, and there is a railway station within ten miles. In respect of geographical position, measured by time, relatively to the great business centres of Canada and the adjoining States, Marmora, lying 33 miles back from Belleville, is distant 11 in Toronto, about 10 hours; Montreal, about 14 hours; New York or Boston, 30 hours. Fuel wood of the choicest description can be bought at the mine for \$1.25 per cord of 128 cubic feet, while the River Moira, passing through the property, affords abundant supply of water for all ordinary mining uses in all seasons, and with 20 feet fall) ample power for driving machinery for nine months in the year.

The great Homatite Company (Gold), in the "Black Hills" country, publishes the following statement for the two years ending with August, 1880. Total tons of ore crushed, 278,283; net bullion extracted, \$1,888,289.98; total working expenses, \$959,825.98. The cost of plant, stamp mills, etc., was \$458,210.10, and dividends paid in same two years and nine months, \$800,000. This great result was obtained from ore yielding, net, only about \$6.80 per ton. The working expenses per ton of rock averaged \$3.46. Comparing prices for labour and "supplies" of all kinds at the Homatite mine with what we know will be ruling rates in Marmora, and allowing for any probable increase over present rates, the relative cost of extracting the bullion in the two localities, supposing the ore to be identical in character, would be as follows:—

Table with 2 columns: Homatite, Marmora. Rows include Labour of mining and milling, per ton... \$1 40 \$0 70; Shafes and dead work 26 20; Machine and blacksmith shops and all else... 71 47; Fuel... 22 10; Water... 11 10; All other "supplies" 60 68; Whole cost, per ton of rock... \$3 46 \$1 27.

As, however, the Marmora ore requires to be roasted and chlorinated, the cost will be increased; although, since only the concentrate, or say one ton in three, will be roasted and only one ton in four will be chlorinated, the total cost of mining, milling, etc., reduced to the ton of ore as extracted from the mine, will still not exceed from \$3 to \$3.50 per ton, or not more than at the famous Homatite, whose ore yields only \$6.80 per ton, and whose fuel is \$4.75 per cord. And this comparison, so widely in favour of Marmora "facilities," does not take into account the large saving to be effected there by the use of water power for the greater part of the year as against steam power, with wood at \$4.75 per cord all the year round at the Homatite mine. The Homatite ore yields, net, as stated above, \$6.80 per ton. The average of 108 assays, from 108 five-ton samples of Marmora rock, shows \$12.37. These tests, chiefly from your own samples and assays, must be taken as having been very carefully made; for I find reports from nine other well-known mineralogists giving far higher results. The average of all the tests made seems to leave no room to doubt that the per ton value of the ore is fully \$12.37. As an offset to the high price of labour and supplies in the Black Hills region, the Homatite ore is admitted to be soft and friable, breaking into small pieces after being shattered by blasting, and is

readily crushed in the mill. It is in the highest degree a free milling ore and is richly amalgamated, the gold it contains being mostly coarse, and easily saved in the battery. These are large advantages, and did the Marmora rock possess them in equal degree the value of the property would be almost incalculable. None of the veins yet exposed, however, none as yet, or will "mill" as freely as the Homatite ore. On the contrary they are roasting ores, and the cost of treatment is consequently much increased. The counterbalancing advantage of Marmora is to be sought for in the greater richness of the ore, a most three to one, and in the immensely greater working facilities in respect of labour, materials, and water power, and I confidently predict that the counterbalancing will prove so entire and complete as to place the Marmora mine in the front rank of paying gold mines. But a small part, comparatively, of the Canada Consolidated Gold Mining Company's property has as yet been "proved," at your estimate of the value of the "ore in sight" appears to me to be not overrated at \$575,000, and with proper application of capital and skill, the enterprise cannot fail of proving a notable success.

W. SHANY

—Belleville Intelligencer.

The announcement that the Sullivan Silver Mine, State of Maine, mailed week its first shipment of 4,000 ounces of bullion possesses more than a passing interest to those interested in Nova Scotia mining. Already rumours are spread that in more than one district of the province lodes have been found yielding amounts of silver which promise to the miner prosperous returns, and in the coming summer no exertions will be spared by the more energetic of our prospectors to settle the fact on a basis that will allow the investment of capital. The mines of Maine are gradually coming to the front, and in this connection the development of a bonanza mine on the western extension of those rugged hills which continue through New Brunswick and Nova Scotia is a gratifying inducement to our miners to persevere in their search after this wonderful metal which has built up states and towns in the western parts of Uncle Sam's dominion.—Halifax Herald.

INSURANCE MATTERS.

Liverpool's salvage corps attended 399 fires last year.

The Standard Fire has projected an increase to its capital stock of £135,000.

The City of London Fire Ins. Co., with a subscribed capital of £1,000,000 in £10 shares, is projected.

The Sun Fire office did the largest fire business in London of the 66 offices in that city. Of the total insurance written of £224,503,125 the Sun wrote £78,570,184.

The annual premium which the community of Berlin has to pay for the fire insurance of school houses amounts to 9,284 marks, the insured value being 13,260,207 marks.

Capt. Shaw, of the London fire brigade is having considerable trouble with malicious persons tampering with the fire alarm boxes. It is quite possible that this is as much curiosity as anything else. The fire alarm system is to them still a novelty and they want to see how the thing works.

For many years English fire offices have been close competitors of our own companies for American business, but the life business has been almost exclusively an American institution; not only that but several offices have invaded England, and are doing a largely increasing life business on English soil. One English life company, the Lion Life, is going to reciprocate by establishing an agency in this country, and has already taken the preliminary steps.

The industrial business of the Metropolitan Life has assumed proportions that would astonish the public if they were generally made known; and yet this department is still in its infancy, and the territory available has been but slightly covered. But what has been done has been done well, and a thorough system inaugurated. Chicago is the next city which the Metropolitan is now making arrangements to cover with a good corps of imported and experienced talent.

The officers of several of these latter day co-operators, fearful that by some chance they might lose their grip on those excessive tolls which go into their pockets, have adopted the plan of appealing to the application a bank proxy form which the insured pays, at the same time he signs his miserable pretext for insurance. By this means the managers are enabled to assure their continuance in power as long as their company continues. At the same time they boastfully announce that their is a mutual association governed by the members.

The Hall Insurance Business suffered in 1880 the most terrible losses in Germany as well as in Austria-Hungary. There never have been so many hail storms as in the last year, and as the balance sheet of the Union German Hall Insurance Company shows, terrible rates of premium would not have been sufficient to cover the losses. The premium income of the Union was in 1880 \$1,193,000 and the losses paid amounted to \$3,234,885, or 273 per cent. This company has besides the accumulated reserve funds of 26 years \$200,000 of her capital.

We learn from the Oesterreichische Versicherungs Zeitung that the business of the Hamburg Bremen Fire Ins. Co. is so flourishing as could be wished. It appears that the continued self liquidation cannot be upheld much longer, inasmuch as the competition of the Norddeutsche and the trans-Atlantic companies is now being appreciated. The following figures are published: In 1870 the loss was 616,040 marks; in 1880 were 616,040 marks. The premium in the last year has, it is true, increased by 327,000 marks, but, consequent on the large amount paid for reinsurance, the result is not so unfavourable than in 1878 and 1879, notwithstanding the "fantome" of the directors, and the dividends remain the same.

The annual death rate in England and Wales averaged 22.4, 22.2, and 22.0 per 1,000, respectively, during the three decades 1841-50, 1851-60, and 1861-70. Thus English mortality may be said to have remained stationary during the thirty years 1841-70, notwithstanding the rapid increase of urban population aggregated in the town centres. Last year completed the fourth decade of civil registration, 1871-80, during which the average annual death rate in England and Wales fell to 21.5 per 1,000. This decline in the average death rate during the past ten years signifies that nearly 21,500 persons survived in England and Wales whose deaths would have been recorded had the average rate in the preceding thirty years been maintained.—Insurance Agent.

The Pennsylvania Supreme Court on the 16th inst. decided the case of William B. Smith against the Farmers and Mechanics' Mutual Fire Insurance Company, of Pennsylvania. Smith insured his property in the company for \$1,800. To the printed question, "Is the property encumbered?" the answer appeared, "No mortgage judgment." In 1875 Smith's place was burned out and a suit brought for the loss. The insurance company refused payment, alleging that he had made a false representation in reference to the encumbrances on his property, and that he had judgments against him amounting to \$556.53. Smith explained that his answer meant that there were no mortgages, but there were judgments. The court below held that at least the answer was ambiguous and did not amount to any express warranty. The Supreme Court affirms this decision.

Now, suppose all rival companies should enter upon that plan of doing business where each one would be expected and required by the customs to do to others as they would have others to do to them. Would not the observance of this very simple and reasonable rule soon work out a great change for the better? Suppose we could get the exact amount of money which companies obtain by unjustifiable attacks upon, and insinuations against others, and place it by the side of the degrading influence which the methods by which the money was obtained have upon the mind, how would the account look? Who would stand up and defend the course which made the picture possible, or would furnish the fact it would represent? Suppose custom does justify the whole thing, what of that? It requires something more than custom to justify what has been, or is being done. Custom may furnish apologies, but never can sanction acts which demoralize the mind. Insurance companies are called upon by the highest and best interest of society to regard the moral influences which their schemes for getting business from rival companies have upon the people.—Western Insurance Review.

According to the Registrar General's report, during the four quarters of 1880, 880,820 births and 828,095 deaths were registered in England and Wales. The natural increase of population during 1880, by excess of births over deaths, was 252,464 against 264,873 in 1879. The estimated increase of population during the year, based upon the rate of increase that prevailed during the ten years 1861-71, was 316,793, and 33,671 less than the excess of births over deaths; this difference may be assumed to represent the balance between emigration and immigration. According to returns issued by the Board of Trade 214,443 British emigrants (including 112,013 English, 22,248 Scotch, and 80,124 Irish) left the various parts of the United Kingdom at which emigration officers are stationed during the year 1880; this number showed a further increase of 60,251 upon the numbers reported in the three preceding years. The increase of emigration during 1880, compared with 1879, was equal to 7 per cent. from England, 17 per cent. from Scotland, and 13.1 per cent. from Ireland. Of the British emigrants during last year 72 per cent. left for the United States, 9 per cent. for the Australian Colonies, 11 per cent. for British North America, and 8 per cent. for all other places. The proportional emigration to the United States during 1880 showed a marked further increase, whereas the proportion of emigrants to the Australian Colonies had very considerably declined. The birth rate in 1880 was equal to 24.6, and the death rate to 30.7 per 1,000 persons estimated to be living in the middle of the year. The birth rate showed a further decline of 0.5 from the steadily decreasing rates in the four preceding years, and was lower than that recorded in any year since 1861, when the same rate prevailed. The death rate in 1880 also showed a decline from the rates prevailing in the two previous years, and, with the exception of the rate in 1877 (30.4), was lower than that which prevailed in any year since 1856, when it was 30.5.

SCIENTIFIC AND PRACTICAL.

THE DEPTHS OF THE SEA.

Mr. Henry Du Villard recently lectured before the Franklin Society in Providence, R.I., on the "Depths of the Sea," illustrating the same by some fine drawings and specimens of apparatus which had been in use in the deep sea soundings. These were loaned by Captain Bartlett of the United States Coast Survey steamer Blake. The lecture was further illustrated by specimens of the marine life taken in the soundings and dredgings. The speaker began by referring to the circumstances which gave him the opportunity of being aboard the Blake, commanded by Captain John R. Bartlett, Jr., for a time last summer, returning while there an officer who was ill. He was enabled while on board to collect many interesting facts. The area covered three-fourths of the surface of the globe. Its saltness is attributable to rivers and springs which are constantly emptying into the sea, and which are more of these salts back they naturally accumulate. The sea water in arctic regions is less salt than in the tropics, owing to the melting of icebergs. The colour of the sea water when free from all mixtures is a pure deep blue. This colour is due to the fact that the blue rays of the spectrum are less liable to be absorbed by masses of transparent substances than the others, thus predominating in the reflected pencil. The red, white, and brown patches in the Pacific and Indian Oceans are owing to the presence of swarms of animals, and the colours of the Red and the Yellow Seas to materials of vegetable origin. The phosphorescence of the sea, best seen on a dark night, is due to the presence of innumerable forms of life contained in the water. The common method of "throwing the lead," by which depths near the shore are approximately ascertained, was here explained. The depth of the ocean was for many years a matter of uncertainty, in consequence of the great difficulties with which investigators had to contend in using a weight and rope for sounding depths. This line would run out long after the shot had reached the bottom. A sinker of sufficient size to remedy this difficulty could not be heaved back against the pressure of water. Owing to the imperfections in the methods of sounding, as explained by the speaker, fabulous depths of six or eight miles were reported, and no bottom reached. Methods of ascertaining depths by exploding charges of powder in the deep water, and by a record of the compression of a tin tube, were explained and the reasons of their failure given. It was not until the year 1854 that Pasquid Middleham T. M. Brooke, a clever young officer in the United States Navy, invented an ingenious device for detaching the shot when it reached the bottom. This apparatus was shown both by drawing and by an actual piece ready for use. The simplicity and beauty of this machine greatly pleased the audience. Soundings of two and one-half miles were made by Lieutenant Brooke in the Pacific Ocean, and this corresponds nearly with Professor Bache's estimate of the average depth of the ocean calculated from the movement of the great tidal wave of December 23, 1854. The deepest sounding ever accurately made was by the Challenger, Captain Mearns, in the Indian Ocean, where they found 2,000 fathoms, more than five miles. The soundings made for the laying of the first Atlantic cable were explained. Scientific men had long believed that life at the bottom of the sea was confined to a narrow limit near the land, six hundred feet being about the limit, and that those animals and plants had almost disappeared, those representing only those of the simplest organisation, and at the depth of 300 fathoms (1,800 feet) nothing could possibly exist, and that the sea bed was a desert waste. They knew that at a depth of 1,000 fathoms animals must bear a pressure of a ton on a square inch; moreover, that at a depth of 50 fathoms the sun's light is almost entirely cut off. Further deep soundings brought up shells of dead animals living near the surface, but no living ones. The progress of explorers by which evidences of life in great depths were found was here given. The first absolute proof that animal life could be sustained at such great depths was from fishing up a cable that would not work, lying between Scardula and Honu. It was corroded, broken, and covered with marine animals, ornamented with it. In 1868, 1869, 1870, H. M. ships Porpoise and Lightning made many hauls of the dredge in the Atlantic, the deepest being twenty-seven miles off the Bay of Biscay, where animal life, including bony fishes, was found in abundance. The question of what the myriads of animals at these great depths feed upon was considered. Explanations given by scientific men, notably Mr. W. Thomson, were quoted, the amount being that these animals take in organic matter, which analyses prove is in sea water everywhere by absorption, they belonging to the lower order, which are nourished in that way. It is also probable that they make their shells in a similar way. In regard to the enormous pressure at great depths, Mr. Wyville Thomson estimates the pressure upon a man at a depth of 12,000 feet to be equal to a weight of twenty locomotives, each with a good train loaded with pig iron. But a body supported within and without, through all its tissues, by a comparatively incompressible fluid, as water is, would

not be necessarily incumbered. We sometimes find, when we get up in the morning, by a rise of an inch in the barometer, half a ton has been piled upon us during the night, but we experience no inconvenience. If, however, we were to go up a high mountain we would move with great difficulty. The speaker noticed the same effect upon the animals brought to the surface aboard the Blake. Their eyes were blown nearly out by air expanded, and their swimming bladders were forced out of their mouths. The greater part were dead except the fish. The work of the Blake in its soundings and dredgings was explained by the speaker, and a book of the records shown. It included the depth of water and its density at different depths, the bottom and surface temperature, and at two fathoms deep and in all cases the meteorological and other conditions are carefully noted. At this point the speaker gave an idea of the most approved sounding machine now in use by the aid of a model taken from the Blake. It is the Sigbee sounding machine now in use upon the Blake, embodying the original design by Sir Wyville Thomson, with improvements by Lieutenant Commander Sigbee, United States Navy. The lecture was listened to with the greatest attention and interest, and after complimentary remarks by the President and Dr. W. O. Brown, upon the motion of the latter a vote of thanks was tendered to the lecturer by the society. After the adjournment the audience gathered around the table to examine the apparatus and specimens.

TREATMENT OF PAIN BY MECHANICAL VIBRATIONS.

