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SILVER QUESTION COMING UP AGAIN.

The silver question is evidently coming up again, and it is likely that before long another international conference will be held, with the object of settling, if possible, what place silver coin is to occupy in the civilized world. It is the doctrine of the gold currency school that silver should be used as a subsidiary money only, as a convenience in the way of change, but not at all as the standard money of the country. The silver advocates, on the other hand, contend that the white metal is and ought to be as good a standard money as the yellow metal, with the difference only that more of it will be required to represent a given value. About three years ago an international conference was held at Paris to consider the same question, France, Germany, England, Italy, the United States and other countries being represented, but it came to nothing. The movement in favor of silver was supported by France, Italy and the United States, but England and Germany were hostile, and to effect anything the action of all the powers present was necessary. It appears as if some of the parties to that conference had subsequently obtained "new light" on the subject. BISMARCK, for example, appears to be realizing that he led Germany into a terrible blunder when he tried to break up the old established silver currency of the country, and to make gold the sole standard. From this capital error much commercial suffering and prostration of industry has resulted, and in the dear school of experience a bitter lesson has been learned. The effect of demonetizing silver was to increase greatly the weight of all debts, public and private, to make the rich richer and the poor poorer, and in a general way to set the current change in a direction in which no patriotic Government should wish to see it going. It soon appeared that, in some way or other which people could not account for, property was depreciating in value, so that the man who owed a hundred thalers felt the weight of two hundred upon him. It is beginning to be seen that the gold craze is mainly what has done the mischief, and now BISMARCK is anxious to retrace his steps. Of course, in estimating causes of domestic suffering in Germany, or indeed any other of the nations of continental Europe, the terrible operation of armed peace, which is becoming almost as heavy a burden to be borne as war itself, must be considered. But the burden of the continental military system is no new thing, though that it is becoming heavier every year must be admitted. Still, for the promotion of German commerce and industry recent and other and additional causes must be found; German statesmen, whether rightly or wrongly, have now that they have found it in the exclusive standard which a few years ago was forced upon the country. And even in England, where the "gold standard" have had things all their own way these sixty years past, doubts are being expressed in high quarters whether the gold theory be really the right one from a truly Imperial point of view. For England, as BISMARCK once remarked, is not only a Euro-

pean, but also an Asiatic power, and the interests of the people, even, if you will call them such, of her two hundred millions of Indian subjects, may not lightly be disregarded. Silver is the only money that these two hundred millions know or will use, and to abolish silver money in India might be the signal for another mutiny. Mr. GOUGH, who represented England at the last conference, is presently a London "city" man, and one most unlikely to be influenced by mere sympathy or sentiment, if he believed that hard financial facts pointed the other way. But on that occasion even he let it be understood that his own personal convictions were by no means settled against silver as a standard; though he, in common with some others, felt that the time had not then come for moving in the matter. Perhaps it has come now, at all events it is coming; if appearances be not deceptive. The United States having made the first move, France strongly supporting, an international monetary conference is soon to be held in Paris. And this is what the London *Economist*, a pronounced gold currency organ, has to say on the occasion—"If we cannot enter the Monetary Conference on the same footing as some other parties, we shall at least exercise towards it a very benevolent neutrality. Should, for instance, such a proposal be made to increase the quantity or fineness of the silver in our coinage so as to make it less of a mere token currency, we should hardly object, or to increase somewhat the amount to which silver may be a legal tender. And a despatch from Paris to the same journal says—"The idea of abandoning the proportion of 15 to 1 between gold and silver, as recommended on Secretary BISMARCK'S late report, is supported by an apparently official note in the *Journal des Debats*. A telegram received in Paris, from Berlin, states that Prince BISMARCK has said, if the United States accepted a return to the bimetallic system, he would support the representation of Germany in the Conference." Should this prove a true indication, and should France, Germany and the United States throw their influence in favor of the double standard, England remaining neutral, the thing will almost certainly carry in the Conference. Evidently the whirligig of Time is bringing about certain revenges, the gold standard men do not "hold the fort" with anything like the strength and security of a few years ago. Further news of the conference movement will be looked for with interest, in both Europe and America.

THE QUESTION OF A NATIONAL TARIFF CONSIDERED—GENERAL RESUMÉ OF RESULTS.

Continuing the consideration of this question, we will now discuss the criteria of the distinguishing characteristics of a suitable tariff for Canada. And

- 1st. We have expressed ourselves in favor of the imposition of such a duty on foreign manufactured goods as will enable us to produce all such manufactures as we require, and which can be made under favorable circumstances in Canada.
- 2nd. We are in favor of the free admission of all raw material and commodities, used in domestic consumption and manufactures, and which cannot be produced in Canada.
- 3rd. We are in favour of specific as against ad valorem duties to the greatest extent possible.
- 4th. We are in favor of indirect as against direct taxation.
- 5th. We are in favor of judiciously subsidizing for a time certain manufactures of steel and iron in order to facilitate an early development of these great branches of industry, and open up and utilize our inexhaustible and rich mineral deposits.
- 6th. We are in favor of the imposition of such a duty on foreign agriculture as is imposed by other countries on our own.

Such a tariff should be framed after a most exhaustive and comprehensive study and discussion of the question by the best adapted minds in the country to impart the necessary information in the premises, and the results of such a tariff as we have already in previous articles clearly demonstrated would not be to enhance the price of imported goods in proportion to duty imposed, as illustrated by experience in the United States, but to afford us a healthy revenue, and at the same time transfer the burden of taxation from the necessities to the luxuries of life, besides producing many other happy results. It will enable us, as it does the Americans, to perfect the quality of our manufactures and by improved machinery and competition to diminish the cost of production, and the result will be that we will soon be paying the highest price for labor, the highest price for agriculture, and at the same time the