For some years past Dr. Mortimer Granville has been occupied with important researches upon the possibility of combating neuralgia by mechanical means. Proceeding largely upon theoretical considerations, he came to the conclusion that a series of interrupted mechanical shocks to a nerve would diminish its sensibility, and for that purpose invented a small instrument whereby a succession of rapid blows could be kept up upon the skin. Many physicians in London and Paris have seen and employed the apparatus, and spoken of it with approval; but Dr. Granville laboured to bring it under general notice until it had been thoroughly tested. He has paid the penalty of his patience, and the old story is repeated of the publication of an idea by another person by whom it was conceived long after the one who first thought of it, but who did not proclaim it to the world. In justice to himself Dr. Granville should forthwith point out how he arrived at the idea, and state his experience of its practical enforcement. Meanwhile it may be interesting to summarize the statements of M. Boudet de Paris, who writes on the subject in the current number of *La Presse Medicale*. After alluding to Dr. Brown-Sequard's observation that chloroform applied over the skin of an animal produces general anaesthesia by its irritant action on the peripheral nerves, he points out that all irritants or revulsives may be placed in one category—such as actual cautery, hypodermic injections of water, application of metals, magnets, tuning-forks, electricity, vesicatories, simplices, compresses steeped in ether or chloroform, a motley group, but each intended for the same end—the relief of pain; they all operate by irritating the terminal twigs of sensory nerves. Vulpian long ago showed the good effect of the local application of chloroform; and Landouzy has recently pointed out the remarkable influence in controlling the cough of pulmonary of hypodermic injections of water; while the cautery, acupuncture, and each of the forms of electricity are commonly applied to relieve pain. The action of metallic applications—metallotherapy—of which we have heard so much in the last few years, was best explained on the theory of vibrations by Vigoroux, who proceeded to experiment upon the effect of oscillatory vibrations, which he thought might have a direct mechanical effect upon the sensory nerves. By the aid of a large tuning fork and sounding board he caused hemicanesthesia to disappear, and provoked contractions in hysterical subjects at La Salpêtrière, as rapidly as with the magnet or electricity. The pains of an attack were subdued when his legs were brought under the influence of these sound waves. M. Boudet de Paris then thought this might be applied locally over a nerve—the sensorium being changed to mechanical vibrations by means of a small button attached to the resonator, and applied over the nerve. He therefore contrived a small apparatus consisting of an electrically mounted tuning fork, the vibrations of which were transmitted to a rod which could be easily applied over a nerve. In a healthy man this mechanical excitation produced rapid local analgesia, often anaesthesia, the maximum effect being by application over a nerve which could be compressed on a bony surface. When placed against its skull its walls vibrate in harmony with the tuning fork, and a sensation of approaching vertigo, frequently followed by a desire for sleep, is produced. An attack of migraine can be cut short by the application. Neuralgia—especially of the fifth, where the nerves issue from bony canals—disappears after a few minutes' application of the instrument to the nerve at such points, but in the case of deeper seated nerves, much protected by soft parts, it is more difficult to get good results. The writer suggests this treatment for the pains of neuralgia and myofasciitis; he thinks there is no limit to its applica-

tions, and suggests that perhaps cranial vibrations may induce cerebral and thus general anaesthesia. Its mechanical action is comprehensible when we see how simple friction of the skin may produce very acute pain. He does not regard the number of vibrations as important. This, however, is, we believe a point on which Dr. Mortimer Granville lays the greatest stress.—*Lancet*

SPEED OF CIRCULAR SAWS.

Nine thousand feet per minute, that is, nearly two miles per minute, for the rim of a circular saw to travel, may be laid down as a rule. For example, a saw 12 inches in diameter, 3 feet around the rim, 3,000 revolutions; 24 inches in diameter, or 6 feet around the rim, 1,500 revolutions; 3 feet in diameter, or 9 feet around the rim, 1,000 revolutions; 4 feet in diameter, or 12 feet around the rim, 750 revolutions; 5 feet in diameter, or 15 feet around the rim, 600 revolutions. Of course it is understood that the rim of the saw will run a little faster than this reckoning, on account of the circumference being more than three times as large as the diameter. The following table, which has been compiled as an authority on the subject, nearly covers the whole ground.—

LUMINOUS LIQUID.

It is well known that certain metallo salts, especially if previously heated, when exposed to direct sunlight, to the electric or the magnesium light, and then brought into a dark place, give off a yellow or bluish white light. Especially the sulphates of magnesium, strontium, and calcium possess this property in a greater or less degree. Balmien has recently patented a mixture which possesses this property in a remarkable extent. Thus, if the dial plates of watches are coated with this composition and then with a colourless varnish, the figures may be seen in the dark at some distance, if they have been previously exposed to diffused daylight. According to my experiments the organic compounds of these metals possess the same property, especially resin oil lime soap. If 100 parts of resin oil are boiled in a suitable pan with 30 parts of freshly slaked lime, raising the heat by degrees, the mass, which is at first lumpy, becomes tougher, and finally passes into a thin liquid. As soon as this stage is reached, say at 230° Fah., the entire surface of the liquid becomes luminous in the dark, which is still more intense at a greater heat. At 350° Fah. the bluish white light is very strong in the dark. Objects dipped in the liquid remain luminous for some time.—*B. Hoffman, in Chemist's Review.*

—The channel tunnel works, according to an Arnes paper, have of late been actively going on. A very powerful boring machine recently arrived, and no difficulty has yet arisen calculated to impede the undertaking.

—A very distinct photograph of a lightning flash was taken by Mr. Crowe, of Liverpool, during the severe thunder storm which visited that city on July 17, 1880. The flash, which has been made to photograph itself by its own light, appeared over St. Philomena's Church at the instant the bell tower was shattered to pieces. It exactly resembles the zigzag spark of an induction coil, and is estimated to have been about 51 inches broad.

—In a letter to *La N.* M. Corillon states that when observing the sun lately with a telescope, he was struck with certain undulatory movements on the disc. On inquiry into their cause, he is led to connect them with the wind blowing on the earth's surface at the time. They vary in intensity with this, and they have generally (but not always) the same direction as the wind. Where they have a different direction they indicate a change of weather, or at least the direction of the wind next day.

—A paper has been published by Gustav Hauser, of Erlangen, on the organs of smell in insects, in which he describes several experiments. Numerous species of insects, on approaching vessels containing turpentine or acetic acid, showed—by retreating and moving their

antennae—a distinct perception of the smell. After the ends of the antennae had been cut off, the same insects placed close to the vessels appeared quite insensible to it. A number of flies, which had been attracted by a piece of putrid meat, showed no inclination to approach it after the third segment of the antennae had been cut off.

—A severe snow storm, accompanied by electrical disturbance and high wind, prevailed on January 6th, over a space of 800 miles wide, along the line of the Union Pacific Railroad, between Omaha and Ogden. For twenty-four hours the telegraph wires were useless, the intensity of the electric storm being shown by the fact that when the telegraph key was opened by the operator a steady electric light burned at the connecting points. The chief operator of the Union Pacific Telegraph lines has kept a record for years, and with but one exception in twelve years this storm occurred on Jan. 6th, 6th or 7th. It is believed that the entire Rocky Mountain region is visited by them.—*Scientific American.*

—M. Plantamour has been continuing his observations on periodic movements of the ground as indicated by a spirit level at Geneva. In the year ending September 30, 1880, there was a remarkable lowering on the east side between November and January. The total amplitude of this was about 25.80; in the previous year it was only 22.08. The mean temperature of December was indeed unusually low (6 deg. under the average for Geneva), and the lowering was no doubt partly due to this; but M. Plantamour thinks some other cause must have acted. Variations of temperature in the sense of rise are always accompanied by an elevation of the east side; in the sense of fall by a depression. The spirit level in the meridian gave much the same indications as the previous year. From October to March it shows an elevation of the south side, with rise of temperature and depression with fall; but from April to September the opposite occurs (a lowering of the south side with rise of temperature, and vice versa), indicating again some other agent than external temperature.

—Dr. Angus Smith, F.R.S., the inspector under the Alkali Acts, has presented to Parliament a voluminous report. The professor believes that he has discovered "a new mode of analyzing the atmospheric conditions under which we live in manufacturing towns." He expects in this way to show "how much a town or country suffers by loss of light, and to find how much this loss affects health of plants, and it may be of animals and of man." The test is a chemical one, and rests upon the fact that when iodide of potassium in solution is treated with a small quantity of nitric acid a change takes place when the mixture is brought to the light, and the amount of iodine that is set free can be measured with great exactness. This is the germ of a process for measuring light that may be developed in time into a valuable agent for the examination of climate. The next topic of importance is the universal presence of ammonia, which the inspector has found upon every object he has examined, indoors and out of doors, in the town and in the country. Ammonia, it is believed, may be an index of decayed matter. By suspending a piece of glass anywhere, and after a while washing the outer surface with pure water by means of a spray bottle, and applying a Nessler solution to the washing, the presence and quantity of ammonia are ascertained. This Dr. Smith hopes to make "a ready popular test for air, a test for sewer gases, for over-crowding, for cleanliness of habitations, and even of furniture, as well as for smoke and all the sources of ammonia." In the conclusion the professor speaks of the enormous value of the ammonia obtainable from the fifteen millions of coal made now into coal, if the process, said to be so successful at Bessemer, should be found successful here. If we were to treat all the coal used in the country in the same way, we should have above six times as much ammonia, which would be capable of increasing our crops by fifty millions sterling of value. "Are there so promoters of public companies ready to make a gigantic fortune by working out this idea?"

POSITION OF MARRIED WOMEN IN THE UNITED STATES.

We have thirty-eight States in our Union. In twenty-eight of these a married woman has legal ownership and separate control of all property owned by her before, or descending to her after, marriage. In ten States her property owned before marriage is secured against any attempt of her husband to alienate it without her consent, but he has full control of incomes resulting from it; and in two of these States the husband receives property which, were she single, would descend to her. In twenty-one States a married woman's earnings are her separate property; in eight States her right to such earnings is legally restricted in various ways, as in Georgia, where a married woman can own absolutely as separate property her own and her children's earnings deposited in a savings bank "if the same do not exceed \$3,000," and in nine States a woman can hold absolutely in her own control all property coming to her from any source save by gift of her husband—as in Massachusetts, where a recent decision of the court under this law was that a woman could not own her own wardrobe if her husband gave her the money to buy it. This decision, we may add, a legislative enactment has very recently at-

tempted to overrule by ordaining that a married woman may own her personal apparel in Massachusetts.

In twenty-one States a married woman is solely liable for her antenuptial debts; in five States her husband is liable for them to the extent of the property she brought to the common stock at marriage.

In sixteen States a married woman can make a will devising her separate property according to her wish; in twelve States she can so will her estate, provided she gives her husband as much as the law of that State would give him if she died intestate; and in one State she can make a will only by her husband's written consent.

In nine States special enactments qualify a married woman to be executrix or administratrix; in others the right is secured under other forms of law.

In twenty-four States a married woman may sue and be sued separately from her husband; in other States provision is made for their union in various specified suits.

In fourteen States married women can cause their husbands' lives to be insured for their benefit, and retain the policy against all outside claims, within certain limits of amount. In twenty-two States there are homestead acts which secure a certain amount of property, the home and its belongings, to the widow or wife, against all creditors of the husband. In fifteen States a married woman may carry on and control a separate business without limitations; in ten States she can do so with some restrictions, which vary from a simple requirement that she shall file her intention to do so in court to the necessity of proving that her husband does not support her properly.

DIED FROM JUMPING THE ROPE.

The New York Sun contains the following sad record of the death of a little girl from these causes. It says:—

"Died from congestion of the brain, caused by jumping the rope," was the cause of death certified by Dr. Felix Nordemann, of 242 East Twelfth street, in the case of Rachel Duowyska, aged five and a half years, of 31 Bayard street, who was buried yesterday. The parents are in comfortable circumstances. The father keeps a fancy store in the Bowery. Little Rachel was one of seven healthy children. She was a bright, pretty child, and a great favourite with her companions. She was very fond of jumping the rope. A little girl who played much with her said yesterday: "Rachel would always jump as long as she could. Sometimes she would jump as many as a hundred, and then she would have to sit down she would be so tired. She always wanted to come in as often as any of us was jumping. We used to try and get her to sit down and look at us, but she would not rest so long as she could jump."

Another of Rachel's little companions said: "She used to be very fond of jumping what we call 'pepper, salt, mustard, elder, vinegar.' That is when we begin to jump slow, and keep jumping faster until we get to vinegar, when you have to jump as fast as you can."

The mother said: "I used to tell her not to jump so hard. I have so many children that I could not watch her all the time. On Sunday she came in after jumping and said she felt very bad. She had pains in her head, cramps and convulsions. We sent for three doctors, but it was too late before one came. He could not do anything for her, and she died at 10 o'clock on Monday."

Dr. Nordemann said: "I have no doubt that the child died from over-exertion in jumping the rope. She was a healthy child, and had met with no accident. It is a very common thing for children to injure themselves by jumping too much. It often leads to heart disease, especially where there is any predisposition to it. Many little boys injure themselves in their attempts at walking matches, riding the bicycle, and other feats of endurance."

Dr. Jayne of the Sanitary Bureau of the Health Board said: "I have known of several similar cases. Parents should be on their guard to prevent all forms of over-exertion."

—It is a fact not generally known that Mr. Farnell was at one time a regular attendant at the religious services of the Plymouth Brethren. Several members of his family belong to the section of that body commonly called "The Exclusives."

—The Rev. S. F. Green, rector of St. John's, Miles Platting, near Manchester, was arrested on Saturday, and conveyed to Lancaster Castle, for contempt of court, in continuing ritualistic practices after they had been forbidden. It is stated that an application for his release from custody will be immediately made to the Queen's Bench Division.

—Lord Beaconsfield has been, since he was 47 years of age, subject to attacks of gout, like Lord Lyby, his late leader, and calls the occasional visits of the enemy his "renovators." It is only when the gout has been, as now, for some time suppressed, and attacks some inferior organ, that danger ensues. In 1852, when for the first time as Chancellor of the Exchequer he made his great speech in defence of his budget, he had to be supported into the House by Lord Henry Lennox on a muffled stool, and sustained throughout on copious draughts of port wine. Lord Granville, who sits opposite to him in the House of Lords, leading the Ministerial party, is obliged constantly to speak sitting from a similar cause.

MONTREAL PRICES CURRENT.

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

Table listing various goods such as Boots, Shoes, and Hardware, with columns for item names and prices.

Table listing various goods such as Boots, Shoes, and Hardware, with columns for item names and prices.

Weekly Review. Montreal, April 6th, 1881. Another quiet week's business has passed in wholesale trade circles, and very little animation is expected until navigation opens.

Wool. There is no excitement in the market whatever, and the situation may be written more in favour of buyers than sellers. There has been some inquiry from manufacturers, but it has not come up to the expectations of holders.



This is about the... The cold weather of the past... The market keeps very quiet...

Horse Market.

The demand for horse... The market keeps very quiet... The following were the shipments of horses...

Live Stock Market.

Butchers' cattle continue scarce... The supply of calves was liberal, but the quality was, as a rule, miserably poor...

LUMBER TRADE.

The Timber Trades Journal (London) says—The trade and navigation returns for the Dominion of Canada, which were made up for the past fiscal year and laid on the table of the House of Commons at Ottawa, on the 27th of January last, are quite as favourable as our own, and show an increasing trade with the mother country...

But in point of fact these returns refer to us by the test of figures that the United States, so far from superseding the British demand by their requirements from Canada do not by any means keep pace with it...

The total value of the exports of the Dominion last year was only twice exceeded since its confederation, and that was in the wildly speculative years 1873 and 1874...

The amount of the excess over the imports was \$1,412,711, and over the goods entered for consumption \$1,612,910. The total receipts from import and export duties collected at the Custom House were \$14,136,849, and the aggregate trade of the Dominion shows an increase in business done with the United Kingdom over that of the previous year (1879) \$12,018,438, and a decrease in that with the United States of America \$4,307,863...

FOREST DESTRUCTION.

Mr. William Little writes to the New York Times as follows:—When on the 13th of May, 1876, you published a letter from Mr. James Little, of Montreal, on the subject of the devastation of our woodlands, you no doubt remember the incredulity with which his statements were received by those pretending to be informed on the subject...

The facts that he presented, that of the whole twenty-six States, comprising the New England, Middle, Western and North-western to the Rocky Mountains, only four, namely, Maine, Michigan, Wisconsin and Minnesota, had a supply of timber in excess of their own wants, and the question was, how long the supply for commercial purposes would last the drain upon them? The white pine being the wood of prime importance, his remarks were that the supply of this timber was confined almost entirely to the three States of Michigan, Wisconsin and Minnesota...

The Northwestern Lumbermen now state, from information derived from the proper authorities, that the forthcoming report of the United States census will show that the pine timber supply of the north-west in 1880 was in Minnesota, credited by popular estimate with 40,000,000,000, only 6,150,000,000; Wisconsin, from statements varied, from 80,000,000,000 in 1860,000,000, only 40,800,000,000, and Michigan, on both the upper and lower peninsulas, 24,000,000,000, making a total supply supply of \$1,800,000,000 feet of pine timber. This paper, at the same time, states that the aggregate cut and destruction of pine in the three States is not far from 8,000,000,000 feet per annum...

so that if we deduct the past winter's cut, which has been an exceedingly heavy one, there remains standing to-day in the whole north-west only 7,500,000,000 feet, which is distributed about as follows:—

Table with 2 columns: State, and Amount. Includes Minnesota, Wisconsin, and Michigan.

From the above it will be seen that even now, when only one year of the six or seven mentioned by Mr. Little have gone, these States have reached a condition when common prudence would say they had not another foot to spare. They are rapidly growing in wealth and population, and in all probability will have to supply their own wants for twenty years from to-day; but what will be their condition in four years from this time if the continued slaughter of the pine is kept up?

In round numbers Michigan is putting with her forests at the rate of 5,000,000,000 in a year. Consequently at the end of four years she will have only 10,000,000,000 remaining to supply her more than 2,000,000 people. Wisconsin will probably put with 13,000,000,000 during the same period, leaving her with only 25,000,000,000 and Minnesota, that has not a stock to-day one quarter sufficient for her own wants, will be reduced to 2,000,000,000, leaving only 28,000,000,000 of white pine in the whole north-west (an amount little more than two years' consumption of the whole country) as the reserve supply, not only for themselves, but for the entire country. It is but trifling with the subject to speak of the few patches here and there in our own State, and in Pennsylvania, Virginia and elsewhere.

Formerly, when the New England States parted with their pine, they remained the forests of New York, Pennsylvania and Canada to fall back on, and these in their turn fell back on Michigan, but now the reserves themselves are about gone, and even Canada is forced to compete for supplies to the forests of Michigan and Wisconsin for the English market, and unless something is at once done to stop the destruction of this indispensable timber it will be all gone, and we will have only the stump-remnants to remind us of our folly.

It is to be hoped, now that the Government has come into possession of the facts, it will take means to enlighten the public on this most important subject. An enlightened public opinion can do much to aid in stemming the tide of destruction which is now going on with reckless indifference. A knowledge of the value of their property will cause owners to be more careful of it, and not be disposed to part with it to go abroad at one-tenth the value it will have in a few years, standing in their forests for their own wants. The substitution of spruce, hemlock and other woods for such purposes as they are suitable, by stopping the frightful butchery of the timber which is now going on by the use of circular saws, that turn one-quarter of the tree into sawdust; by allowing the young trees to grow; by the Government withholding its timber lands from sale; by preventing, if possible, the making of square timber in the woods, by which one-third of the tree is cut into score blocks and shavings, furnishing the most fruitful source of fire, and by throwing open our ports to the free entry of timber from any country that may be willing to spare it—and now that the timber is about gone, if the lumber papers have at least learned to recognize the difference between a pine tree and a raspberry bush, so as to give their patrons correct information on this important subject, some little may yet be done to prolong the supply of this indispensable timber.

—An Ottawa firm of forwarders have contracted to deliver 12,000,000 feet of lumber at Burlington during the present summer. The rates paid are said to be good.

—Mr. Peter McLaren has made arrangements with the Kingston & Pembroke Railway for the conveyance of 1,000 cars of square pine timber from the Lake country.

—Quite a lumbering business is springing up at Rat Portage, at the head of Lake of the Woods; a number of large saw mills are being constructed there. They are surrounded by considerable forests of pine and more extensive tracts of poplar. The Canadian Pacific railway crosses the Winnipeg river at Rat Portage, and a town of some importance is likely to result.

—There is a general complaint at Chicago, New York, and at various other points, of broken assortments and a necessity for dealers to buy of each other to fill orders. Some dealers have more than their trade requires of a certain kind of stock and not enough of some others. When the situation is reversed with a neighbouring dealer the difficulty is easily overcome, but it is not an entirely satisfactory way of doing business.

—From recent reports from the interior of Huron we gather that in consequence of the unusual quantity of snow in the forests this winter, it is doubtful whether the entire quantity of timber contracted for by the lumbermen can be prepared. The cutting and skidding of the timber are carried on with great difficulty. The frost continues severe at Cronstadt. The ice is thick and the snow deep, and the opinion of a late opening continues to prevail.

—A huge stick of pine timber for the bowsprit of Craniall & Co's new vessel is now lying in the yard. It is 40 feet long, about 22 inches square at the small end and nearly 3 feet square at the base. It was cut in the neighbourhood of Irish-ton, or Cocaine, 15 miles from Moncton, by Mr. John Bishop, of Irish-ton, in this parish, who started for Moncton Friday and did not reach here till 12

o'clock Saturday night. Nine horses were required to haul the stick, as the roads are very bad, and five hours were consumed in getting from Lewisville to the yard.—Moncton Times.

—One of the noticeable eventualities of the late great sale, says the Timber Trades Journal was the way that Quebec spruce held its ground in spite of the enormous quantity of other kinds thrown on the market, at the same time and place, to get any price that could be obtained for it. It may be said that, instead of suffering from this competition, it held its own, and triumphed over it, for quite as good prices were obtained at this great sale as had been previously reached by the market, at the same time and place, to get any price that could be obtained for it. It may be said that, instead of suffering from this competition, it held its own, and triumphed over it, for quite as good prices were obtained at this great sale as had been previously reached by the market, at the same time and place, to get any price that could be obtained for it.

According to present appearances there is every indication that the water in the Ottawa River will be unusually low this spring, much below the average height of ordinary years. In addition to the fact that the depth of the snow in the lumbering regions was much below the average during the past winter, the early thaws have melted away nearly all that was on the ground, and the water thereby formed has nearly all run off. In thick swamps, however, there still remains some snow and ice, although much less than usual. Consequently, unless we have heavy rains during the next two months, indications support the conclusion that the water in the Ottawa and its tributaries will be much below its ordinary height on the 15th of May, when the highest water generally appears. Low water will be a serious obstacle to getting out the large quantity of fine logs made during the past winter, which would be a great disadvantage to the trade, now that saw lumber sells at such good prices. However, if lumbermen can manage to get their timber out of the small creeks into the main channel before the water begins to fall, they may succeed in bringing it to its destination.

—The Glasgow Herald of March 7th says that up to the present time the prospects of a busy timber season from the St. Lawrence are not very encouraging. This arises from the fact of there not being any great quantity of timber to ship. Of the timber fleet owned in Clyde, up till date barely a score have been fixed for spring voyages, the rate of freight also being somewhat below the rate paid last spring. The average rate fixed ranges from 23s to 24s, only large vessels being known to have been chartered for four voyages at 25s. The average rate is thus about 1s less than last year. It is anticipated, however, that freights may improve during mid-summer and fall. Owing to the present low rates, ships usually engaged in the Quebec trade are seeking and finding employment elsewhere. Last year the losses among Quebec trading ships were exceptionally heavy, about forty vessels having been wrecked or abandoned. We understand that Messrs. George Adam & Co., timber merchants, Greenock, have purchased the Quebec built ship Lincolnton (1,220 tons) to replace the ship Challenge, which was lost on the Island of Ogha in November last year, while on a voyage from Quebec to Greenock. Several of the engaged ships are now making preparations for fitting out at Greenock, their usual period for departure being early in April.

WHAT MONTH MOST PEOPLE DIE IN?

What month most people die in and what they die of is an interesting question, to which the last bulletin of the National Board of Health makes an answer for 1880, based on a mean population of 8,100,000, representing the majority of the cities in the United States. The answer is given in tabulated form, with death rate per thousand. Nine diseases are given as the chief causes of death. They are consumption, acute lung diseases, diphtheria, enteric fever, malarial fever, scarlet fever, measles, whooping cough and small pox. This list follows the order in which the greatest number of deaths occur, and it must please nervous people to learn that small pox is the least cause of death. For consumption the highest death rate is 3.32 per thousand, in December, and the lowest rate is 2.89, in June. The acute lung disease, beginning with January, at 2.32 per thousand, rises

regularly to April, then declines regularly to August, with 1.04 deaths per thousand. Then again it rises to December, in which the rate is 3.20 per thousand. The highest death rate for diphtheria is 1.19 per thousand in November, the lowest 0.56 in June. Malarial fever is highest in September and October, with 0.65 and 0.54 as the death rate, while naturally it is very low from December to April. Scarlet fever runs unevenly throughout the year; the highest death rate being 0.65 in December and the lowest 0.11 in July. Whooping cough runs very unevenly throughout the year, the highest rate being 0.27 in March and July, and the lowest 0.11 in December. Small pox did not rise over 0.10 per thousand except in November and December, when the rates were 0.17 and 0.16 per thousand. The highest death rate from measles was 0.40 in May and the lowest 0.02 in October. From this it appears that above all other lung diseases carried off by far the largest number of persons last year, and that such cases far beyond any others are the bane of American city life—a fact which has often been maintained before, but not so thoroughly shown as by this black table and chart of the National Board of Health.

THE WORLD'S RAILROADS.

The lines of railroads in the five divisions of the earth, in round numbers \$10,000,000, and would, according to Hinton Kolk, reach eight times round the globe, although it is but little over half a century since the first railroad worked by steam was opened between Darlington and Stockton, September 27th, 1825, and between Manchester and Liverpool, September 15th, 1830. It is shown that in France, previous to the existence of railroads, there was one passenger in every 335,000 killed, and one out of every 30,000 wounded, whereas, between 1835 and 1875 there was but one in 2,178,800 killed, and one in 550,439 wounded, so that we may infer that the tendency to accidents is rapidly diminishing. Railroad travelling in England is attended with greater risk than in any other country in Europe. A French statistician observes that if a person were to live continually in a railroad carriage and spend all his time in railroad travelling, the chances of his dying from a railroad accident would not occur until he was 900 years old.—Railway Age.

Captain Boycott, whose treatment by Land Leaguers gave rise to the term "boycotting," arrived from England on Tuesday, and is travelling under an assumed name. A sudden death occurred at the Model School, Brandon, yesterday morning. A young lady named Frances Kerr, about 16 years of age, who was living with her sister, dropped suddenly in the cloak room of the Model School, and expired.

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THE METAL TRADE.

THE BRITISH MARKETS.

The correspondent of the American Manufacturer, writing from Wolverhampton says: Very unsatisfactory has been this week's experience in connection with the iron and steel industries of Great Britain. Losses continue to be the rule rather than the exception. I do not hesitate to declare my belief that a good 85 per cent of the business now being done is either at a loss or without profit. Most disappointing is our experience of your custom. We had hoped that by this time the metal requirements of your country would have been so urgent that you would be able to supply yourselves at home with what they need, many Americans would have sought to buy on this side. Though you are buying more steel blooms, yet you are not in certain of the centres maintaining the position which you occupied in the winter. This is especially the case about Sheffield. Hence, however, there is going to Germany this week larger quantities of unwrought steel; and my Sheffield friends do not take note that while you are buying less of this commodity from them at the moment you are at the same time buying more from Germany. From all our steel localities together the aggregate of your purchases of blooms and billets has been an increase of 3,782 tons in the first two months of last year. Yet our whole shipments of unwrought steel in January and February this year has been no more than 13,521 tons. Of this total 9,292 tons have gone to the United States, against 8,500 tons in January and February of 1880. More money is also being paid per ton, for while the greater value upon our two months' total increase of 4,419 tons was at the rate of barely 6 per cent, that upon the increase (2,611 tons) of February over January is at the rate of 15 1/2 per cent. This feature of the current trade we are doing is the more cheering as it is to be assumed that certainly some portion of the blooms you are now taking from us has been made from the less costly ores with Thomas and Gilchrist have made available. The estimated worth of the 13,521 tons specified is now estimated at £198,479, whereas the 9,102 tons were set down as of the value of £167,024. The 1,185 tons which we sold in February was computed of the value of £98,471, whereas the 4,644 tons which we sold in February, 1880, was entered as worth £83,893. The United States is again buying our British rails. Indeed is buying nearly all the iron rails which we export, for she took 10,419 tons out of the 10,948 tons shipped in February. The price we are receiving appears in the fact that the value of the 38,852 tons of rails (steel and iron together) which we made in February is set down at £763,375, against £743,195 at the value of the 35,983 tons we sent away in February, 1880. Thus the increase on the month is about 2,000 tons in quantity and 8 1/2 per cent in value, and in the two months there is a decline of nearly 9,000 tons, but an increase in value of 1-3 per cent. Our government have not yet learnt to accurately distinguish between iron and steel rails exported. Our decreased exports of iron and steel represent 71,382 tons compared with February last year, while the decline in value is 22 per cent. In the two months of this year the decline in quantity is 180,349 tons and in value 21.4 per cent. Our exports of pig and puddled iron during the month were less by 81,839 tons in quantity, and 87.3 per cent in value. In the two months the decline in quantity was 85,323 tons, and in value 50.7 per cent. Of bar and angle iron our month's exports declined to the extent of 7,000 tons in quantity, and 38 per cent in value. For the two months the falling off was 18,000 tons in quantity and 36 per cent in value. The decreased buying of the United States is almost the sole cause of our reduced shipments. There has been a slight reduction in the purchases also of Belgium; but Holland and India have been better customers. We, however, encourage ourselves with the reflection that as compared with 1879 we are doing a much larger export business in iron and steel, taking all the markets together. To-day Messrs. John Bagnall & Sons (limited), of the Gold Hill Iron Works, West Bromwick, South Staffordshire, have issued their report for the year ending December 31st, 1880. The directors regret that the anticipations of a better profit and loss account, formed alike by the shareholders and themselves at the last general meeting, have not been realized; the latter half of the year's trading having swept away the balance of profit resulting from the trading of the first five months, and left behind a serious loss. The report continues: The loss which the company has sustained is mainly owing to the rapid and unprecedented fall in the value of stocks of materials and of finished iron which occurred on the sudden collapse of the American demand. The contracts that were on the books of the company in the early part of the year, including those for the purchase of material for their anticipated requirements, and which were at the time of considerable value, have, owing to the great fall in price and the impossibility of obtaining orders at remunerative rates proved the source of heavy loss. An analysis of the balance sheet shows that the loss upon the year's trade is £2,441, and the company's net liability on account of interest on debentures and loan account is £3,086. Thus the total deficiency becomes £12,527. This is so notwithstanding that the company's bad debts are not

down as only £389, and notwithstanding furthermore that there is no item of depreciation either upon ironworks or upon collieries.

The Glasgow pig market has been slightly stronger this week than last notwithstanding that early in the week the failure of Messrs. Currie & Co. the iron import merchants of Montreal had a disquieting effect, for several Glasgow firms are important creditors. The demand from your side still sadly disappoints expectation, but the Continent is buying a little better. Holders of warrants who bought at 50s and higher per ton continue to sell out, and, though other investors are willing to give 49s, their number is not sufficient to prevent the market from being flooded. Yesterday afternoon business was done at 49s to 49s 7/8 cash, or a rise of 3/8 per ton upon the week. I may mention that when the year opened warrants stood at 53s 9d. The lowering of makers' prices still fails to attract buyers. There are now 120 furnaces blowing, an increase of six over last year. Messrs. Connal's stores continue to rapidly augment. Last week 2,200 tons were added, and the stock now amounts to over 629,000 tons. Last week's exports totaled 9,900 tons, a falling off of 1,360 tons over the previous week, and of 8,000 tons compared with a year ago. The imports of pigs from Middlebury were last week nearly double those of a twelvemonth back, amounting, as they did, to 6,395 against 3,400 tons in the corresponding period of 1880. Orders for manufactured iron are keenly competed for, as the result of a rather lessened demand. This week's open market prices are as follows, but in actual transactions the iron may be got for rather less: Common bars, at works, £8 5s. to £8 10s.; angles, £8 5s. to £7 11s.; ship plate, £7 10s. to £8; boiler plates, £8 to £9; ball rods, £8 5s. to £8 10s.; railway chais, £4 to £4 10s.; and pipes, £5 to £6. The Cleveland pig iron market has had about it a more satisfactory appearance this week, induced in part by the finer weather, and the downward tendency of prices has been stopped. Indeed, a 3d net advance has been secured, and 38s. 3d. net has been the ruling price for No. 3 prompt f.o.b. deliveries. Yesterday at Middlebury 38s. 6d. was the price for deliveries next month, and sellers offered 39s for deliveries in May and June. Some makers realized 38s. 6d. for No. 3 prompt cash, while others stood out for 38s. 9d. and even 40s. But these latter were unable to do any business. Merchants' prices for No. 4 forge pigs are relatively stronger than for any other description, being only 9d. per ton below No. 3. Through Mr. Augustus Seelye, the representative in this country of the Rhode Island Horsehoe Company, Mr. Charles H. Perkins, of Providence, has done a good thing. For £25,000 he has sold to a substantial English company, formed for the purpose, all his rights in his horsehoe patent, outside the States and Canada. He leaves, however, all coal's up to the time of the allotment of shares. So attractive is the scheme of the company that though £125,000 will be required by the 1st of May the money has been subscribed three times over; and to-day the shareholders who are receiving their allotment letters deem themselves happy. A similar 20 per cent. dividend to that now being declared by the Rhode Island Company is looked for here, and any profit upon the letting of the sites elsewhere in Europe to boot. The president of our Royal College of Veterinary Surgeons is the chairman of the company; and Mr. Perkins shows his confidence in the future of the business by offering to take the £25,000 either in cash or in shares, as the directors may determine. More than twenty of our largest tramway companies already use the Perkins shoe, and the British demand is in excess of the States supply. With this custom the company will start on Thameside. The machinery they have already contracted for is to cost £25,000; half of it is completed and the rest is to be delivered in three months, and Mr. Seelye has been appointed manager. The capital of the company is £180,000; but £15,000 is to remain in reserve.