lowest price for manufactured goods in those centres of population where they are produced. We may be asked if the present tariff has any defects. In our opinion it is not perfect. It is not what Protectionists would call a scientific tariff. In some respects it discriminates too much in favor of Manchester and New England. We are not producing as yet a single yard of printed cotton or what is more commonly called calico. A duty of 5c. per yard on this class of goods would tempt some of the great English houses to open a large manufactory in Canada to supply the local demand, and instead of an immense cost being incurred for patterns and block designs they could for a time be expressed to Canada after being used in England at mere nominal cost. We consume many million yards of these goods in Canada and we should produce rather than import them. The tariff of 42 in the United States ensured their production in that country, and the result has been everything claimed for it. Again, something should be done to develop our inexhaustible mineral deposits? Why should we not produce instead of import the 250,000 tons of steel rails necessary to span the continent from Nipissing to Burrard Inlet? We suggest to the Government the advisability of offering a subsidy of two acres for every ton of steel rails produced in Canada for that road say 400,000 acres as a condition of erecting blast furnaces in Canada, and producing 200,000 tons of steel rails for the Canadian Pacific Railway, Ottawa, above all places in the Dominion, would be the spot best adapted for their manufacture, for the erection of such furnaces. Charcoal can be produced in this vicinity at 6 cents per bushel, which will be as cheap as coal at \$2.75 per ton. We have inexhaustible deposits of the best iron and can procure the highest skill which modern science has yet produced for the erection and working of these furnaces, and the subsidy added to the cost of transportation will render their production cheaper to the syndicate than their importation. Ottawa, with her perfected system of rail and water communication, in the centre of a great mineral and lumber region, is the best distributing and manufacturing centre which could be selected. The effect of such a gigantic industry in the capital and Ottawa district cannot be over-estimated. It would add fifty per cent. to our population, fill every vacant tenement, and cause a demand for hundreds more. It would create a home market for all the surplus agricultural produce of the Ottawa district, create an immense circulating medium in our community, enhance the value of every city lot and acre of land in our vicinity, and give vast freights to our transportation companies. We urge on all Ottawa members to use every legitimate means to ensure its adoption. The disciples of the ex-Finance Minister may ask if the establishment of domestic industries do not involve too much cost? Almost anything worth having, costs in the first instance. It costs to be educated, yet enlightenment at the price of study and gold, is cheaper than ignorance as nature's free and unadorned. It costs to build canals and railways, etc.—it costs to legislate and educate—but the results are more than commensurate to the expense, and the money disbursed in creating a diversity of labor is spent at home among our fellow citizens, not sent abroad to build up foreign labor and capital. The general good resulting from the general consideration of the whole is the great object to be considered. We should manufacture every rail, build every engine, make all the plant necessary to equip and run the Canadian Pacific Railway in Canada. Such a resolve would be a grand stride, a bold and comprehensive move in the path of protection and progress. Sir CHARLES TERRY and Sir LEONARD TILLEY have a chance of rendering lasting services to the industries of Canada, of winning the applause, the gratitude of their fellow countrymen. They have, moreover, all the conditions essential to success, to realize such a bold conception—a great leader to assist, to advise and direct the undertakings—a powerful parliamentary following to second their designs, a country teeming with resources, to render practically such a resolve and the accumulated skill of modern science and invention to enable Canada at the outset to secure everything that can afford certain success. In a word the best means of making the best rail and plant which the present age produces.

Suppose, for instance, a factory is opened in Montreal, giving employment to 1,000 hands, what does this mean? One thousand factory employes will represent a population of at least 2,500. What would the closing of this factory and consequent expatriation of these craftsmen mean? A loss of 1,000 of 2,500. Much more. These artisans require boots, shoes, hats, caps, meat, bread, roots, vegetables, medicine, clothing, houses, wood, etc., etc., almost in *infinitum*, and likewise each of the new or

additional industries which they inaugurate or add to in all its various forms, require the same things, so that each thousand artisans probably adds, in one way or other, 5,000 additional to the population. Have our free trade friends ever considered this? What emptied one-fifth of the houses of Montreal under the late régime? The closing of the factories. What stunted the growth of the city during that dark era? The impediments which the tariff raised to the establishment of new industries and the development of diversified labor. All the artisans employed in the factories of the metropolis wanted homes. It required carpenters, joiners, bricklayers, painters, plasterers, roofers, plasters, workmen of all kinds to erect these houses. It required vast quantities of agricultural produce to fill the stomachs of the various craftsmen which the tariff furnished with a purchasing power, and although to-day the same clouds float over us the same sun, moon and starlight light the heavens by day and night, in the language of Webster, how altered! and how changed! Of 2,000 notes falling due on the 3rd of February in the bank of Montreal, not one was protested!! Among the thousands of vacant houses in Montreal there is not an empty place to be found, and the demand is for hundreds more. The market is flooded with money for investment. Canada towns are worth more than Canada sizes were formerly. Our almshouses, except for the old and infirm, are empty, and the soup kitchen is now a matter of history. The railways are unable to carry the freight offered to them, and the demand for increased accommodation is met by the employment of thousands of able hands, working night and day to meet the public wants. Never was there an era promising greater prosperity for Canada. Bank stocks have appreciated 37½ per cent., and all securities have become correspondingly improved in value, and the prospects of a \$1,000,000 surplus for the financial year ending 1st July, stare us in the face to terrify us into a Free Trade policy. If it is a bad policy to swap horses while crossing the stream, we think it would be rather imprudent to risk a change from prosperity, under protection, to one of promised increased (?) aggrandizement under free trade. We gave some statistics in a recent article about the Redpath refinery. There are about 500 persons connected with that industry, and they paid out in a single year \$125,000 for labor, \$60,000 for cartage, consumed 15,000 tons of coal, costing \$85,000, imported 40 cargoes raw sugar and 700 cars of the same article, and filled 400 vacant houses in the city. When this sole industry accomplished so much under the National Policy, what must not the latter have achieved in the thousands and tens of thousands to whom it gave and gives constant employment? But again, suppose we adopt a nominal tariff; suppose the United States follows our example, what will be the result? The pauper labor of Europe, its cheap capital, their great resources will crush out our domestic industries, pauperize our own labor market in maintaining the unequal contest, the purchasing power of the masses diminish, and expatriate our artisans to seek employment abroad which they cannot find at home. Look at the contrast between the ambitious city of the West with all its factories and diversified labor in the full tide of prosperity, and the homes of the masses the stores of the merchants, the mansions of the wealthy, the material and social development of the people. And then glance at the Ancient City with all its great commercial advantages. Compare the relative conditions of the people of these two cities. The one a manufacturing, the other a non-producing city. Are not all the material comforts of life infinitely more enjoyed in the long dreary winter season in our western rather than in our historic eastern city? Truly did GAZZLEY say, "Infinite are the uses of labor, but its highest fruition is man!" Well did the greatest statesman, the greatest genius of the American Republic say in 1832, "that the transformation of the country from gloom and distress to brightness and prosperity, was the work of American legislation fostering American industries, instead of allowing them to be crushed by foreign legislation cherishing foreign industry."

The Estimates of the Dominion of Canada for the year 1881-2 were laid on the table of the House of Commons on Tuesday by Sir LEONARD TILLEY. They will be found in another column. On Friday, Sir LEONARD will make his Budget speech, which is anticipated with much interest. The Minister will be able to inform the House of the result of the working of the new policy introduced during the session of 1879. The present year is the first which can be properly regarded as a test one. That the announcement will be a satisfactory one we have every reason to anticipate.

CARRYING COAL AND IRON ORE A POPULAR ERROR

As English trade journals published in London, have tried to show recently, the advantage that English Bessemer steel furnaces have over the same kind of works in the Western States in the much shorter distances over which coal and iron ore have to be carried—

The Bessemer Works at Sheffield, in the North of England, are situated on the banks of the River Don, and are about 10 miles from the sea. The Bessemer Works at Chicago, on the other hand, are situated on the banks of the Lake Michigan, and are about 100 miles from the sea. The distance from the sea to the Bessemer Works at Sheffield is about 10 miles, and the distance from the sea to the Bessemer Works at Chicago is about 100 miles. The difference in distance is therefore 90 miles. The cost of carrying coal and iron ore from the sea to the Bessemer Works at Sheffield is about 10 cents per ton, and the cost of carrying coal and iron ore from the sea to the Bessemer Works at Chicago is about 100 cents per ton. The difference in cost is therefore 90 cents per ton.