THE LONDON MARKET.

The following were the closing prices in the London metal market March 12, 1881.

Table with columns for metal types (e.g., Bessemer rails, English spring, Swedish iron) and their prices in London. Includes sub-sections for 'COPIERS' and 'SHEATHING'.

Billets are unchanged at last quotation at about £7 5s. to £8. Tool steel varies in price only seldom consequent upon its high quality and this week there is no alteration. Steel rail scrap is cheaper, and some minimum sorts are now and again procurable at as low as £3 10s. Old iron rails are easier and from some sellers they may be had at £4 2s. 6d. for D.H. sorts, and 1/2 United States ports. Wrought iron scrap may be bought as low as £3 10s. f.o.b., but the demand is not large. Cast scrap still keeps at £2 3s. to £2 5s.

UNITED STATES MARKETS.

Pittsburgh.

Pig Iron—We have again to report a very quiet market. In accounting for this condition of the market dealers do not agree in all particulars. But on one point there is a unanimity of opinion, and that is concerning the effect of the heavy purchases in December and January. December is usually a very dull month, but last December was an exception, the purchases being heavy, and at least the usual activity was manifested in January. All the dealers with whom we have conversed agree that the heavy purchases made in those two months are largely responsible for the dullness now existing. In addition to this, one dealer said that March was ordinarily a dull month at any rate, and that he anticipated a better market after the 1st of April, the beginning of a new quarter, the purchases made in December and January having been made to cover the quarter just expiring. Another reason advanced is the low price of bar iron. It is stated that the manufacturers of this class of finished iron have been holding off until prices of their product should advance, but that the season was now so far spent that they had almost abandoned the hope of this.

Manufactured Iron—The season being extremely backward the usual spring activity is correspondingly late in making its appearance, and as a consequence the market is somewhat weaker. Bar iron may be quoted at 2 1/2¢ to 2 5/8¢; sheet No. 24, 3.65¢ to 3.75¢; tank, 2.60¢ to 2.70¢; hoops, 2.80¢ to 2.90¢; boiler plate—C. H. No. 1, 5 1/2¢; homogeneous steel, 6 1/2¢.

Wrought Pipe and Tubes—A meeting of the manufacturers of pipes and tubes was held here on Thursday and Friday, and some changes were made in prices. The discount on gas and steam pipe is now 60 and 65 per cent., and on boiler tubes 45 per cent. The net price of 1/2 inch oil well casing is 70 cents, and of 2 inch oil well tubing 21 cents.

Rails—There have been orders placed here for steel rails recently, but the price may be nominally quoted at \$23 to \$24, cash at mill. Light iron rails may be quoted at \$48 to \$50.

Steel—There is no change to report, prices and demand continuing about as last report. It is thought the inclemency of the season is keeping back a good many orders. Best quality refined cast steel, 11 to 12 cents per pound, as to quantity purchased; crucible machinery steel, about 7c, and Bessemer and open hearth do. at 8c to 8 1/2c; Bessemer and open hearth springs, 4c to 4 1/2c; and riv. pie, 4 1/2c to 4c.

Old Rails—We have heard of no transactions since last report.

Philadelphia.

Pig Iron—The raw iron market is more active this week than last, and in some instances higher prices are being asked. One firm led the way by quoting one dollar per ton higher, and a few others followed suit, but as the furnaces which have made the advance are largely sold ahead the advantage, whatever it may amount to, will be reaped by the inferior iron, which have been hanging on the outer edge of the market all winter. Good grades are well sold ahead, and buyers who must have supplies within sixty days are paying better prices. The upward tendency, as usual, attracted a larger number of buyers, who are putting out inquiries, and buying more freely. The market's excess last week's considerably. This movement has been looked for for several weeks. Sales were made this week at \$25.50 for No. 1 foundry; \$23.50 for No. 2, and \$22 delivered, for gray forge. Freight is down and large shipments have been made to points which have been out of. English iron sold quite freely at \$18. Scotch moves quietly at \$22 to \$24. Production is not gaining on consumption in our iron, and a steady and firm price is looked for. Makers report numerous inquiries. Upwards of 20,000 tons of Bessemer pig have been contracted for within a few days.

Plate and Tank Iron—The mills are not as well sold up as is desirable, but a fair amount of business keeps coming along. Orders aggregating some two thousand tons have been heard of, but prices are below the card, which continues at 2 1/2¢. Refined iron, 3 1/2¢; shell, 4 1/2¢; flange, 4 1/2¢; fire box, 5 1/2¢.

Wrought Pipe—Negotiations for several hundred tons have been closed. Discounts, 65. Inquiries are increasing and an active demand is in sight.

Nails—The requirements of the building trade has maintained a fair demand. Orders have been increasing, and the mills are well sold ahead. Carl, \$3. An unusually large amount of building is contemplated, both here and through country districts, and a large and steady demand during the season is looked upon as probable.

Steel Rails—Our market is quiet. The only matter of interest is rumour. Buyers are still in the market. Some roads are waiting, thinking rails could be had when wanted, and now cannot get them. The requirements of the new lines in the north west and south west are such as to absorb all capacity. Not much is known as to prices. Negotiations are going on for supplies from abroad. A good deal of business is being done in steel blooms, and statements vary as to the amounts. Steel rails are quoted at \$63 to \$65. Large deliveries are being made in the south-west.

Iron Rails—Rome, N.Y., has started to roll blooms, and Indiana, Polia, Kimira, and one or two other mills are talking about it, but the cost of rolling steel blooms in iron mills makes them cost as much about as Bessemer mill steel rails. The output from this source is increasing, and as time is a very important factor at present, the demand is increasing.

Old Rails—But little can be said of the old rail market. Some holders are firm. Others sell by dropping 50 cents; as most makers have immediate wants covered there is not much doing. Any amount of material can be sold at buyers' terms; very little at sellers' terms. Quotations may be put at \$17.50 for tees, and \$29 for doubles. There were sales at these figures and offers at less.

Scrap Iron—The fact that stocks are increasing and prices weakening leads some buyers to wait. Sellers are, however, quite firm at \$28 for choice lots, and \$19 to \$20 for cast.

Steel—The steel works represented here are all favoured with a good volume of trade, and with inquiries for future supplies. Buyers are stocking up freely. Prices in general are firmly maintained, and the demand quite active for all kinds of agricultural and tool steel.

New York.

The movement of foreign iron at the port of New York from March 22 to March 28 inclusive, has been as follows:

Table showing movement of foreign iron at the port of New York from March 22 to March 28 inclusive. Columns include Pig, Bar, Old rails, Iron rails, Steel rails, Scrap, and Splice iron.

Pig Iron—That portion of the last statement of the British Board of Trade returns representing the shipments of pig iron from Great Britain to the United States during the first two months of the current year have, in connection with other data bearing upon the production and consumption, and the situation of stocks there, attracted more than ordinary attention in this market. It would appear that, while Great Britain's home consumption was some 22,000 tons greater than during the corresponding period of last year, the production has increased 87,883 tons, and the exports fallen of 70,808 tons, thus leaving an accumulation of no less than 127,000 tons to the surplus stock within the short period of two months. This increase is due in a great measure to the falling off of 91,525 tons in the exports to the United States as compared with last year. On or about the 15th of March there was a total stock of 1,207,000 tons, including 868,500 tons Scotch, and 340,500 tons English. At the present time, it is estimated the production is running about 8,000 tons per week in excess of the market's requirements. This is, of course, causing a little apprehension, and the query arises, will production be curtailed, or is there to be a heavy decline in prices?

Rails—Of foreign there have been sales recently aggregating about 13,000 tons steel, to arrive, part at \$23.50 at New York; 700 tons do. from store at \$24, and 1,000 tons heavy iron, part at \$46.47 here. In American makes no new business is reported, though the demand is still represented as active. The mill prices are about \$61.00 for steel, \$46.47 for heavy section, and \$49.00 for light section iron.

Old Rails—Sellers appear inclined to meet buyers at about the prices paid last week, and fair sales of moderate quantities are making. The market cannot, however, be quoted more than barely steady at \$27 for T's and \$28.50 for D. H. Among the week's sales are 1,500 tons of Barlow's (held in Boston) at \$28.50 there; 1,500 tons T's at \$27.50 f.o.b. cars at Jersey City, and 1,000 tons D. H. at \$28.50 held.

Scrap Iron—The market has weakened a little on wrought, and \$28.00 may now be considered the best price for No. 1 wrought, with very few inquiries. Cast borings are still quoted at \$12.00, stove

plate at \$16, cast machinery scrap at \$18.00, and old car wheels at \$30.00 as to condition.

RAILWAY MATTERS.

AMERICAN RAILROAD DIVIDENDS FOR THE YEAR 1880.

Mr. K. Brewster's Stock and Share List, dated London, 17th March, contains the following: The New York, New Haven, and Hartford has for years paid 10 per cent. In 1869 and 1870 it paid as high as 12 per cent. This road has a large passenger business with little or no competition, and it has been able to keep its tariff rates at a point where a large profit was certain. The Concord and the Manchester and Lawrence have paid 10 per cent. uninterruptedly for 10 years or longer. Panama, which does not lie within the United States, but extends from Aspinwall to Panama, and has practically a monopoly of the business between those points, is now paying a larger cash dividend than any other road. In 1879, 13 per cent. was paid on that stock, in 1880, 16 per cent., and now a 3 per cent. quarterly dividend has been declared. Atchison, Topeka, and Santa Fe, which only a few years ago had but dim prospects before it, now pays two per cent. quarterly. Chicago, Burlington, and Quincy after making a 20 per cent stock distribution, is now paying 8 per cent. on the increased stock. Philadelphia and Reading remains in the throes of insolvency and acrimonious litigation. With regard to the great trunk lines, New York Central, which paid 10 per cent. in 1875, now pays 8 per cent. quarterly in the fiscal year ended September, 1880, amounted to nearly 12 per cent., but about \$3,000,000 was spent for new equipment, real estate, etc. Baltimore and Ohio pays 10 per cent. as it did formerly, being the only one of the trunk lines now paying that rate, but its stock is relatively small in comparison with the bonded debt, and consequently the increased profit goes further than they would if the stock were five or six times as large. Boston and Albany paid 10 per cent. till 1876; but now pays 8. Lake Shore pays 3 per cent. now as it did prior to 1874. Chicago and Alton pays 8 per cent. Illinois Central 7 per cent., but it paid 10 per cent. regularly at one time. Philadelphia, Wilmington and Baltimore has paid 3 per cent. regularly for many years. Union Pacific pays 6 per cent., but in 1876 and 1877 it paid 8. Old Colony is 6 against 7. Danbury and Morwalk has lately paid 8, but in the year 1870 it paid 16 per cent. Without doubt some of the roads here mentioned are earning 10 per cent. or more at present—indeed the Pennsylvania earned something like 18 per cent., but the \$2,000,000 spent in Philadelphia in the new terminus, and other large sums for the betterment of the line, were taken from the earnings, and, therefore, the last half-yearly dividend at the rate of 8 per cent. per annum was less than one-half what the road earned, presuming they had followed the English plan of charging the capital account with the betterment. The North British railway, for instance, has not yet rebuilt the Tay Bridge, although the loss may approach £100,000 or even more, and properly speaking no dividends ought to be paid this year or next on the ordinary capital of this company.

The stockholders of the Fallman Ore Company have voted to increase the capital stock from \$5,000,000 to \$8,000,000.

There are at present 188 hands employed in the Quebec, Montreal, Occidental and Ottawa railway work shops in Quebec.

The Canadian Engine and Machinery Company at Kingston have contracted with the Credit Valley Railway for eight locomotives.

The Texas and St. Louis Narrow Gauge Railroad obtained \$1,000,000 in New York for the construction of a narrow gauge road from Tazewell to a point opposite Cairo, Ill.

Over 100 cars are distributed along the St. Lawrence and Ottawa Railway, being loaded with hop poles, for the American market, and the demand is for still more cars.

Forty-six freight brakemen have been dismissed from the New York Central and Hudson River railway. The perfected system of signalling does away with the necessity of more than two brakemen on a train.

The joint executive committee has reduced rates from Chicago to New York on grain, provisions, and live hogs 5c, commencing on April 1st, thus making rates on grain 30c., and provisions and live hogs 35c. These rates are to remain in force during the summer.

Great Western Railway of Canada—Traffic for week ending March 25th, 1881.

Table showing traffic for week ending March 25th, 1881. Columns include Passengers, Freight and live stock, Mail and express, Total, and Corresponding week last year.

—The midnight express... about the electric... will be illuminated by Edison's wonderful... This wonderful scientific... will, it is said, make the most... light illumination for fully two miles... As this will be an experimental... and not likely to be repeated for... those of our readers who are... this great display of the... should not fail to be at the station.

—Ports are being made to induce... to be built from... to Annapolis, twenty-three... a level country. Baltimore... as it is against... harbor that never... Baltimore's harbour is... owing to the muddy... of the Potomac. The route from... Chesapeake would be... thereby.

—The public will be interested in... Mr. Killis, C.E., and staff... on Monday, the location of... between Peter... and Omeene, in behalf of the... We understand that... to the attention of the Company to... of this much desired link in... of railway communication, and that it will be pushed forward to... with the least possible delay.

—The elevated roads have had two... the earnings are above... We would suggest again... two "wallows do not make... It will take a larger flock of... than is now in sight to dispel the... of discontent" from the Man... Elevated Company. The superintendent... that the road—not the company... they have to slog to lose—is... an average loss of \$2,000 per... or at the rate of \$250,000 per year, and we believe he speaks the truth.

—From a foreign exchange it is... the former superintendent... of the Charkov and Nicolai Railroad, at a... recently held in Russia, declared that the order of the minister of... caused an unnecessary... of \$1,500,000 a year for... the Russian railroads, and stated that when it was... to increase the capacity... alone, the minister... of nearly \$30,000,000 for rolling stock, etc., when \$2,000,000 would have been amply sufficient.

—An order in council was passed... to the Manitoba South-western Railway about two million acres of land, equal to 6,400 acres per mile. This land is described by Professor Mar... government botanist and explorer as being some of the richest land in the North-West. The charter is looked upon as the most valuable in the Dominion, having all the essentials, viz: settlement... of the Canada Pacific Railway, valuable coal fields at its southern terminus and the richest agricultural country to pass through.

—The Texas Pacific is being pushed... now but 250 miles from El Paso, to which point it will be completed in eighteen months. From El Paso, a station on the Rio Grande, the Santa Fe people are building a branch line to El Paso. The distance between the two points is eighty miles, and the line will be finished in two months. From El Paso the Santa Fe will be pushed into Chihuahua, and through to the City of Mexico, under the Mexican Central Corporation. Surveyors are now at work on this line in Mexico.

—The Galveston, Brazos & Colorado Railroad (narrow gauge) was sold at the Philadelphia Exchange on the 24th ult. In 1877 the company mortgaged 15 miles of track west from Galveston for the sum of \$100,000. Default was made in the payment of the interest, and accordingly, last November a sale of that portion of the road secured within the mortgage was advertised. A postponement has been two or three times effected, but the sale was finally consummated, and the road was bid in by Mr. Charles S. Hinohman for \$5,000 on account of the owners of the remainder of the property.

—Louisiana & Missouri River Railroad stock has been very much neglected, even in Boston, where the stock has been... since the annual report was given out. A new effort has been made to advance the stock by the improbable rumor that Chicago and Alton was about to exchange its stock for that of the former on the basis of one for four. As Chicago & Alton is selling at 138 to 140, Louisiana & Missouri stock would be worth 34 to 35 instead of about 20, at which the stock has been selling. The road being virtually owned, as well as operated, by the Chicago & Alton Company it is more than probable that it will be liquidated by that company sooner or later, and on terms advantageous to the controlling company.

—Work has been begun on the Colorado & Western Railroad. A Colorado... says: The road was surveyed two years ago, but for want of confidence was not begun, but now they propose making up for lost time and will grade the road down the Blue, as called, to the Grande as if it is a sulphur spring, thence to North Park and eventually to Laraine. The line will connect with the North and West by the oldest known route, and when finished meet in the near future prove very profitable.

The superintendent will set at work at once as many kinders and cutters as he can employ. This looks like business, and we expect to see the iron horse in the valley of the Blue in another fall's snows cover the ground.

—The Russian Government, after five years' vacation from railway building, is once more turning its attention to works of peace. There are now forty railway companies in Russia, working 21,000 kilometres of metal road but only six of them pay dividends, of from 1 to 21 per cent. All the rest are kept going at the cost of the State. It is noted by the St. Petersburg Correspondent, that of the Temp as a curious fact that not a single Jew is connected with the management of any of the dividend paying lines. After having tried the plan of allowing private companies to make railways, the Government has abandoned it in disgust, and the new Russian lines will be constructed by the State. For the Polish line from Danzaburg to Irongrad the old system of construction by concessions granted to companies will be maintained. The lines between Ekaterinburg and Trumen and that of Ekaterinburg, which will unite the Empire and the southern coast fields, will be constructed by engineers nominated by the Minister of Public Works and representatives of the treasury. Funds are to be raised by foreign loans.—Full Mail Gazette

—At a meeting of the Board of Directors of the Northern & North-Western Railway on Wednesday, the president, Hon. Frank Smith, in the chair, the annual report was read and adopted, showing the gross earnings for the past eighteen months to have been \$1,830,205 and expenditure \$1,122,602. The ratio of the road will be altered in three divisions, commencing with the first one at the beginning of May next, and will be completed about the end of July. The regret of the board at the death of Mr. Win. Gamble was expressed by Mr. Cumberland. A new code of by-laws was adopted at a special meeting of the board. Mr. John Langton was appointed auditor for the Northern, and the lease with the Hamilton & North-Western was confirmed. The following Board of Directors was elected: Hon. Frank Smith, Major Greig, Wm. Thompson, N. Harhart, F. W. Cumberland, Wm. Leithbridge, Wm. Ford, John Blyth, C. J. Campbell, John Fisher and J. L. Blake. At a subsequent meeting of the directors Hon. Frank Smith was re-elected president and F. W. Cumberland managing director.

—The Milwaukee and St. Paul railroad recently attempted to seize the Chicago, Rockford, and Northern railroad under an operative contract claimed to have been made. They ran an engine on the disused road and forcibly took possession of the depot and offices. The officials of the Chicago and Iowa roads swore out warrants, and had five of the principal intruders arrested, and forcibly re-occupied possession of the depot. They attempted to pull a locomotive of the Milwaukee and St. Paul out of the yard, but failed. The men of the latter company, at 1:30 this morning, ran their own engine off and claimed her. A free fight between the rail and employees occurred, and further hostilities were feared. In the continuation of the railroad war the Chi and Iowa Company destroyed a large amount of property this morning by tearing up culverts and chopping away about three rods of track work near the gun case factory. Shortly after this a large gun commenced on the bridge across the Rock river, and got out several shots from under it, besides taking off many nuts from the rods running in the top to the bottom. By the authority of the mayor they were finally stopped. This makes it so that no train can possibly run over the road, although the Milwaukee Company has one within two miles of the city.

—Materials have been purchased sufficient for the laying of over 400 miles of steel rail track on the Northern Pacific Railway this season. Thirty-six new locomotives have been ordered, 1,500 new freight and stock cars and sixteen passenger cars. Construction is going on at both ends of the line, and of the existing gap of 600 miles contractors have already been made for the construction of 250 miles this season. Important eastern extensions and openings have been made this year. Contracts have been made for the construction of a road east from the present terminus of the head of Lake Superior, so as to connect with the Wisconsin Central. The Detroit, Mackinac and Marquette road extending a road to the northern portion of Michigan, will be finished this year. The Michigan Central will extend its line northward to connect with the above road, which is being built in the interest of the Northern Pacific road, and will become a portion of its line by the construction of a short connecting link. By means of a short branch the Marquette road will connect with the Canadian Pacific road, now within 200 miles of that point. These branches will bring the Northern Pacific into direct contact with Chicago with the Vesterbilt roads and the Canadian Pacific, while it will have terminal stations at the heads of Lake Michigan and Lake Huron, in addition to its present terminus on Lake Superior. A branch road to the Black Hills is under construction. Much of this season's labor will be expended on these eastern extensions.

—About \$100,000 have been subscribed towards the Kingston charcoal works. A specimen report will be in a few weeks.

POSTAL TIME TABLE. POST OFFICE, OTTAWA.

Table with columns: MAILS, ARRIVAL AND DEPARTURE OF MAILS, DELIVERED, etc. Lists various mail routes and times.

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. G. P. BAKER, Postmaster.

THE DOMINION BOLT CO.

Machine-Forged Nuts, Hot-Pressed Nuts, Rivets, Bolts, etc. 87 St. Peter St. Montreal. WORKS IN TORONTO.

Machine-Forged Nuts, Hot-Pressed Nuts, Rivets, Bolts, etc. Superior to the Average. And equal to the Best Foreign Bolts, Nuts and Screws.

To Maltsters.

THE undersigned has to inform maltsters and the trade that, having lately added new and powerful steam machinery for the special purpose of... TIMOTHY GREENING & SONS, DUNDAS, ONT.

JAMES WRIGHT & CO. CHURCH, BANK, HOUSE, STORE AND OFFICE FITTINGS.

Art furnishers and inland stores, etc. SEND FOR FULL CATALOGUE. 117 HERBINE ST., MONTREAL.

—Lord Kimberley has done his chief... Mr. Gladstone, no good by his singular order that no official papers are to be forwarded to him between midnight and 8 in the morning. The reason of this is that the intelligence as to the reverse of the Bull's troops on the Mafaba Mountain arrived at the Colonial Office at night and was forthwith despatched to Lord Kimberley. The Conservatives are actively contrasting this cool indifference to the public interest with the conduct of Lord Beaconsfield's War Minister, Colonel Stanley, who in similar circumstances, after the landula massacre, spent the whole night with the War Department officials in concerting measures for retreating the disaster.

—M. Simonin, a French mining engineer, calculates that in from 800 to 1,000 years all the coal in the world will be exhausted, and by that time he thinks we shall have sufficiently improved on M. Mouchot's solar engine as to use the direct heat of the sun, instead of utilizing its stored up force in the shape of coal. At present Kona-lu produces nearly one-half of the coal consumed throughout the civilized world, but America possesses enough to last for 1,000 years, and China, which is practically unworked, possesses enough to last another thousand years. The rate of consumption will no doubt increase, but no one knows how much there really is in China, and it is only recently that the first attempt to work the mines of that country was made.

POSTAL TIME-TABLES. POST OFFICE, MONTREAL.

Table with columns: DELIVERY, MAILS, CLOSING. Lists various mail routes and times for Montreal.

LOCAL MAILS. Beauharois Route, Boucherville, Centre-ville, etc. UNITED STATES. Boston and New England States, except Maine.

GREAT BRITAIN, ETC.

By Canadian Line (Friday), By Canadian Line (Supplementary - Saturday), By Cassin Line, Germany (day), By Cassin (Monday), By Hamburg American Packet to Germany (Wednesday).

WEST INDIES.

Letters, etc., prepared in New York where mails are despatched. For Havana and West Indies, via Havana, every Thursday p.m.

CASTORINE OIL MACHINE.

CASTORINE OIL MACHINE. NONE OF THESE UNLESS BRANDED. THOMAS WILSON, DUNDAS, ONT.

THOMAS WILSON, DUNDAS, ONT. MANUFACTURER OF STATIONARY AND PORTABLE STEAM ENGINES.

BOILERS AND MACHINERY of every description. COTTON MILL CALENDERS, HOSE-IRY, STEAM PRESSES AND PROPELLER WHEELS, ALL SIZES.

RAILWAY TIME-TABLES. Canada Central Railway.

CHANGE OF TIME. On and after MONDAY, 24th JUNE, 1880, trains will run as follows: Montreal to Ottawa, Ottawa to Montreal, etc.

ST. LAWRENCE & OTTAWA RAILWAY.

On and after THURSDAY, 10th JUNE, 1880, trains will run as follows: For the East, West, South and North-East, etc. ARRIVING IN OTTAWA, etc.

Q. M. O. & O. RAILWAY.

CHANGE OF TIME. COMMENCING on Wednesday, June 23rd, 1880, trains will run as follows:

Table with columns: Mixed, Mail, Express. Lists train schedules and times for Q.M.O. & O. Railway.

Local trains between Hull and Aylmer. Trains leave Mill End Station seven minutes later. Maudslough Palace cars on all passenger trains and elegant sleeping cars on night trains.

GENERAL OFFICE, 15 Place d'Armes Square. TICKET OFFICE, 15 Place d'Armes and 203 St. James St., Montreal, and opposite the St. Louis Hotel, Quebec. L. A. BERNARD, General Superintendent.

INTERCOLONIAL RAILWAY.

SUMMER ARRANGEMENTS, commencing 15th June, 1880. Through Express Passenger Trains run daily (except Sunday) as follows: Leave Point Levis, etc. This train connects at Chaudiere Falls with Grand Trunk train for 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 train leaving Halifax at 6 p.m. and St. John at 10:20 p.m., and which reach Montreal at 6:30 a.m. by connecting at Chaudiere Falls with the Grand Trunk train at 6:30 p.m., remain at Campbellton over Sunday. For information in regard to passenger fares, tickets, rates of freight, train arrangements, etc., apply to CAPT. MACQUAIG, Sparks St., Ottawa. D. POTTINGER, Chief Superintendent.

THE MONEY MARKET.

TORONTO STOCK REPORT.

Table with columns: BANKS, Capital sub-scribed, Capital paid up, Rest, Dividend last 6 months, Closing Prices April 6. Includes entries for Canadian Bank of Commerce, Dominion Bank, etc.

Table with columns: DEBENTURES, &c, INTEREST PAYABLE, WERE PAYABLE. Includes entries for Dominion Gov't stock, 5 per cent, etc.

MONTRÉAL STOCK REPORT.

Table with columns: NAME, Capital sub-scribed, Capital paid up, Rest, Dividend last 6 months, Closing Prices April 6. Includes entries for British North America, Canadian Bank of Commerce, etc.

THE GREATEST CITY IN THE WORLD.

London is the greatest city the world ever saw. It is the heart of the British Empire and the world. It covers within the 15 miles radius of Charing Cross nearly 700 square miles.

SCALES CANADA SCALE WORKS.

Manufacturers of all kinds of standard scales. Factory, 102 Adelaide St. East.

SPICES, ETC.

R. D. VAN DE CARR & SON, Toronto. Manufacturers and importers of coffee, spices, cream tartar, mustard, etc.

STEREOTYPES, ENGRAVERS, ETC.

F. DIVER & CO., Toronto. Electrotypers and stereotypers. Designers and engravers on wood.

STOVES.

WM. CLENDINNING, Montreal. Stoves, ranges, furnaces, railway and machinery castings.

TELEPHONES.

HOLT TELEPHONE CO., Toronto. Telephones sold outright \$5 to \$20 per pair; wire 5c. to 1c. per rod; works two miles.

TRIERS.

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

WIRE WORKS.

D. GREENING & CO., Hamilton, Ont. Manufacturers of wire rope, cloth and general wire workers.

WOODEN GOODS.

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

WOOLLEN MANUFACTURERS.

J. ROUTH & CO., Cobourg. Woollen Manufacturers.

WOOLS AND COTTON WARPS.

WINANS & CO., Toronto. Dealers in wools and cotton warps.

PETROLEUM.

THE BRITISH MARKETS.

ARTHUR BROWN & CO.'S PETROLEUM REPORT. London, March 21st, 1881.

Refined oil for the New York city trade, in lots of 50,000 barrels, 100° flash-test by the Tagliabue pyrometer, 10c.

Refined oil of 150° burning test, 13c. to 17c., 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.

PETROLEUM PRODUCTS.

Lubricating oil \$2.00 @ \$3.00 per bbl. Tar 0.75 @ 0.80 per gallon.

COAL OIL.

Stock this day 7,300 bbl. Loaded last week 10,103 bbl. Delivered last week 10,876 bbl.

THE CANADIAN MARKET.

(Petroleum Advertiser.) The price of crude during the past week has risen to \$1.80 in tank.

The demand was exceedingly active. The producers are confident that they will be able to command good prices for some time to come, and hold on to their product with great tenacity.

A number of wells have been finished during the past week. The most important strike made was a 10 barrel well by Mr. McDougall on lot 3, con. 13, which it is supposed has tapped the celebrated Pearson well.

THE MONEY MARKET.

The following are the market quotations from the different oil centres.

CRUDE OIL MARKET.

The market here for crude oil by the car load, is from \$1.75 to \$1.80 per barrel. This price has been paid this week for the crude oil certificates of the Petrolia Crude Oil and Tanking Company, this being the speculative pipe line, and the price at which these certificates can be bought from producers regulates the market.

The price of American crude oil in the various producing districts of Oil City, Parker, Titusville and Bradford, by the latest quotations, is 8c to 8 1/2c per barrel in tanks at the wells for United Pipe Line crude oil certificates—to this price has to be added the pipe 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 raise and get money advanced on it.

REFINED OIL MARKET.

Petrolia, (Ont.) \$2.20 per gal. @ 60 days. London 0.21 " " " " Toronto 0.21 " " " " Ottawa 0.21 " " " " Quebec 0.21 " " " " Halifax and St. Johns 0.21 " " " "

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 1c. to 2c. above these figures.

The latest refined oil quotations in New York market are as follows—Cargo lots for export, 110° burning test by the Savbold tester, 8 1/2c.

Refined oil for the New York city trade, in lots of 50,000 barrels, 100° flash-test by the Tagliabue pyrometer, 10c.

Refined oil of 150° burning test, 13c. to 17c., 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, 12c. to 13c., according to brand.

USE OF LARD IN THE MANUFACTURE OF CHEESE.

The following statements with regard to the use of lard in cheese making were made recently at Albany, N.Y., by Assemblyman Craspe, of St. Lawrence county, before the assembly committee on public health: The main elements in cheese manufactured from milk are casein and fat. Rennet is used to coagulate. It is necessary to add oil if a richer cheese is wanted. We have never been able to do it in this country until recently. Lard is now substituted in place of cream or butter oil. To 100 pounds of milk we add 1 1/2 pounds of lard, and have to do it in Chicago or elsewhere, and it has to be deodorized by heat in the usual way. Steam rendered lard is better than kettle rendered. By the new process it requires six to eight hours to render it. One would get 4 pounds of cream from 100 pounds of milk, and this 4 pounds is one-third casein, so that about 2 pounds out of 100 is real oil. Therefore, 100 pounds of skim milk and 1 1/2 pounds of lard will make 100 pounds of cheese. It makes a good quality of cheese. We have been able to sell all the cheese out of skim milk and so benefit farmers. This new cheese is made from sweet milk, from which cream has been removed at 40 degrees Fahrenheit, after standing twelve hours. No chemicals are used in this process, except some colouring matter, which we make. I have twenty-one factories, and have put them to making lard cheese as fast as possible. We have to work on the sly, but the honest farmer would not take any advantage. We get along with them by paying more for their milk than it is worth. Seven of my factories are now making the lard cheese, which goes to Chicago, Boston, New York, and Baltimore. The fact that it was made of lard sold the goods. The cheese factories in St. Lawrence use chemicals. I skinned mine so close for butter that it could not make saleable cheese. This kind of cheese we can sell to the middle classes, but not to the millionaires. Lard can be treated by difference of temperature and not be injured like butter. To deodorize the lard we blow hot steam through it. We manufactured twenty-five hundred boxes of sixty pounds each last year.

The annual Easter fat cat's show at Ouelph was held yesterday, under the auspices of the recently organized Fat Stock Association. It proved a great success.

DOMINION TRADE REGISTER

INDUSTRIAL DIRECTORY.

AGRICULTURAL IMPLEMENTS.

A. S. WHITING MANUFACTURING CO., Cedar Dale, Ont.—Manufacturers of scythes, forks, hoes, etc.

ANILINE DYES.

I. M. THORNTON & CO., Montreal—Agents for K. Geibler, Offenbach O. M., Germany.

BRASS WORKS.

H. N. TARR & CO., Montreal—Brass finishers and founders, beer pump manufacturers.

COTTON BROKERS.

M. WRIGHT, Dundas, Ont.—Sole agent in Canada for Orley & McFaire, cotton factors, Nashville, Tenn.

COTTON MILLS.

DUNDAS COTTON MILLS CO., Dundas, Ont.—They domestics, denim, tickings, yarns, etc.