It is not ore brought to English Bessemer works from a distance farther away than Chicago? What does it cost to carry the ore from the mines to the Bessemer Works at Chicago? The North Chicago Rolling Mills are about 30 miles from the mines, and the Bessemer Works at Chicago are about 30 miles from the mines. The distance from the mines to the Bessemer Works at Chicago is therefore 60 miles. The cost of carrying coal and iron ore from the mines to the Bessemer Works at Chicago is about 60 cents per ton. The difference in cost between the Bessemer Works at Sheffield and the Bessemer Works at Chicago is therefore 90 cents per ton.

The enterprise of iron-making in Canada is hindered by a prevailing popular error with regard to distances, much the same as that for which the American paper just quoted takes its English contemporary to task. Just as the English Journal would discourage the attempt to make steel at Chicago, so do some people discourage all attempts to make either iron or steel in Canada. "The distance"—they are continually saying—the distance we would have to carry coal is fatal to the enterprise; it is a difficulty that can never be got over. The superior advantages of the United States are cited to discourage iron-making in Canada, just as the superior advantages of England are cited to discourage iron-making in the States. Now, it is true enough that there are many iron furnaces in Pennsylvania, which have both coal and ore near at hand. But the mistake lies in arguing as if what is true of some American furnaces were true of all. There are furnaces in New York, Ohio, Illinois and other States, to which ore is carried nearly as far as we would have to carry coal, in some cases perhaps farther. Look at the Canadian ore from the Ottawa district, and from back of Kingston and Belleville, carried all the way to Cleveland. At the mines it may be worth perhaps a dollar a ton; but after the long carriage to Cleveland it has become worth nine dollars. Then look at the immense quantities of ore from the Lake Superior iron district, which are carried all the way to Cleveland, Pittsburg, and even further east. The truth is that coal to make a ton of iron—and Canadian coal too—can be delivered on our own side of Lake Ontario cheaper than Canadian ore is delivered at Cleveland and other points to which it is now exported. A considerable number of American furnaces, aggregating a very large annual output, draw no small proportion of their ore from distances of one hundred, two hundred, and even four or five hundred miles. And both Spain and Norway send large quantities of ore to England, to keep the Bessemer furnaces going. These facts seem to be lost sight of in Canada nearly altogether; we allow ourselves to be frightened by the bugbear of "distance." We see "Iron in the path," and come to the slothful man's conclusion with regard to iron-making at home, while our more enterprising neighbors take the precious ore, with which we can do nothing, and carry it hundreds of miles to their furnaces, almost as far as we would have to carry the coal to ours. The mineral treasures with which Providence has endowed the Dominion are worthless to us, just because we have not the energy to use them, and the wit to help ourselves. It has been said that what man has done, man can do; what, then, hinders us from making iron here, as they do on the other side? Let those who say that we cannot do as our neighbors are doing give a good reason why. It is not the natural difficulties that are insuperable, by any means; the main difficulty, insuperable so far, lies chiefly in our want of courage to follow the example—aye, and the successful example, too, be it observed—which is before our noses. With an efficient measure of Protection guaranteed in the first place, which is of course indispensable, the solution of the iron problem, where the coal and the ore lie far apart, is simple enough. Erect two sets of furnaces, one near the iron mines, and the other near the coal mines, and carry the ore one way and the coal the other way. By this means the vessels or cars employed in the trade will always be

protected to American manufactures, and who will not hesitate to decide the spirit and purpose of the tariff laws, when evasions of duty are attempted by ingenious contrivances. These words chime in well with recent experiences in Canada since the new tariff came into force the ingenious contrivances for evading its plain intent and purpose have been both numerous and audacious. For instance, the increase in the quantities of goods coming in under the designations of "wines" and "woolens" cloths was perfectly amazing. People who did not "know" the proper words have wondered what the immensely increased import of these particular goods really meant. The simple explanation was that the names were used to cover goods which before had other designations altogether, and all for the purpose of evading the tariff. Our neighbors as well as ourselves have experience of this sort of thing, but they propose to meet it and check the evil ere it proceeds much further. Another tariff movement we note on the other side in favor of the protective system. American wool growers, believing that it is necessary in the interest of Protection to revise and reconstruct the tariff, so as to bring it into harmony with the new conditions which the lapse of twenty years' time has developed, have asked for a Commission to investigate and report, in order that Congress may at an early day make the necessary amendments. For the strengthening of the general principle of Protection it is deemed necessary that details be amended. Whether precisely in the way now suggested, that is, by a special Commission, or in some other way, it may be considered certain that the work referred to will be done without very long delay. And we may rest assured that the American National Policy of Protection is in no danger whatever of being disturbed, but is instead of that about to be placed on a broader and firmer basis—on the basis of duration as the settled policy of the country.

TARIFF MATTERS IN THE UNITED STATES.

The Presidential election of 1890 in the United States elicited a very decided and powerful expression of public opinion in favor of Protection as the settled policy of the country. Several weeks before the day of voting it became apparent to the Democratic leaders that the free trade doctrines which their party had inherited by tradition from an earlier time, were not popular with the masses, and that the suspicion of their being opposed to the Protection of home industry, would lose them very many votes. Alarmed at the prospect, they tried another tack, and gave out that "a tariff for revenue only" meant merely the doing away with a few obnoxious features of the tariff, leaving its main principle unchanged, while their candidate sent out to the country, over his signature, the declaration that "all talk of Free Trade was folly" for the American nation. But this eleventh hour repentance came too late, the masses of the people had got it into their heads that a Democratic victory meant danger to the tariff under which American industries were prospering, and in the short time left it was utterly impossible for any man or any organization, however powerful, to act upon the masses so as to convince them to the contrary. In the elections to Congress, and to various State Legislatures, the same strength of popular persuasion in favor of the existing system was shown, and the result is that the next Congress, which begins its Parliamentary existence in March, though it may not meet for business until December, will be Protectionist by a considerable majority in the House, with nearly an even balance in the Senate. In the Congress whose term is about to expire, the Democrats have had a small majority in both Houses, but owing in great part to the strength of Protectionist public opinion out of doors, all the attempts at Free Trade legislation failed but one. That one was for the removal of the quinine duties—the single free trade success in Congress that has to be recorded. But as a measure to cheapen the great fever specific to the people it has proved no success at all, but a failure instead, quinine remaining at the old price. When the duty was taken off, the foreign makers simply raised their prices to correspond, and the benefit to American "consumers" of quinine was nil. The same strength of public opinion in favor of Protection, which decided the Presidential election, continues to show itself in various ways. Mr. BLAINE, whose position as the expectant Secretary of State in the new Cabinet gives importance to his views of public policy, has a bill in hand for subsidizing an American ocean marine, after the example in favor of which the French Chambers have recently decided. Even in the present Congress what movement there is takes a Protectionist drift. The Ways and Means Committee recently reported in favor of abolishing over ten million dollars of home taxation, heretofore levied upon savings bank and other bank deposits, bank cheques, also patent medicines, perfumery and matches of home manufacture. Every million of home taxes, or of non-protective taxes on imports, which is abolished, goes to strengthen the case for the retention of those taxes on foreign commodities which are protective of home production. To take a case that touches ourselves, the abolition of the tea and coffee duties, and of the stamp duties, which protect no home industry, would greatly strengthen those portions of our N. F. tariff which are really protective in their operation. For this reason we shall gladly see these taxes and others like them repealed, as soon as the requirements of the Dominion exchequer will permit. But, to return to what is going on over the border. It appears that, however clear the intention of the framers of the present tariff to give protection to home production must be held to be, the wording of many and various tariff clauses has been so loose and ineffective as to leave loop-holes of escape from its operation, and parties interested in importation from abroad have not been slow to avail themselves of the chances thus afforded. Popular as Mr. Secretary BLAINE is, by reason of his successful national financing and his high personal character together, it is charged that he has shown a disposition to favor the foreign manufacturers in his treasury decisions as to the interpretation of the statutes; and strong representations are being made to the President-elect on this subject. A memorial is now circulating in all the iron districts of the country, and is being signed by nearly all the leading firms in the trade, requesting the appointment by him of a Secretary of the Treasury "who possesses the ability and the inclination to carry out the doctrine of