HAMILTON COTTON MILLS CO., Hamilton.

Denims, tickings and yarns.

JOHN MACKAY, Dundas, Ont.—Manufacturer of every description of cotton warp and yarn.

EDGE TOOLS.

H. T. WILSON, Dundas, Ont.—Manufacturer of axes, picks, mattocks, grub hoes and rail way contractors' supplies.

ENGINES AND BOILERS.

O. C. MORRISON, Hamilton, Ont.—Engine, boiler, steam hammer, etc.

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

FILES.

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

MILK & SPRING CO., Cote St. Paul, Montreal.

All kinds of files and springs. Files recut. Sole manufacturers of Shaulding's patent concealed spring.

OUTRAM & SON, Dominion File Works, Montreal.

Manufacturers of every description of files and rasps.

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

FURNITURE.

OSHAWA CABINET CO., Oshawa, Ont.—Furniture Manufacturers, Toronto branch, 97 Young St.; Montreal branch, 47 and 49 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 WHITING & CO., 11 to 17 Hermine St., Montreal.

Church bank, house, store and office fittings, art furniture and inland doors, etc.

GLASSWARE.

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

GLOVE MANUFACTURERS.

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

HAMMERS.

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

MIDS, SPOKES AND BENT GOODS.

J. W. HORE & SON, Hamilton, Ont.—Manufacturers of hubs, spokes, rims, shafts, poles, cleats and cutter staves, etc.

INKS.

F. F. DALLEY & CO., Hamilton, Ont.—Manufacturers of inks, blackings, harness oils, perianths, 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., 87 St. Peter St., Montreal.

Manufacturers of every description of bolts, nuts, bridge, boiler and iron rivets. Works at Toronto.

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.

McKEON & BERTHAM, Dundas.

Machine tools and wood working machinery.

THE OSHAWA MALLEABLE IRON CO., Oshawa, Ont.

Manufacturers of malleable iron; also patent screw wrenches.

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 cutters, etc.

KNITTING MILLS.

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

LASTS, DIES, ETC.

CHAS. CHILDS, Montreal.—Manufacturer of boot and shoe lasts, dies for outfit 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.

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

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

DOMINION ORGAN & PIANO CO., Howanville, Ont.

Manufacturers of pianos and Cabinet Organs. See advertisements in another column.

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

PAPER MANUFACTURERS.

CANADA PAPER CO. (Limited), 271, 272 & 273 St. Paul St., Montreal.—Manufacturers and importers of all kinds of papers, Mills at Windsor, Sherbrooke and Portneuf.

DOMINION PAPER CO., 87 St. Peter St., Montreal.

Manufacturers of manilla, book and news print, cardboard journals and coloured papers.

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

W. C. BARRER & BROS., Georgetown.—Manufacturers of book and fine papers.

SAW MANUFACTURERS.

H. H. SMITH & CO., St. Catharines.—Manufacturers of all kinds of saws, planing try, do. Saw knives, etc. Sole manufacturers for the Dominion of Canada of the celebrated "Diamond" saw.

SHURLY & BIRNICH, Galt, Ont.—Manufacturers of circular and cross-cut saws, planing try, etc.

THE DRY GOODS TRADE.

NEW YORK ADVICE.

(United States Economist)

The month of March, contrary to the old weather, came in a July. Continued more or less disagreeable through-out, with a heavy snow and rain in the West and North-West, in various sections of the country, both east and west of the Mississippi. Just as we had been congratulating ourselves that the general condition of spring had come to abide with us, and that the long and severe winter was about taking its final departure, there came another of the "severest snow storms" of the season, and floods in the West and North-West, in conjunction with cold winds and heavy rains and high water in the South and along the Atlantic seaboard, as well as in some of the Middle States, also, which have not only held general business in check, but have proved very distressing in the destruction of property. These certainly are not the most encouraging and inspiring signs of the opening of the second month of spring, and do not add much to the feeling of hopefulness which has been kept up through the most trying period of a long, severe and cold winter. Considering the untoward and wide spread effects which the operation of these physical causes have had upon the general business of the country, it is the less surprising that market for many kinds and classes of merchandise and other commodities is in a favourable condition as it is at the present time. The very fact that we have been able to bridge over so safely this long period of comparative quietude and low-tide, demonstrates of itself the generally sound, healthful and prosperous condition of the country, and indicates that a very conservative policy has been pursued on the part of manufacturers with regard to the production of goods, as supplies of the same everywhere, aside from slight accumulations in some lines, are generally in more satisfactory shape than we could have expected them to be under the circumstances. Another thing too, manufacturers' prices on both cottons and woollens all along have been fairly market-led by agents until within a very recent period, when they have succumbed to such adjustments as were necessitated more by the precipitate actions of jobbers and converters than through any particular fear of an undue excess of supplies of goods. However, while the disadvantages of a late season are manifold, there is yet a great deal of compensation to be found in their operations. In the fact that speculative and inflated values of commodities have been rendered impossible, and that the trade of the country has been confined not only to strictly legitimate channels, but has been restricted to the causes stated to the extent of supplying largely actual needs. The effect of this, though probably bearing temporary mischance and hardship to some of the larger manufacturing concerns and business men, has generally been wholesome upon the country, as it has enforced the practice of more or less economy on part of the masses, and made the retailers pursue a very conservative policy with regard to the purchase of supplies. Had the winter been short or the weather been more favourable, there is but little doubt but what the country would have been visited with an era of more or less speculation, as our immense crops of cereals, enlarging exports, and unexampled activity of manufacturing, mining, railway and other industries, as well as the steady remunerative employment of the masses, and large influx of immigration, together with money being easy and plentiful, all were tending to produce this state of affairs, and to offer capitalists quick and remunerative investments in channels highly speculative and unhealthful in character and kind. This was manifest in the moated centres of the country in stock and other operations of the most questionable sort, and which directly and indirectly were leading to the increased importation of foreign and the enlarged production of domestic goods. Happily all these tendencies have been more or less modified through the direct interposition or operation of physical causes, and the country, irrespective of the snow and rain storms and the disasters which it is suffering through flood and fall, is in an unusually sound and healthful condition. Commission merchants, jobbers and converters hold the stocks, and with but few exceptions to the contrary, not in any too large quantities, either, as will be demonstrated as the wants of the people become more fully known, and the channels of supply, or rather the facilities for the transportation of the same, become freer and more enlarged. The retail merchants in almost every section of the Union are more than ordinarily bare of goods, and as the weather improves and the routes of traffic and distribution become freer, their demand for spring and summer supplies is steadily enlarging, as is witnessed by the improving piece disposition of goods taking place at the heads of the jobbing trade of this and other leading cities of the country. The market for cotton goods being more or less unsettled, the feeling prevalent among both commission merchants and jobbers is not quite so satisfactory as it might otherwise be had the spring trade been so long deferred. As it is, agents' prices on the low and medium qualities of browns and bleached cottons in a few instances are more or less irregular in quotations. With jobbers they cut the "oil" in almost everything in

the regular cotton goods line, and are sometimes placed on such a low scale that they net a direct loss to the seller. While competition is usually termed the "life of trade," it has this season, in some cases, a little different and fuller significance not only to the piece goods houses of this city, but to those elsewhere as well, in the fact that it means "death to profits," especially in regular staple cottons. If one were to thoroughly investigate the condition of the jobbing trade of the country, giving due appreciation to the natural causes which have made it a month more backward than usual, it would probably be found that the "cutting and slashing" in jobbers' prices of goods which are adapted to the wants of the people for the spring and summer seasons have not in any great extent distributed supplies in advance of actual requirements, for the simple reason that when the channels of trade are blocked from natural or physical causes, and the traffic on the highways, railways and water courses of the country is rendered very difficult and expensive, or for the time being impeded, low prices do not move the goods any faster in healthful or legitimate ways, but rather tend to further retard their sale, except for speculative purposes, by weakening or dissipating the little confidence which still obtains. As a rule more buyers are found on a steady, firm market, where fair values are maintained on goods, than vice versa. There has been a moderate assorting up in prints of all kinds with the agents, but the distribution in the aggregate has been light. Package buyers show no disposition to take hold of any important lots. The inquiry is mostly for the best work and latest novelties in light and medium ground effects in fancies. There are no very large stocks in first hands, while in many cases they have kept closely sold up on the production, and have now either stopped running or are turning out only a few styles to keep represented in the market. The best styles of prints are held at steady prices, but a few lots that were not quite up to present ideas of style have been closed out by the agents to some leading jobbers, and are being offered to the trade at low prices, and have met with a wide distribution. The production of prints is being greatly reduced, but a few of the most taking styles, with now and then a specialty, are being offered by the agents, but these are taken in small lots to add to jobbers' present assortments. But the general movement is irregular with the agents, and in the aggregate less satisfactory this week than last. The jobbing houses are doing a fair business in piece distribution, and some are offering special drives that have attracted buyers' attention for a short time, but the general movement has been less satisfactory in piece selections this week than last. This, however, may be chiefly owing to the very unfavourable weather that has prevailed in this as well as many other parts of the country. There are a good many general retail dealers in the market, and they are making fair assortment selections, but selections are in most cases limited to the more immediate wants. There is, however, a fair business in the way of mail orders from all parts of the interior. There has been no material change in agents' prices within the past week. In some few instances slightly increased discounts have been conceded to jobbers, and the agents for sprague prints reduced the prices on shirtings to 5 1/2c, while all the best styles of fancies and staples are still held at unchanged prices. Good dark prints continue in fair demand at the same prices as for new light work. The market for spot cotton during the earlier part of the week ruled rather quiet, when a decline of 1-16c in quotation took place, which led to an improved export inquiry. Transactions for domestic spinning purposes, however, in the main were rather light. On Thursday prices were revised as follows: Ordinary and strict ordinary reduced 1/2c; and stained good ordinary and strict good ordinary 3/4c; and low middling 1-16c. The sales for spot for the week embraced 2,308 bales, of which 5,954 were for export, and 3,314 for home spinning purposes. The transactions in future deliveries for the same time comprised 526,308 bales. The receipts at the principal United States ports for the week amount to 77,962 bales, and since September 1st aggregate 5,064,017 bales, against 4,938,594 bales for the same time last year. The market shows quiet and steady for good ordinary at 8 1/2c; low middling at 9 1/2-10c; and middling at 10 1/2-11c. Sales for future delivery rate inactive, though quiet and steady, at an advance of 1 to 4 points. The stock on hand in New York is 213,543 bales, and the consolidated stock 807,881 bales. The following are the closing quotations for spot cotton: NEW YORK CLASSIFICATION.

1-16c. The Manchester market for yarns and staples closes dull, with a downward tendency to prices. The market for men's wear woollens has been characterized by more or less quietude in fact, although in some lines of new fall weight fabrics a fair degree of improvement has been noted in the placement of orders for future delivery. A better adjustment in the selling values of a number of prominent makes of medium grade goods has taken place, and buyers and commission merchants now appear to be in better accord as regards prices. On the average rates are probably now about 15 to 20 per cent lower than they were this time last year. The offerings for the fall season are now generally fairly complete and represent a wide range of low and medium grade fabrics, which embrace unusually neat and effective styles. While, as a matter of course, the woollen goods trade with agents has lacked that snap essential to an active business, it has nevertheless gradually been getting down to a sounder basis, as the late adjustments in selling values indicate, thus bringing seller and buyer more in accord with each other, which ere long must lead to a much wider and more active distribution of fall styles. As it is, the agents of some leading makes of the same, who opened at fair prices, have already the larger portion of their season's product placed. These as a rule have satisfactorily met the views of large buyers in the matter of quality, style and price. Some others who probably placed a little too high figures on their goods on the opening are also beginning to wheel in line, and are making a more favourable adjustment in the same. As this as a natural consequence made buyers hesitate somewhat in the placement of large orders, as they desired to see a better or fuller development of the situation before taking much action. However, in the middle and latter portions of the week a much better and more confident feeling was evinced on the part of the latter, and a slightly improved business was the result. Continued fine weather and a week or two of reasonably fair trade will doubtless place the market in a satisfactory condition. In spring weight fabrics the regular request from agents has ruled comparatively light, and prices are generally lower in tone, in consequence of large and irregular transactions in odd styles and inferior qualities at liberal concessions in prices having taken place. These are now being pretty well cleared up, and we would not be surprised that before the close of April desirable spring goods would be scarce, and command much better prices than are ruling to-day for them, as on everything really good agents seem to be very closely sold up. With the cloth and general dry goods jobbers the piece trade in spring weights has been of good proportions. The Wool Trade. In our last weekly review we observed that the panic in the wool market for choice wools had subsided, and that the downward incline of prices had been arrested for the time being, but that there was hardly any sale for heavy and heavy shrunken wools, and that prices for these were altogether nominal, being quite unsettled and irregular. No matter what opinions may be entertained among the trade in general, the truth of all these remarks still remains in full force. The quantity of desirable stock pressing upon the market, regardless of all considerations, has of course become reduced to the extent of the late panicky sales, and as a consequence it has become less easy to obtain selections at the very low prices which have been made the basis of recent operations; but notwithstanding all this there is plenty of stock still available, seeking for buyers at low enough prices to suit the most advanced views of bearish operators. It is very true that many holders of wool who had comparatively dear stock on hand, and were then and now fully able to carry the same in anticipation of realizing a fair profit on early investments, still cling more or less tenaciously to their views and refuse to "slaughter" their stock by giving it away at 10 and 25 per cent below what it costs, thus holding to their opinion that prices in the markets or the sea-board now are far below the relative value of what farmers and country dealers will be willing to accept for new wools, and consequently that when the present panic in wool and woollens spends its force buyers will be obliged to turn their backs on the country and return to the great markets on the Atlantic seaboard to replenish their assortments. They also point to the markets abroad and to the closing firmness manifested at the close of the London Colonial wool sales, which closed on the 26th ult. —There are about twenty-two vessels owned in Port Credit, all of which are ready for the opening of navigation. Prospects for the spring trade have not been better for years. —The question of right of the Local Legislature to impose statutory conditions on insurance companies, which came up in Osgoode Hall on Tuesday, in the case of Edwards vs. the Ontario Insurance Company, has been appealed in several cases to the Supreme Court at Ottawa, it being contended on behalf of the companies that a contract of insurance falls under the head of trade and commerce, and as such is ultra vires of the Ontario Legislature. The Supreme Court not taking this view of the case, the question will come before the Privy Council in England during the coming summer. Mr. James Bellanca has been retained as counsel, and will proceed to England in July next.

MR BRADLAUGH'S CASE. Present appearances indicate that Mr BRADLAUGH, if he be desirous of remaining in Parliament, and he appears to be, will have to run the risk of another election contest. It will be remembered that among those returned to the House of Commons at the general election a year ago, to the Radical interest was Mr. BRADLAUGH, whom the people of Northampton honoured by electing him as their representative in association with the celebrated literary free-lance, Mr. LAWSON, also a Radical. The law of the land requires that every member of the House of Commons shall take an oath of allegiance to the sovereign. Mr. BRADLAUGH is a blatant disavower of a belief in a God. In whatever way the arrangement and development of the universe came about—whether by mere chance or on some other equally absurd hypothesis—it is the belief of Mr. BRADLAUGH that the work of creation was not that of a supreme, omnipotent and omniscient creator. Consequently, when, on the 3rd of May last year, he presented himself at the table of the House of Commons to sign the roll, he positively declined to take the oath, because, he represented, he could not swear by a God in whom he did not believe. It is understood that Mr. BRADLAUGH is strongly Republican in sentiment; but this fact did not prove an insuperable barrier to his willingness to make an affirmation to support non-architectural institutions. The Clerk of the House declined to allow him to affirm, he having no power to do so. Mr. BRADLAUGH was permitted to submit his case to the Evidence Acts of 1869 and 1870 would permit of his affirming in the House, he, since they went into operation, having frequently affirmed, instead of taking an oath, in the highest courts of the realm. The Speaker left the case in the hands of the House, and the result was the appointment of a select committee to decide whether persons in Mr. BRADLAUGH'S position might, under the Acts named, be permitted to affirm in the House. On the 20th of May the committee reported adversely. Meanwhile an agitation on the subject was developed in different parts of the country; and the question, Shall an avowed Atheist sit and vote in Parliament? was discussed on many platforms. Seeing no way of escape, Mr. BRADLAUGH again presented himself at the table of the House and expressed his readiness to take the oath, if an affirmation were refused. The act was almost committed, when Sir H. Drummond Wolff played a sharp little game, by moving that Mr. BRADLAUGH "ought not to be allowed to take the oath which he then required to be administered to him, in consequence of his having previously claimed to make affirmation or declaration instead of an oath." An amendment to the effect that the matter be again referred to a committee which should inquire and report as to the right and jurisdiction of the House to refuse to allow the form of the oath to be administered, was carried. On the 16th of June the committee reported. The opinion was expressed that Mr. BRADLAUGH should be relieved from "going through the form" of the oath, but it was recommended that if he presented himself for the purpose of swearing he should not be prevented from doing so. On the 21st of June Mr. LAWSON moved that his colleague in the representation of Nottingham be allowed to affirm. Sir HENRY GIFFARD'S motion that, having regard to the committee's reports, he be not allowed either to swear or affirm, was carried by a vote of 275 to 240. Two days later Mr. BRADLAUGH entered the House and proceeded to the table for the purpose of being sworn in. But Mr. Speaker, announcing the decision of the House, asked him to withdraw. Requesting to be heard in support of his claim, the privilege was accorded, and in a calm and temperate speech Mr. BRADLAUGH reviewed the situation. A motion to rescind the resolution of Sir HENRY GIFFARD was lost, when Mr. BRADLAUGH was informed of the decision and was requested to withdraw. This he refused to do. A second followed, which resulted in Mr. BRADLAUGH'S arrest. He was not kept long in confinement, however, being released the following day. For the purpose of relieving Mr. BRADLAUGH from the embarrassing position in which he was placed, Mr. GIFFARD moved this resolution: "That any person returned as a member of this House who may claim to be a person for the time being by law permitted to make a solemn declaration or affirmation instead of taking an oath, shall thereupon (notwithstanding so much of the resolution adopted by the House on the 22nd day of June last as relates to affirmation) be permitted, without question, to make and subscribe a solemn affirmation in the form prescribed by the Parliamentary Oaths Act, 1866, as altered by 'The Parliamentary Oaths Act, 1868,' subject to any liability by statute." The resolution was carried, and on the next day Mr. BRADLAUGH affirmed and received the usual recognition accorded to members of the House by the Speaker. Under an Act imposing a penalty upon persons for sitting and voting in the House of Commons without first having taken the oath, legal proceedings were commenced by a Mr. CLARK. The case was entered in the Queen's Bench Division of the High Court of Justice. In his defence Mr. BRADLAUGH contended that he was a person on whose conscience an oath would not be

binding, and that he was entitled to make a solemn affirmation or declaration as prescribed by law for such witnesses in a court of justice. The plaintiff argued, in reply to the statement that Mr. BRADLAUGH had made an affirmation, that the defendant was a person who by want of religious belief was not entitled to make and subscribe a solemn affirmation. It was held, on behalf of Mr. BRADLAUGH, that the statute did not require that a person making an affirmation should make or profess any religious belief. The result was that Justice MARYEW, before whom the case was heard, decided against Mr. BRADLAUGH. The case was then taken to the Court of Appeal, which, on Thursday last, upheld the decision of the Queen's Bench. It is now said that Mr. BRADLAUGH will carry the case to the House of Lords. We have no doubt the final result will be a new election, when the peculiarity of the case will to some extent make Mr. BRADLAUGH'S Atheism a test question at the polls. —The Nashville Legislature has passed an act providing that any sheriff who permits a prisoner to be taken from custody and lynched, shall lose his office. —The inland revenue receipts of Montreal for March were \$37,410, an increase of \$14,286 over the corresponding month of 1880. The customs receipts were \$500,097, an increase over same month of last year of \$24,104. The increase for the quarter was \$728,597. —In the Commons, London, Eng., Monday afternoon, Northcote, amid loud cheers, intimated that Hicks-Beach intended giving notice of a motion on the Transvaal question, but desired to know first if any more information was available. No positive information could be given. —A St. Petersburg despatch says the elections for members of temporary council, to assist the commandant at St. Petersburg, provided for in the ukase issued yesterday, have terminated to-day. Other cities desiring the same elective municipal institutions will be granted them by the Government. —A despatch says four leading directors of the North Western Railway and one of the company's managers will start at an early date for the United States, where they intend to thoroughly inspect the working of American railways, with a view of an introduction into England of some of the features in which the American railways surpass the British. The deputation will travel over all the trunk lines, commencing at New York and concluding at San Francisco. —At the shareholders meeting of the Canadian Pacific Railway Company held in London, on the 21st March, all the necessary financial arrangements for a vigorous prosecution of the work were completed, and the construction of the main line is to be pushed on both the eastern and western sections as rapidly as possible. The 250 miles of railway west of Winnipeg is expected to be in operation by the end of the present year. The Company also resolved to build a branch line from a point near the eastern terminus to Saint Ste. Marie, and another branch from the Western Trunk line beyond Red River southeast in the direction of the coal fields and international boundary. Provisional agreement for the acquisition of the Canada Central Railway Company is also concluded. —In the House of Lords on Thursday night Lord Cairns, ex-Lord Chancellor, made a powerful attack on the Government's Transvaal policy. He alluded to the announcement in the Queen's speech that the authority of the Crown would be promptly vindicated in the Transvaal. He entertained grave doubts that in surrendering the territory, the honour of the Crown had not been stained. He emphatically protested against handing a hundred thousand British subjects back to a bad system of slavery as it existed in the world. He argued that they had no security that the Boers would accept the decisions of the Commission. He concluded by a general denunciation of the terms of peace in a peroration of striking eloquence which elicited an outburst cheering. Lord Kimberly replied. —Divorce has become a steadily increasing feature in Continental countries of late years. Statistics recently presented to the Societe d'Economie Politique of France showed that in the four years between 1840 and 1844, inclusive, the divorced in Holland had been one for every 82,605 inhabitants; in Belgium, one for every 198,583; and in France, one for every 47,332. Comparing these proportions after an interval of thirty-three years, we find that the figures are: in Holland, one for every 35,449 inhabitants; in Belgium, one for every 15,610. The formula of proceeding in France is classed under the head of "separation," but is practically divorce. —The following is a translation of a letter which has been addressed to the various gentlemen holding diplomas under the Provincial Board as land surveyors for the Province of Lower Canada:—"Sir,—I have the honor to inform you that a meeting of the surveyors of the Province of Quebec, at which you are invited to be present, will take place at Quebec on the 7th of April inst., in the Parliament House, with a view of considering the advisability of asking for an act of incorporation, at the next session of the Legislature. In case you are prevented from attending this meeting, you might communicate whatever opinions, suggestions and objections you may have relating to this subject, and authorize somebody to act in your stead. A committee, organized at Quebec with this object in view, will meet daily to prepare this bill, and all correspondence can be addressed to it. By order of the Provincial Committee, C. E. GARVIN, A.P., Sec., Quebec."

FRANCE AND CANADA

France is certainly interested in the welfare of a million and a half of her descendants who reside in Canada...

Mr. J. A. Perreault, of this city. As is well known, that gentleman left Canada last fall for a voyage to Europe...

THE AGRICULTURISTS' UNION.

Guelph, March 30th.—The second annual convention of the Ontario Agricultural and Experimental Union was opened in the Agricultural College Buildings here to-day.

following result: Honorary President, Professor Brown; President, L. T. T. Vice-President, C. S. Dickinson...

THE GREAT BROKERS' TRADES UNION.

A seat in the New York Stock Exchange sells for over \$30,000. During June of 1880 the price was \$18,000.

in the San Francisco boards has fallen very greatly. But, say our readers, what interest has the country in the price of seats in the New York Stock Exchange?

FAILURES.

Reports of failures throughout the United States and Canada, received during the past week, give a total of 112, the smallest number for any week during the past two months.

INTERPROVINCIAL TRADE.

We gladly extract from a contemporary the following very interesting and satisfactory piece of information: "One Ontario firm paid \$28,000 in freight charges last year on importations of agricultural implements from Ontario to Manitoba, and there are many other firms doing a large trade in the same business."

THE GEORGIAN BAY CANAL.

The Toronto Telegram says: On the invitation of Mr. F. C. Capreol, Hon. Mr. Mowat and a few other citizens visited the office of the former gentleman to have the principles of the hydraulic lift lock and other matters connected with the proposed Georgian Bay Canal explained to them.

lift lock—with strict economy of construction and working. Resolved that this meeting approve of the immediate construction of the canal, and respectfully advise that the Ontario Government appoint a delegation, consisting of the hon. Mr. Mowat and others, to wait upon the Government of the Dominion and consult as to the best means of securing—with the least possible delay—the construction of so important an undertaking.—Carried. After thanking Mr. Mowat for his attendance the company withdrew.

FRENCH CANADIANS ABROAD.

Mr. John J. Daley, Dominion Government Immigration Agent, has, as our readers are aware, been in the Eastern States, trying to induce French Canadians and others there to go to our North-West and take up farms.

BEACONSFIELD VINEYARDS.

Mr. George F. Gallagher, of the firm of Gallagher & Gauthier, the proprietors of the famous Beaconsfield vineyards, is in the city. Taking advantage of his presence a representative of THE PRESS paid him a visit and after a brief interview learned from him the following particulars relative to his business:— Q. Where and how are the Beaconsfield vineyards situated? A. At Beaconsfield Station—which is in the centre of the vineyards—on the Grand Trunk Railway, sixteen miles west of Montreal.

dear atmosphere is a great advantage, especially for grape culture, and the extreme heat in summer causes vegetation to grow rapidly and matures fruit in a short season, which gives the fruit a better flavour and which gives the same varieties as are more prolific than the same varieties grown in Western Ontario or the States south of Vermont. We observe that the late frosts are so destructive to the late-ripening fruit culture, such as in Missouri and other Southern and Middle States. After vegetation starts here it is very seldom injured by frost. The phylloxera which is so destructive to vineyards in France and California, does not exist here, as the cold winters of lower Canada are a sure preventive.

Q What are the disadvantages of growing grapes here?  
A There are few enemies to the culture in Quebec than any of the great grape districts that I am familiar with. The principal disadvantage is that the public do not understand that grapes and small fruits can be grown here on a large scale in this country, as the seasons are so short, the varieties that will grow here are limited, and it is therefore necessary to select the earliest varieties, which are equal in flavour and quality to any produced in the United States. It is also true that the public have not studied the correct mode of cultivating these fruits, which is fully explained in our illustrated catalogue. I am satisfied that this will be one of the principal industries of the future in Lower Canada.—Ottawa Citizen.

THE IMPERIAL BUDGET.

London, 4th.—Gladstone said the expenditure last year was £83,810,000, or £11,000 less than the estimate. Surplus revenue over expenditure was £933,000. The time had now arrived, he said, for proposing the conversion of short annuities into longer annuities. He proposed to pay off £60,000,000 in 25 years. He estimated the expenditure for the year just commenced at £84,708,000, and the revenue at £84,990,000, which would leave a surplus of £1,282,000. He proposed to take a penny off the income tax and apply a small sum to the construction of barracks. These measures, he said, will consume the whole surplus and leave a deficit of £275. The extra penny of income tax which is to be remitted, produced last year about £1,000,000. Gladstone proposed usually to reduce the duty on silver plate by 3d. per ounce until the whole duty of 18s. disappears (this duty has been considered a great grievance by silver-plate makers), and to replace variable duty on the different kinds of foreign spirits, by one of 4s. on each gallon of standard spirits of all kinds. He expects this will produce an increased revenue of £180,000. He proposed various changes in private legacy and succession duties but nothing of a very sweeping nature. He said the anomalous nature of estimates with this subject could only be straggled with when the law of finance was dealt with. Gladstone concluded by stating the final result of all changes he proposed would be for the year just commenced an estimated surplus of £785,000.

After a short discussion on Gladstone's statement, the resolutions forming the budget of the bill to give effect to the budget proposals were agreed to.

THE IRISH LAND BILL.

London, 6th.—It is expected Gladstone's speech, introducing the Land Bill to the Commons to-morrow, will occupy three hours. It is anticipated the bill will provide, under the head "Sale of Tenures," that every tenancy shall first be offered to the landlord, and the landlord may prohibit the sale of the tenancy where reasonable grounds exist. The question of reasonable grounds may be referred to a land court. Where the landlord proposes to raise the rent to equal a purchase by the tenant the latter may sell and shall be entitled to receive and demand from the landlord recaptulation equal to ten times the amount of the increase demanded. The sale of a tenancy bars a claim to compensation for disturbance and improvements, and a recipient of such compensation has the right of sales. Where the tenant devotes interest to his children or other persons, only one of the devisees shall occupy the tenancy, the object being to prevent subdivision, contrary to the wishes of the landlord. When the tenant accepts an increased rent proposed by the landlord, the tenant may not be disturbed for fifteen years, during which period there shall be no eviction or compulsory increase in rate, except as a consequence of a breach of certain statutory conditions. If the tenant declines the proposed increase he shall, if he sells his holding, be entitled from the landlord to ten times the amount demanded by the increase. Statutory conditions which bind the tenant as above, are for actual payment of rent, a guarantee against subdivision of the tenancy, a prohibition to sublet or divide without written permission from the landlord. The limitation in the Land Act of 1870 of compensation for disturbance to £250 will be replaced by a sliding scale. Where the rent is under £30 the compensation will be seven years' rent; where the rent is under the foregoing amount five years' rent; where the rent is £100 or upwards, not exceeding three years. The Act of 1870 will be further amended to fully protect the tenant's rights for compensation for improvements where the tenant surrenders to a new tenant at the landlord's wish, or takes a different holding. The Act of 1873, relating to compensation for improvements on eviction by title as paramount is amended. What is a fair rate may be decided by the court on application of the landlord and tenant from time to time during the continuance of the tenancy, but the court's decision will have no retrospective effect. When the court has fixed the rent there is

to be no disturbance for fifteen years. These periods of fifteen years security for the tenant occurs frequently in the bill, and is constituted a statutory term, which must expire before a new term can begin or new proceedings be had. The County Court is invested with jurisdiction to meet cases where the landlord and tenant act toward each other. It may punish the tenant by ordering him to pay costs for refusing to accept the terms the court thinks reasonable; it may enable the landlord to resume the holding by ordering the tenant to sell his interest. Where the landlord and tenant agree for a longer tenancy than 15 years, the court will enforce the agreement and protect it as if it were for a statutory term. Where present tenancies are converted into fixed tenancies the rent shall be subject to re-valuation by the court at intervals of not less than 15 years, and the tenant shall not be evicted except upon a breach of statutory conditions. The owner of an estate may exercise rights as though he were the absolute owner, except he may not give fixed tenancy without the sanction of the Court of Appeals, will be from Civil Court to Assizes, and in special cases to Superior Courts. In Dublin parties may arbitrate on agreement. The machinery of the land courts will chiefly lie in the hands of the committee. The second bill amendatory of the act of 1870 relates to the purchasing powers under the British Coal Act.

London, 4th. The Daily News says it is informed that the statements purporting to give an account of the Land Bill are incorrect in several important particulars. They strongly resemble one of the various drafts which was considered by the Cabinet. The News understands a strict inquiry will be made regarding the identity of the person guilty of the breach of confidence by which the document was made public.

A NEW FOOD FISH.

The United States Fish Commissioners last year began their experiment of distributing young carp all over the country for use in bodies of quiet water. The young fish were from ponds near Washington, and were originally brought from Germany. To learn why carp is chosen in preference to some of the more valuable food fish, and to ascertain the distribution of carp for the spring, a San Francisco reporter visited New York State Fish Commissioner Eugene O. Blackford, in Fulton Market.

"The European carp is what we are trying to introduce," he said. "It is the most popular fish in Germany, and carp in beer is a favourite dish in Berlin. Over 500,000 pounds of this fish are sold annually in that city; so, you see, its flesh must be of very fine flavour. Carp grows very rapidly, and are in that way very profitable to the breeder. You know the people away from the seaboard in the Southern States have for their fish only salt codfish, mackerel, and dried herring, and they will gladly welcome the carp."

"Is this fish adapted to Southern water?"

"Yes, it is. But it thrives also—not so well, however—in the Northern and Middle States. It is calculated to supply the wants of Southern people in particular. First, because trout, bass, pickerel, and muskellunge cannot live very far South—it is too warm for them to keep alive in the lot number; and, secondly, because small ponds and small lakes, the natural home of carp, are scattered all through the Southern and South-Western States. Carp delight in still water, and the sportsman can't expect much fun in catching them. They are uncouth catching, and are difficult to take in nets. Yet they are the easiest fish in the world to raise, and the most profitable. They are gregarious and not voracious. Hence they will eat anything that is given to them. Their food is procured at the least possible expense, when it is necessary that food should be given them, which is not always the case. The carp can be fattened on peas, beans, coagulated blood, and curd, and they eat easily sublet on fungus, vegetable matter, and other substances at the bottom of ponds. Food is a small item of expense. It is hardy and grows fast, and is a good fish, if not better, eating than any fish we have."

"When did the carp first come here?"

"The first that we know of them is in the lakes of middle and southern Europe. The scientists as far back as Aristotle's time knew of them, but did not esteem them very highly. They have been introduced here from Europe, and are now very popular."