protected to American manufactures, and who will not hesitate to decide the spirit and purpose of the tariff laws, when evasions of duty are attempted by ingenious contrivances. These words chime in well with recent experiences in Canada since the new tariff came into force the ingenious contrivances for evading its plain intent and purpose have been both numerous and audacious. For instance, the increase in the quantities of goods coming in under the designations of "wines" and "woolens" cloths was perfectly amazing. People who did not "know" the proper words have wondered what the immensely increased import of these particular goods really meant. The simple explanation was that the names were used to cover goods which before had other designations altogether, and all for the purpose of evading the tariff. Our neighbors as well as ourselves have experience of this sort of thing, but they propose to meet it and check the evil ere it proceeds much further. Another tariff movement we note on the other side in favor of the protective system. American wool growers, believing that it is necessary in the interest of Protection to revise and reconstruct the tariff, so as to bring it into harmony with the new conditions which the lapse of twenty years' time has developed, have asked for a Commission to investigate and report, in order that Congress may at an early day make the necessary amendments. For the strengthening of the general principle of Protection it is deemed necessary that details be amended. Whether precisely in the way now suggested, that is, by a special Commission, or in some other way, it may be considered certain that the work referred to will be done without very long delay. And we may rest assured that the American National Policy of Protection is in no danger whatever of being disturbed, but is instead of that about to be placed on a broader and firmer basis—on the basis of duration as the settled policy of the country.

THE ESTIMATES.

On Tuesday afternoon Sir LEONARD TILLY brought down the Estimates for the year ending 30th June, 1882, also Supplementary Estimates for the year ending 30th June 1881. The latter cover the following items.—Civil Government, \$1,242,82; Penitentiaries, \$3,070,75; Legislation, \$10,050; Militia, including allowances to officers retiring under the recent Staff re-arrangements, expense of changes, etc., \$19,315,75; Railways, \$171,349,68; Public Works and Buildings, chargeable to capital, \$4,402,71—chargeable to income, \$44,011,76; Ocean and River Service, \$16,077,30; Geological Survey, \$10,000; Mounted Police, \$190; Indians, \$212,381; Miscellaneous, including \$5,000 for Civil Service and \$12,500 for Pacific Railway Commission, \$31,308,27. The total sum is \$865,586,57. The following is a summary of the Estimates for next year:—

Table with 4 columns: Service, Total Amount 1881-82, Compared with 1880-81 (Increase/Decrease), and \$ est. The table lists various services such as Public debt, Civil Government, Penitentiaries, Militia, Railways, Public Works, etc., with their respective amounts and changes.

According to a statement recently published by the Bureau of Statistics of the Treasury Department of the United States, the exports of breadstuffs for the twelve months ending 31st December, 1880, were as follows:—Barley, 1,246,640 bushels, valued at \$910,948; Indian corn, 1,057,717,285 bushels, of the value of \$56,348,884; corn meal, 38,177 barrels, of the value of \$1,127,383; oats, 544,294 bushels, \$244,035; rye, 2,346,985 bushels, \$2,101,092; wheat, 134,701,146 bushels, \$62,463,762; wheat flour, 6,845,920 barrels, \$38,141,723. The total value of the exports of breadstuffs for the year was \$283,395,357, an increase over the exports of 1879 of \$24,093,468.

EDITORIAL COMMENTS.

The Home Railway Contract Bill was introduced into the House of Commons on Monday, 11th July, and is now law. Accounts to be rendered to the public in England and Wales for 1879-80, and the amount paid for the relief of the poor, was £2,000,000. We are in regular receipt of the monthly part of the Dominion of the great railway taken place in manufacturing circles, and the operation of the existing tariff. Since the opening of the present session the Legislature of Ontario many applications have been made to the Government; but the granting of subsidies are not particularly frequent. Last year the storage capacity of Chicago was increased by 2,500,000 bushels, the result of the erection of two new elevators. At present the capacity of elevators in the city is twenty-two, with a total of 13,010,000 bushels. The last monthly bank statement shows that the authorized capital to be \$66,266,660, and the capital \$81,872,337; paid-up capital, \$3,726,000; notes in circulation, \$25,926,910; total liabilities, \$120,798,283; total assets, \$191,808,277. In the House of Commons, on Thursday, 11th July, Mr. McQUINN'S Insolvent Act Amendment Bill passed its third reading. It contains the following clauses: 1. The fourteenth and fifteenth sections of the Insolvent Act of 1875, and the Act amending the same, are hereby repealed, and the fifty-eighth section of "The Insolvent Act of 1875" is hereby repealed. 2. This Act shall apply only to proceedings under "The Insolvent Act of 1875, and amending acts in any case where the estate of an insolvent has been vested in an official assignee before the passing of this Act passed in the forty-third year of Her Majesty's reign (1880), chapter one, entitled "An Act to amend the Acts respecting insolvency now in force in Canada." The Nova Scotia coal sales of last year amount to 924,059 tons, an increase of 268,035 over the previous year. The Halifax Herald says:—The highest amount of sales ever before reached in the history of our coal mines was in 1873, when under the influence of the previous duty on American coal it reached 861,106 tons. Thus the year 1880 has been the most successful in our history, the sales exceeding those of 1873 by no less than 72,553 tons. We are assured of excellent authority that had it not been for the terrible disaster to the Halifax mine at Stellarton, which that—the largest mine in the province—was closed for nearly the whole of the last quarter of business at the other Pictou mines deranged for a week, the total sales for the year would have, no doubt, exceeded 1,000,000 tons. As it was, the output for the year reached 1,023,710 tons. We are happy to learn that from preparations now being made, and from contracts now actually offered, there is every reason to expect a very large further increase and development in our coal trade during the coming year. Every well wisher of the province must cordially desire that it may be so, as a proper development of our coal wealth must not only be of immense direct benefit to our people, but will also indirectly stimulate other equally remunerative industries.

TURNING THE TABLES.

Although he stated that he did not intend to anticipate the discussion on the budget, in regard to a return of drawbacks, Mr. PATTERSON, of Kent, made a general attack upon the tariff, dealing particularly with the export of manufactured goods which showed a falling off in value last year compared with the year 1878, the last year of the late Government. Mr. PATTERSON spent the greater part of the afternoon in pointing out what was according to his allegation, the injurious result of the tariff of 1879. In a few words the Hon. Mr. BOWEN, Minister of Customs, disposed of his long statement by drawing attention to the following paragraph in the Trade and Navigation returns lately brought down:—"Table No. 1 shows that the value of the exports from the Dominion exceeded in value those of any other year, 1878, and that value was only exceeded in two years, 1873 and 1874, since the date of Confederation. It shows a result never shown before in the Dominion, and is an excess of exports over imports, the amount of the former being over \$100,000,000, and the latter being under \$100,000,000. The value of goods entered for consumption, \$169,121,000; value of import and export on some duties collected, \$14,136,949.22, was exceeded in 1874 by \$263,334, and in 1875 by \$1,222,432.90, but in no other year since 1870." "Table No. 3, aggregate trade of the Dominion, shows that of 1879, of \$15,018,438, and a decrease in that of the United States of \$9,207,538. The trade with the British Empire, West Indies and South America during the year amounted to \$7,262,575, and in 1879 to \$5,000,000, showing an increase in favor of last year of \$2,262,575. The trade with China and Japan shows an increase in the year over 1879 of \$29,944, and a still larger amount in the two preceding years." On Mr. PATTERSON calling Mr. BOWEN'S attention to the fact that he (Mr. PATTERSON) referred only to manufactured exports, the Minister pointed out the defective nature of the representations, and mentioned the fact that the supply of the home market by manufacturers was wholly misleading. The manufacturers of Canada were never more hopeful than they are at the present time.

MR. JOSEPH HICKSON

The Railway Age, an influential American journal, devoted the interests of railways, and published in 1870, contains an engraving and sketch of the career of Mr. Joseph Hickson, General Manager of the Grand Trunk Railway of Canada.

Mr. Hickson was born in the year 1830, in Northampton, England, and when a lad entered the office of the York, Newcastle & Berwick railway at Newcastle, and was afterwards with the Maryport & Carlisle railway as their principal agent at Carlisle.

1880, went to the United States, whilst only 30 per cent. went in 1873. Imports from the United States to Canada were \$2,302,307 in 1878 over exports, whereas, in year ending 30th June, 1880, the imports from the United States to Canada were less than the exports from Canada to the United States by \$3,225,495, or a difference in favor of Canada, in two years, of \$7,187,002.

CANADIAN PARLIAMENTARY NOTES.

A misapprehension having arisen as to the true intent and meaning of so much of that part of section seventeen of the Patent Act of 1872, as specifies the period at which the extension of a patent may be obtained, the Minister of Agriculture moved the second reading of the Senate Bill, the object of which is to remove such apprehension. It provides as follows—

- 1. In all cases in which not more than a year has elapsed since the expiration of a patent, and application to renew the same has been made to the Commissioner of Patents within ten days of such expiration, the Commissioner may, in his discretion and after such hearing of conflicting interest (if any) as he may deem expedient, revive the expired patent and continue the same for the period for which, if application has been made in time, it might have been extended under "the Patent Act of 1872;" but no such patent shall be revived after the 31st of October in the present year.

According to the report of the Commissioners of Inland Revenue, for the year ending 31st March, 1881, it appears that the quantity of spirits charged with duty in the United Kingdom was 28,219,721 gallons, being a decrease as compared with the previous year of 1,576,413.

The report of Mr. Keefer, the Executive Commissioner of the Canadian Commission at the Paris Exhibition, was laid on the table of the House of Commons on Tuesday by the Minister of Agriculture. It is a voluminous document. The total number of Canadian exhibitors at the exhibition was 534, and the total number of awards 284.

Table with 2 columns: Item and Amount. Includes Advertisements, Printing, Stationery, and various expenses totaling \$113,905.36.

THE SYNDICATE AFLOAT

This morning Messrs. Kennedy, Stikney, Duncan, McIntyre, R. B. Appert and the Hon. J. J. C. Abbott assembled in the syndicate headquarters for the purpose of taking steps in connection with their charter Mr. Kennedy presided, and Mr. Charles E. Drinkwater was present in his capacity as secretary.

INDUSTRIAL SECRETS.

A century ago, what a man discovered in the arts he concealed. Workmen were put upon an oath never to reveal the process used by their employers. Doors were kept closed, artisans going out were searched, visitors were rigorously excluded from admission, and false operations blinded the workmen themselves.

WATCH-MAKING IN FRANCE.

Beaumont almost monopolizes the watch-making of France, last year 2,488 of the 444,729 watches manufactured last year coming from that town. Of the Beaumont watches 140,907 were gold and 292,405 silver, the whole being valued at over \$4,000,000, half of which represents labor.

There is quite a rush of work at the Great Western Railway car works.

The preliminary steps are being taken to arrange a reception for Haulan.

The merchant who advertises on the blotting paper has mistaken his calling. He will get nothing but blots in return.

There are now afloat in Gloucester Harbor 400,000 pounds of halibut and 300,000 pounds of codfish, with steady demand.

The clerks of Montreal are establishing a union for the protection of their rights. Mechanics are beginning to move for an advance of wages.

Stocks of lard at Cincinnati are about 12,000 barrels smaller than a year ago; meats about 8,000,000 pounds more; pork 15,000 to 18,000 barrels less.

The Assistant Receiver General at Toronto has just received fifty boxes containing \$5,000 in copper, which he sends for distribution to banks.

It is stated that invitations bearing French and American signatures have been issued for the Monetary Conference, beginning on the 19th April.

The average weight of hogs in Chicago was 258 lbs. against 263 last year, and for three months since November 1st, the average is 261.35, against 264.45 lbs. last year.

Intelligence from Cabul says that Ayoub Khan executed three of his sons for attempting to seize the palace at Herat during their father's absence at Candahar last summer.

Private despatches received from Flat Portage, on Monday afternoon, state that Chief of Police O'Keefe and Constable Cameron had seized 80 gallons of liquor sent out by express.

A Rhelet despatch says the Merr chiefs have resolved to resist the Russians to the last extremity. Five thousand of the surviving Tchekes have arrived. The Russians are accumulating provisions for an advance on Tjend.

The Crown Land receipts for the Province of New Brunswick for 1880 were \$145,000 against \$75,000 for 1879, the increase being in both land sales and stumpage. The average price of land is \$1.50. Out of 17,000,000 acres, the province still retains 7,000,000.

It is said that the crafty ice-dealers of San Francisco annually buy up the crop of an Alaska ice company to the amount of 10,000 tons, which is left to melt where it is cut, while San Francisco and California are served with ice artificially made at an exorbitant price.

A deputation of lumbermen from the Upper Ottawa waited on the Hon. Mr. Chapleau at Montreal on Tuesday to protest against the imposition of the additional taxes which have lately been placed on lumber by the Quebec Government.

In Connecticut there are 3,000 oystermen with a capital of over \$25,000,000. In Darien there are 200 oystermen with an invested capital (exclusive of ground and oyster stocks) of \$5,515, Greenwich, 112 oystermen capital \$185,114, Norwalk, 253 oystermen capital \$20,934, Stamford, 173 oystermen, \$17,000 capital.