"What is their appearance?"

"There are two kinds of carp. There are the German carp, the carp proper, called by the Germans 'goldkarpf,' and the leather carp, or 'spege karpf,' also from Bohemia. The carp proper has a sucker mouth, and lives by sucking the olive brown colour above and yellowish beneath. The leather carp is so called because it has only three rows of scales from head to tail. There is not a single scale in our waters, and it is really beautiful when taken fresh from the water, with its broad bronze scales or mirrors flashing in the sunlight. The scale carp or carp proper, has small, thin scales. The leather carp has one row of dark scales along the back, and all the rest of the body is a leather coloured skin. All these carp are very hardy, and you can carry them any distance in a bag or in a bucket, if you will only keep them moist. Nothing just now is of so wide spread interest in fish culture as carp raising.

Every farmer or retired merchant who owns a pond wants to go to producing carp."

"How large do they grow?"

"They vary in size from six inches to two and a half feet in length and from a pound to eighteen pounds each. They are in season for eating from October through the winter and to April. From Georgia comes an account of the largest carp yet grown in America. Mr. K. Witrowsky, in Atlanta, in cleaning out a pond in which he had put four little carp a year ago, that were then two or three inches long, found that these four carp had grown to be twenty, twenty-two, twenty-four and twenty-five inches in length and the twenty-five inch one weighed seven pounds. Now, you will see the rapidity of the growth of this carp when I tell you that a brook trout requires two years to years to grow to half a pound. To speak of a carp nearest home, a gentleman recently showed me two carp that grew in a pond near Brooklyn from half an ounce to two pounds in ten and a half months."

"Is it necessary to make elaborate preparations for brooding them?"

"Marsh and water lands are easily prepared for the culture of carp. An acre devoted to this purpose is the most profitable investment that a farmer can make. It is a curious fact that farmers washily and intelligently cultivate their land with both capital and labour, but they uniformly neglect the sheets of water on their estates. If they should take the trouble they could so 'carp, two, three, and more years old that might alone be a means of support when their land crops would be damaged or spoiled on account of too hot or too dry seasons. To raise carp a number of ponds are required, viz, one for young fry, one for the growing carp, and one for wintering the carp. The two former may be shallow; the latter must be eight feet or more deep. This is in order that the carp may burrow in the bottom of the pond. The hatching pond should be from a quarter of an acre to two acres in extent, and two to four feet deep. From two to three spawners and one or two millers are necessary, to which should be added a one year old miller, weighing half a pound. If carp have good water, a clayey and rich bottom, and are not too much crowded with other fish, they will weigh upwards of two pounds in the autumn of the third year."

"How far have the New York State Fish Commissioners distributed these fish?"

"The most important fish distribution has been done in tanks in Fulton Market during the last three months. We have distributed from 4,000 carp about the size of a large steel pen in lots of ten to twenty to any applicant who has ponds or waters adapted for brooding and raising. The distribution ended on Feb. 18, and we are now receiving from five to ten applications daily. These applications we put on file, and when we distribute carp again late in the spring they will be attended to. We have sent fish west to Chicago and south to Florida, but the bulk of the fry was sent all over this State as far as Rochester and all through Long Island. Carp have been sent from Washington all over the United States. Much concern has been felt lest the late rains had washed the carp out of the ponds at Washington, but recent despatches say that they are all right. By April 1st there will be at least 1,000,000 young carp from an inch to six inches in length to be distributed."

"What are the carp's enemies?"

"They are black bass, pickerel, sunfish, and all carnivorous fish. Pickerel and brook trout eat their own young, you know, and they can't be expected to spare young carp. As to brook trout, they are particularly voracious. A brood fry who is no longer 10,000 trout fry and expects to find 10,000 large trout in his pond in four or five years will be lucky if he finds 500 trout. They eat one another up. A pound trout will eat a half pound trout, and sometimes, if very hungry, will pitch into one of its own size."

"Is anything really known about carp in this country?"

"No; genuine carp are not known. The Germans are enthusiastic about them. Spanish mackerel and striped bass are superior in flavour, but carp equal in delicacy the salmon trout in our lakes. In two years from now, genuine carp will be found in our markets in abundance. At the coming dinner of the Fish Cultural Association, the edible quality of the carp will be discussed. One thing is certain, this fish stands in the same relation to other fish that domestic fowl does to other birds."

REVOLUTION IN PAPER MAKING.

I am struck with the great change that has taken place in paper mills within my recollection. I think I can remember the time when there was not a paper mill in the United States; at all events, there was not a paper machine running in any mill of which I had any knowledge. My earliest recollection runs back to large rooms filled with great vats, and with men standing beside them and dipping out paper of the required size upon a mangle, passing it over a cruet, and then to let it dry, and by that slow and tedious process making out a day's work. I dare say that the entire paper product of the country in those days was less than the amount that is turned out by a single mill that could be named to day. Almost everything, every department of the mill is changed. There were no chemical used in paper

making in those days; now paper mills are great chemical laboratories. There is scarcely anything in a paper mill today that was not in the early days of its rather revolution. And what is true of the paper mill in that particular is true on a larger scale of every department of manufacture, and it is of the very highest importance for us in America to bear in mind the fact that during the last fifty years the arts have been substantially re-born—reborn. Scarcely any department of manufacture is conducted today by the processes that were in vogue fifty years ago. I had occasion a few years ago, half a dozen years ago, to be in London and had the honour of attending the paper makers' dinner given in that great city at which were gathered a large representation of the paper manufacturers from the different parts of Great Britain. In a few remarks that I had the honour to offer, I ventured to mention that paper making in the United States was carried on to a greater degree than anywhere else in the world. I saw on the countenance of the gentlemen assembled around the board a smile of incredulity, and it was entirely respectable, yet it implied that I was carrying out the usual Yankee idea of boasting of what we are and what we are trying to do, but I said: "You can readily see that this is so; if you carry back your recollection, you will see that you do not make paper now as you did in early times. There is scarcely a paper mill in England making paper now as it did half a century ago. If that be the case, there can be no great value in what is termed hereditary, transmitted skill, because if the process is new since we commenced manufacturing, of course, according to the present processes, we are as old in the art as your are." And I had the opportunity to show to some of them samples of American paper which I had brought with me, and on the day following they admitted that they were equal to anything that could be produced in Great Britain.—A. H. Rice

ON THE RUSTING OF IRON.

Dr. T. J. Philson sends the following note on the rusting of iron to the Chemist: "A correspondent asserts that in making some photographic experiments he found that iron and steel do not rust when immersed in solution of caustic soda and caustic potash, but he appears to have been unable to discover any explanation of the fact in the books and journals to which he has access. 'I cannot understand,' he says, 'why the alkali in the solution prevents the oxygen in the water acting on the iron or steel.' The fact has been known for a great many years, and the true explanation was pointed out, I believe for the first time, by the late much regretted Dr. Glance Calvert, to whom modern chemistry is indebted for much useful work. Dr. Calvert's explanation is in strict accordance with the theory propounded some years previously (1858) in my paper on catalytic force. His experiments showed that the phenomenon of the rusting of iron was due to the presence of carbonic acid, this body forming the third substance requisite according to my theory of catalysis to complete the galvanic chain. Without the presence of this carbonic acid, or some third substance capable of taking its place, the oxygen cannot combine with the iron at ordinary temperatures. A high temperature acts like electricity in promoting the combination. As long as there is free caustic alkali present, of course there can be no carbonic acid, and no rust is formed."

GLASS EYES.

A reporter of the Chicago Inter Ocean has been investigating the trade in glass eyes. From the leading dealer in the west, a firm which has sold glass eyes for many years, he learned that there were as many as a thousand wearers of them in that city, and that from 600 to 800 eyes are sold there every year. The best eyes are made at Uri, in Germany, the manufacture centring at that place on account of the occurrence there of fine silicates and other minerals needed in the business. The German eyes withstand the corrosive action of tears and other secretions better than those made in France. At Uri are also made vast quantities of eyes used by taxidermists in mounting birds, animals, and other natural history specimens, besides a superior quality of glass marbles, known to boys as pebbles. The artificial eye is a delicate shell or case, very light and thin, and concave, so as to fit over what is left of the eyeball. The shell is cut from a hollow horn or bubble of glass, the iris is blown in, and then the whole is delicately reconstituted. The trade in Chicago has undergone a curious change. Twenty years ago there were sold very many more dark eyes than light, but from that period on the sale of dark eyes has been perceptibly dying out. Now nearly all are light eyes, say twenty light to one dark. In Boston the percentage is even larger, about thirty-five blue or light eyes to one brown; while on the other hand in New Orleans fifty brown or dark eyes are sold to one light. Regarding the change of colour in Chicago of course the fashion has nothing to do with it. No one has yet decreed that party coloured optics shall be the rage. The change simply shows that the influx of population has been from the east principally and from northern Europe. Surgical operations are performed much more skillfully than formerly. Time was when it was deemed necessary to take out the eye entirely. Then the artificial eye became a steel, glassy, staring

object. Now amputations of portions of the eye can be performed in very many instances, and the glass eye fitted on the stump, which moves quite naturally. Sometimes those who have lost an eye will keep two or three artificial substitutes. They will use one for the day-light with a small pupil, and another for night-time with a large pupil to offset the dilations.

AN ECCENTRIC INVENTOR.

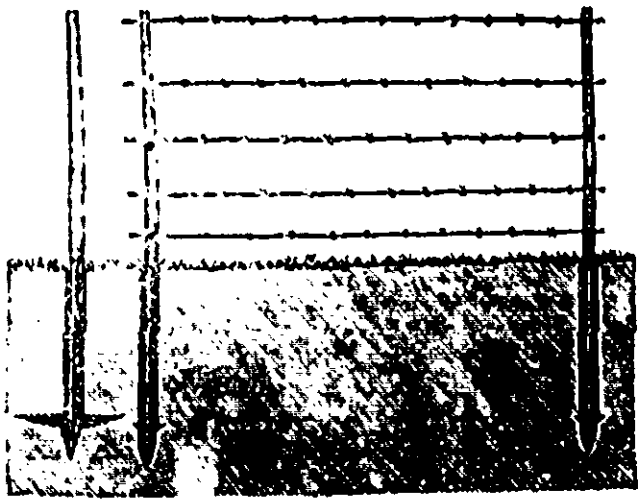
By the death of Col. Roberts, of Titusville, Penn., the United States has lost one of its most successful inventors. His name has been chiefly connected with the nitro-glycerine torpedo, which he devised as a means of increasing the yield of petroleum wells, and from the use of which he is said for several years to have received an income amounting to one or two thousand dollars per day. But this, though the most remunerative, was only one of his inventions, and at the time of his death he was engaged in the construction of a locomotive, which he thought would run with perfect safety at the rate of 100 miles an hour. Although wonderfully clever in the invention of money making contrivances, Col. Roberts' early experiences had not fitted him to make the most judicious use of his readily won wealth. He had far too much native shrewdness to be a second "Cool Oil Johnny," when the royalty from this torpedo patent poured a steady stream of money into his pocket; but, none the less, he spent large sums in a manner more commendable to his local patriotism than to his good taste. One of his outlays was the building of a large hotel at Titusville, and upon its completion parties were taken at the Colonel's expense from various parts of this State and Pennsylvania to see this remarkable structure. Col. Roberts' own bedroom was a wonder of misdirected art. The head board of the bed, many feet in height was a mass of fanciful wood moulding, while the pillow shams and counterpane were constructed from the finest point lace. It was the Colonel's delight to have his male and female guests assemble in this room, admire its gorgeous decorations, and drink champagne with him. Later on, this hotel, or its management did not please him, and although it was fully up to the needs of Titusville, he planned another hotel, which, when completed, he intended to run in opposition to his first venture. Col. Roberts had been the object of so much flattery and subservience on account of his wealth that it is not strange that he partly fell into the notion that money could purchase anything. A conviction bordering upon this opinion seemed to colour a great deal that he said and did, and hence his manners were not always pleasing to those who were blessed with a sufficiency of self respect. Had he lived a few years longer he would undoubtedly have played his part on a wider stage, and the new intercourse might have ground off some of the dictatorialism which a provincial experience gave to him.

It is noteworthy that a group of States with less than a third of the population of the country produce five-eighths of the corn supply of the United States. These are Ohio, Indiana, Illinois, Iowa, Missouri, Kansas, Nebraska. In 1849 the corn grown in the State of Illinois amounted to 57,848,984 bushels; but in 1877 the quantity had risen to 200,000,000 bushels.

Here are some first class frauds in the shape of mining companies, organized and put on the Philadelphia and New York markets by one Major J. W. Bonta, erstwhile of the above cities and Leadville: Eagle Smelting and Silver Mining Company, the Silver Glance Con. Company, Sulphur Company, First National S. M. Company, and the Del Monte of the Gold Medal awards. Anybody who has invested money in the stocks of the above companies can consider they are just that much out of pocket. Taking that view of it, which is the correct one to a dead moral certainty, will settle their mind, and expectations, so that they need have no further trouble about it, unless to sue somebody for getting money under false pretences. Bonta is the man that launched the Scooper awards on Philadelphia, which the old original admits was sold with his knowledge in order to effect the sale at enormous figures.

Before the Leadville carbonate era had been pretty well advanced, Colorado's leading mining districts had been Ulipin and Clear Creek counties. They had given most of the mining product of the State and territory before Leadville's time, and give a larger yield (combined) at the present time than then. But the increase is not rapid, the mines and their mineral veins being of that character that bonuses of the Fryer Hill or Comstock also are not the nature of things. It is more like regular established business that can be counted on for about so much revenue, large or small, according to the character of the vein, varied with considerable improvement at one time and the reverse at another. They are sure enough of profit to cause the business men of Georgetown and Central City, who have watched the record of the mines for years, to operate or become interested in operating them. That is one reason why few properties of these localities are offered for sale at the N. St. These adjoining counties, the smallest in Colorado, have given a compound yield of \$37,000,000. Their present output is between four and five millions per annum. Of the past product about two-thirds was gold.

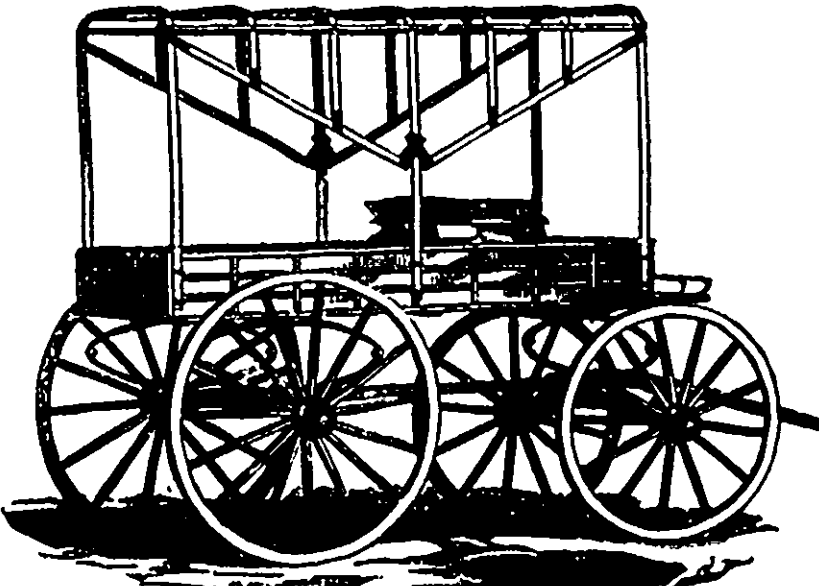
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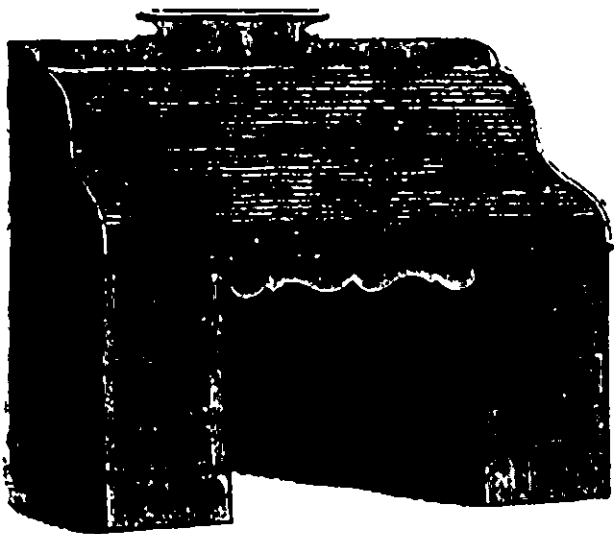
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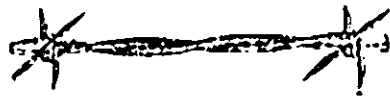
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