The Chief of the Bureau of Statistics reports that the total values of the exports of petroleum and petroleum products for the month of December, 1879, were \$3,011,028, and during December, 1878, \$2,930,447. For the twelve months ended December 31, 1879, \$34,505,645, and during the same period in 1878, \$37,235,467.

According to a report on the Darien canal, made by Joseph Nimmo, Jr. Chief of the United States Bureau of Statistics, the cost of the Suez Canal was \$92,273,907. The receipts last year were \$5,073,188, and the expenditures, including 5 per cent interest upon the share capital, as a sinking fund, \$5,415,542, leaving a net balance of \$57,645.

The boom at Messrs. E. R. Moore & Co's. mill factory, Portland Bridge, N. B., which has been silent since shortly before the opening of the new year, will again be heard on Monday morning. During the cessation the machinery was overhauled, new chimneys built and a floor laid. A gravel roof is to be put on the rear end of the building during next week.

Great Britain and the United States are reported to consume one-third of the world's production of sugar. Great Britain consumes 74 pounds per capita, and the United States 42 pounds per capita. Germany consumes 19 pounds per capita, and Russia only 7 pounds per capita. 90 per cent of the sugar used in the United States is imported from abroad, and it forms one-seventh of all their imports.

In 1860, Alabama was one of the richest States in the Union. Real estate in Alabama was valued in 1860 at \$792,000,000, in 1870 it amounted to not quite \$202,000,000. Cause, the war and emancipation. There are in Alabama 6,500,000 acres of government land, and 11,000,000 acres in timber. Only about 3,200,000 acres are in cultivation. About 1,000,000 bales of cotton are produced in the State annually.

The Grand Lodge of the Ancient Order of United Workmen of Ontario met on Tuesday in the hall in Bouscock's building, Adelaide street, Toronto. There were 150 delegates present. The Grand Master Workman, G. W. Badgerow, was present, and there were also present Grand Freeman Louis of Chatham, Grand Overseer Miller of Goderich, Grand Recorder M. D. Carder of St. Thomas, Grand Guide Dr. Park of Port Robinson, Grand Receiver Ruston of Ridgeway.

The Windsor Mail says—We hear that a stock company of about \$200,000 capital is talked of in Windsor, for the purpose of manufacturing agricultural implements. As the sale of these goods is large, and always on the increase, we have no doubt of the success of the undertaking. We have heard it stated that at least \$100,000 worth of agricultural implements have been sold in Nova Scotia in one year, and there is no reason why such a large amount of money should not remain in the province. We look anxiously for further developments.

The Canadian says that Messrs. J. D. Marcoux and C. L. Gagne last year established a boot and shoe factory on a small scale at Beauport. In fact, it was rather a small shoemaker's shop, giving employment to but 20 hands. To-day, thanks to the energy and enterprise of the promoters, the old shop has given place to a regular factory, worked by steam and provided with all the latest labor-saving machinery, while it now gives employment to over 60 hands, and orders are being executed at the most important houses in Quebec and Ontario.

A gang of workmen are now engaged in breaking ground for the foundation of the new mill proposed to be erected on the site of the well-known "Kent Mills" in North Chatham, Ont. A part of the old structure has been removed and the remainder will be merged into the new building, the elevator wing extending from the mill proper to the dock, remaining as it is. The new mill is to be 54 feet on Kent st. by 42 feet on Thames st., and four stories high including a fine mansard roof. The outward architecture of the building is imposing for a flour mill.

The Thunder Bay North Shore Miner urges the establishment of rolling mills and blast furnaces at that place. It expresses the opinion that "Thunder Bay is the one point most favorable for the erection of rolling mills and blast furnaces, and capitalists can find no better site, and no better time than the present, for the establishment of industries of this nature. There is here the necessary deposit of ore in quality and quantity, the opportunity of disposing of their manufacture at a large profit, and the matter of labor is also favorable, for it is generally abundant at full wages."

In North Carolina there are 1,000 looms in cotton factories, and 102,767 spindles, which consumed 27,508 bales of cotton a year, and give employment to 23,428 persons. These figures indicate about half the extent of the industry in Georgia, which stands foremost in that line in the South. In Massachusetts there are 84,788 looms and 4,664,290 spindles which consume 678,590 bales of cotton annually, and give employment to 62,794 persons. The total number of looms in the United States is 230,223, spindles, 10,921,147, cotton consumed annually, 1,586,481 bales, persons employed, 181,628.

A Montreal despatch says—About two or three years since, owing to the severe depression in the iron and other industries of this city, Mr. Wm. Clendinning, who is extensively engaged in the stove and foundry business, was obliged to transfer all his real estate, amounting to \$300,000 in value, to trustees for the benefit of his creditors. The improvement in his trade, through the National Policy, has enabled Mr. Clendinning to meet his liabilities, and Messrs. James Crathern, Edward Mackey, and P. S. Ross, the trustees, have this week re-transferred the whole of Mr. Clendinning's property back again to him. The creditors acted in the most liberal manner towards Mr. Clendinning during his temporary difficulties. Although a Liberal in politics, Mr. Clendinning has acknowledged in public the benefits which the industries of the Dominion have derived from the policy of the Government. He has now more than double the number of men employed in his establishment than he had two years ago.

SPIRIT OF THE COMMERCIAL AND INDUSTRIAL PRESS.

TRICKS IN ALL TRADES

(Philadelphia Trade Journal)

It is perhaps not known generally that some of the most successful traders are derived from what the world calls imposture, deception and ruse. Matter of various kinds. The investigations of consumers reveal many strange transformations of matter, especially in the case of shoes. In a circular published in New York have been used since the late summer of 1879. Among the new and strange industries discovered, the following are noted. It was found, for instance, that some shoes were made of old shoes, but exactly what was had to find out. Large numbers of old shoes were sold by retailers to customers who disposed of them at a good price. It is known that bits of old leather make the commercial article known as French leather, but only a few shoe manufacturers use it and the new call for old shoes was evidently for some other purpose. In New York city and Brooklyn about three million pairs of old shoes are thrown away every year. Formerly old shoes were plentiful in the cutters of certain neighborhoods; now it appears that they are sought after as cheap prices in the cutters. Invidious persevering inquiry it was discovered that the old shoes were used for three purposes. First, all shoes not completely worn out, are patched, greased and after being otherwise repaired are sold to men who deal in such wares. Some persons wear one shoe much more than the other, these dealers find mates for shoes whose original mates are past hope. Secondly, the shoes not worth patching are cut up into pieces, the good bits are used for patching other shoes, and the worthless bits, the soles and cracked uppers, are converted into Jamaica rum by a process known only to the manufacturer. It is said that they are boiled in pure spirits and allowed to stand for a few weeks, the product far surpassing the Jamaica rum made with essence, burnt sugar and spirits. A gentleman who doubted the truth of this story stopped recently at a low grog-shop in the neighborhood of the factory spoken of, and inquired if they had any rum made from old shoes. "No," said the bar-keeper, "we don't keep it much now; the druggists, who want a pure article, all sell it, and the price has gone up. But we have had it, and we can get you some if you want it." How many old shoes go to a gallon of rum could not be ascertained. It has been noticed by some deputies that while manufacturers are quite willing to put a valuation upon their manufactured product, they hesitate about stating the value of their raw material, and even return the schedules with the space for the value of raw material left blank. In one instance a manufacturer of tomato catsup returned a report giving the value of his manufactured product at \$18,000, and the value of his raw material at nothing. His explanation was as follows: Every year in the canning season he sends to all the wholesale houses which make a business of canning tomatoes clean tubs, with the understanding that the women who trim and peel shall throw the skins and parings into these tubs, every day these tubs are removed, the stuff is then ground up, fermented, flavored and sold as tomato catsup to the extent of \$18,000. Another singular and decidedly profitable business is the manufacture on a large scale of cheap candles from white earth, or terra alba, mixed with a little sugar and glucose. The deputy who investigated the confectionery business reports that 75 per cent of some candies is composed of these substances, and such candy, notably gum deep contains still less sugar. The effect of white earth upon the stomachs of the unfortunate children who buy these candies is yet to be determined by future autopsies. What is called a fine brand of Castile soap has been found to be composed chiefly of this white earth and grease, but the evil effects of such an imposture are trifling compared to the results of turning children's stomachs into miniature pottery works. Among the new industries which have sprung into existence during the last few years is the system of finishing in this city of foreign goods imported in an unfinished condition. Foreign articles composed of several parts are now largely finished in this city, the parts calling for hand labor are imported, while those calling for machine work are made here. In this way heavy duties are saved, although the articles are sold as imported goods. The manufacture of spurious and adulterated articles is not confined to America alone, for we find by the French journals that the question of adulterated and manufactured wines is greatly agitating the French wine merchants, who have petitioned the Government to intercede in their behalf by such legal enactments as will effectually prohibit and prevent the manufacture of artificial wines, the petitioners asserting that not one third of the wine used in Paris is made of grapes. The many Americans who turn up their noses at the juice of our own grapes will naturally wonder what the spurious French wines are made of. The petition of the French wine merchants says that there are a number of large factories near Paris in which wines are made from rotten apples, damaged dried fruits of all kinds, beets and spoiled molasses. But there are not enough of these materials to make as much wine as is required by foreign trade. Turnip juice has been worked over into wine, and American cider is the basis of millions of bottles of champagne, but good apples and turnips are too costly to be wasted on cheap wines, such as most Americans buy. Some of the temperance societies might find the returns they are after by satisfying public curiosity about what wines are made of.

PROGRESS OF ENGINEERING IN AMERICA.

(California.)

Until the close of the last century natural power had ever been employed in its most primitive forms. Wind and water were the only motive powers called in to aid man in his labors, and the appliances to utilize them were of the simplest possible character. It is true some great engineering works were undertaken and completed, but only at large expenditure of mere labor and muscle. But with the introduction of steam, in 1778, a new wide field was opened for the exercise of the genius of the engineer and mechanic. The invention of Watts was a triumph which set men to thinking, and its successful application contributed more to the prosperity and welfare of nations and the advancement of science and mechanism in the next succeeding century than had ever been achieved by the united efforts of all previous times. Perhaps in no part of the world has it given birth to greater activity, or accomplished greater triumphs, than in the United States. At a late meeting of civil engineers in St. Louis a very interesting paper was read by Mr. O. Chauve, summarizing the progress and wonderful growth which engineering has made in this country, and alluding to the high position which the United

States has attained among nations. From this paper we briefly summarize as follows. In the matter of supplying towns with water, the application of steam as a power, and the improvements made in pumping machinery, engineers have made a gain of 50 per cent, over what was accomplished twenty years ago. There are now 200 towns and cities in the United States and Canada supplied with water works, involving 1,000 miles of pipe, some of which is of cast iron. The important progress has also been made in steam engines, and we have now 127 miles of canal. Experiments are in progress in the way of steam propulsion, which it is confidently expected will meet a saving of fully 50 per cent over present methods. In railways American engineers are making the best to support the same introduction of 1878, and are foremost among the nations in utilizing it. The United States leads the world in the extent of her lines, reaching some 200,000 miles, all Europe has but 100,000, and the balance of the world only 20,000. Our railroad engineers and locomotive builders lead all others. Our roads reach further and cost less than any others, and our engines pull heavier trains and run more miles in a year, or during their lifetime, than those of any other nation. The Pennsylvania railroad is pronounced one of the best, if not the best, managed railroad in the world. In regard to bridges, there are now in the United States 200 miles of these structures—one-third of them stone or iron and two-thirds wood. (The East river bridge at New York may be instanced as the boldest conception of bridge construction ever attempted.) The matter of river improvements is just now attracting much attention, and the fact is being realized that until quite recently but little has been done in this direction. It has been demonstrated that the currents of the largest rivers may be controlled by simple brush dykes. The movable dam on the Ohio—a French idea—has already proved a success, and the best engineering talent in the country is now engaged in effecting certain needed modifications required to meet the peculiar nature and needs of our rivers. The recent improvements to navigation at Hell Gate and Flood Rock were referred to as great and novel feats of engineering. In telegraphic and gas engineering we have made wonderful strides. In the former we lead the world; in the latter, since 1850, the number of companies has increased from 50 to 200, with a capital of \$200,000,000. In metallurgy, the increase of our blast furnaces is especially notable. In the amount of iron produced, we are next to England, Germany standing third. Our steel industry, which is now second only to that of Great Britain, will exceed that country in another year. Our increase has been 50 per cent in two years. Our mining industry is simply enormous. The petroleum industry was briefly alluded to. Our exports of that product are now the fifth on the list in point of value. In agricultural engineering our progress has been truly wonderful, and before this all other branches become as dust in the balance. In the plough alone the annual saving labor in producing our crops amounts to fully \$36,000,000 less than the same work would have cost thirty years ago. It is in ship building and maritime trade alone that we have lost ground during the last two decades. The decadence is attributed to the war of rebellion, and to equal competition with England in ship building, and the superiority of iron over wood—an industry to which our engineers and capitalists have not given proper attention; but it is confidently predicted that in the early future we shall once more assume our proper place on the ocean.

THE MOLASSES TRADE OF THE UNITED STATES FOR 1880.

The annual review of the molasses trade, published by the Shipping List, has been issued, and we present to our readers a condensation of the same. The people of the United States are probably the largest consumers of this sweet, and a large proportion of the production of the West Indies is consumed there. The importations in 1880 were not so large as that of the previous year, principally on account of the partial failure of the crop in Cuba and the other West India islands. If the sales of the retailers throughout the country were taken as a basis of calculation, however, it would appear that despite the decreased importation the consumption would show a large increase, for there is very little pure molasses sold at retail. The majority of the syrups and molasses on sale at retail stores consists of mixtures of glucose, molasses and other adulterants. Some years back molasses went into consumption just as it was imported, but this honest practice is now a thing of the past, and golden or silver drips are fast supplanting the honest old Ponce and New Orleans molasses. As a result of this change the rebelling of molasses for the sugar contained in it has become a considerable industry. The quantities thus consumed have been as follows:—Philadelphia, 93,289 hhd.; New York, 68,470 do.; Baltimore, 13,652 do.; Boston, 12,000 do., and Portland, 10,559 do.; a total of 187,440 hhd., against 213,000 hhd. in 1879, 190,000 do. in 1878, and 172,000 do. in 1877, or a little more than 75 per cent of the total importations of foreign for the year. The falling off in the quantity bottled is accounted for by the fact of the smaller importations. The total receipts of foreign molasses at the Atlantic and Gulf ports for the year under review amounted to 32,939,014 gallons, against 34,910,936 do. in 1879, a decrease of 1,971,922 do., or 5.6 per cent, while the decrease in consumption on account of the larger stock brought forward from 1879 was only 1,405,498 gallons, or 4.07 per cent. The domestic crop of 1879-80 was much smaller than that of the previous year, amounting to only 12,202,000 gallons, which, added to the consumption of foreign as above, gives a total of 45,299,184 gallons, against 48,704,682 do. in 1879, a decrease of 3,405,498 do., or within a small fraction of 7 per cent. In regard to values, the average for 1880 was 35 cents per gallon, against a little over 26 in 1879, 33.30 in 1878, and 40.87 in 1877. Regarding the probable supply for the current year, the Shipping List says the latest advices at hand are to the effect that the yield of foreign from all the West India Islands will about equal that of last year. The domestic crop will be considerably larger, the increase being estimated at 25 per cent., or about 100,000 bbls. over that of 1879. Up to the 15th of January, 1881, the receipts at New Orleans had been 207,734 bbls. against 204,359 at the corresponding date last year. The total production of the crop 1879-80 was, according to Mr. A. Boucheron, 244,708 bbls., or 12,189,190 gallons, against 12,218,404 do. in 1878-79, and 14,237,280 do. in 1877-78. The fine quality of the cane this year and its high saccharine value may, it is thought, reduce somewhat the proportion of molasses to sugar, and the excess over last year's yield will be principally made up of low grade centrifugals. Certainly thus far there has been a marked scarcity of the finer grades which have been most sought after by buyers, and sold at relatively higher prices than the common qualities, which have been in more abundant supply.

COFFEE AS IN PARIS

When we talk of coffee we are bound to admit that we are more likely to obtain it in perfect form in either France or Vienna than in any other cities on the face of the earth. There are places in London where coffee is served in the best possible style, but, somehow, one may often be disappointed, whereas it is a common article of both that in the cities above named disappointment is so rarely experienced that the exception would prove the other way. Let us consider this matter with a view to something practical. Having for very many years taken coffee only on some special occasion, the making and managing thereof had not even won the attention of the water in any special manner. But certain requirements of health suddenly gave an interest to the subject, and then commenced a systematic investigation. The result, as will be seen, is very simple, and it must be added that, in the writer's opinion, it is perfectly satisfactory. But to secure the attention of the reader and his or her confidence in the results arrived at a few particulars must be given. Many years ago it was our custom to purchase the best Mocha roasted, but not ground. It was therefore ground as required in a hand mill, and we fondly thought we had coffee in perfection. The familiarity since acquired with coffee in a thousand places, including, of course, certain of the more important European capitals, has confirmed a suspicion we sometimes entertained that in our early days of coffee-making we really knew very little about it. But the subject having acquired special interest in connection with the necessities of a failing constitution, a new effort was made. The old coffee mill was again set to work and fresh-ground coffee was provided and was used more liberally than in the days long gone by, and the coffee as it appeared on the table was fine, but it was not such as may be obtained at a commonplace refreshment in Paris and Vienna. No, there was something wanted, and the question arose, what could that something be? Samples of coffee were obtained from several quarters, and as a matter of course samples of coffee and chicory, both as separate articles and ready mixed. It is with extreme regret we feel bound to state that grocer's coffee is, generally speaking, a very poor article, and that is one reason why the English people do not value coffee as they should. You cannot value a bad article, and thus those who compel you to have it do you a great wrong. The unsatisfactory nature of the coffee sold by the "family grocer" brought to mind as a reminiscence that when coffee was in use in our house many years ago it was the rule with my husband to bring home supplies from a house in London, and we would have gone without coffee sooner than use the rubbish our village purveyor would have compelled us to use if we had permitted him to supply us. Beware, then, of the family grocer and his mixture, for in all probability it consists of bad coffee commingled with an excess of chicory, and is therefore wanting in flavor, aroma, and the fine refreshing and supporting qualities of "coffee as it ought to be." That "perfect" coffee ready ground and mixed can be obtained is as certain as that a journey due North will bring one to the North Pole at last, but it is about as difficult to obtain the one as reach the other. Having tried all the mixtures, and having seriously considered the great chicory question, we have settled down to a rule which we believe to be final, and the consequence is that we take coffee daily "as in Paris" with no trouble whatever. The matter is as simple as cooking potatoes—say, it is more simple, because the labor is less and the result more certain. Let it be clearly understood therefore that without chicory you cannot make perfect coffee. You may prefer to have coffee pure, but then you do not have it as in Paris, and if you follow my advice you will probably never care for pure coffee again. The first thing is to secure a good sample of Mocha and a supply of chicory separate, and use about one-fourth of the latter to any given bulk of the former. At this point two very important matters come before us. In the first place, then, there is not so much merit in grinding coffee as it is wanted as often appears to the folks who incur the trouble of grinding. We find that if kept in close tin canisters, ready-ground coffee is good for two or three weeks. If carefully kept, of course the aroma goes, and the flavor goes, and the refreshing stimulus we desire is no longer in it. Our rule, therefore, is to buy enough at a time for a fortnight or so, as we obtain a very fine Mocha ready ground at 1s. 7½d. per lb. Where and how we get it is of no consequence, but it may be proper to say that an ordinary shopkeeper would probably charge 1s. 10d. for a similar article. It remains then to make the coffee. A common coffee-pot suffices, and the commonest kind of boiling water. We want no percolators or extractors, and indeed, if this paper has any value, it will perhaps consist in the prescription of an exceedingly simple plan of ensuring coffee "as in Paris." Put into the pot a teaspoonful of coffee and two teaspoonfuls of chicory for every three breakfast cups of infusion required. Put the pot on the hot plate for a few moments to warm the coffee, then pour in the boiling water and put the pot on the fire, and when the coffee boils pour it out and return it a few times in the "old-fashioned way," for there is no hot-ber way; and you want no egg-shells, no sole-skins, and no lingslows, for if you are smart in your movements and then leave the pot alone for five minutes the infusion will be as clear as an honest man's conscience, and you have but to pour it out into the cups and enjoy it. Having made it you must drink it, and here it must be recorded that as a breakfast beverage it is certainly better with hot water than with cold milk. The why and the wherefore cannot be explained by the writer of this, but the fact is not to be doubted that scalding the milk improves the flavor and the wholesomeness of the coffee. It should be strong, so as to require reducing with milk and sweetening with sugar, and (and it is a question if it is not equivalent to meat and drink, for assuredly it is as full of support as Atlas, who once took the earth upon his back, and is said to have thrown it nothing of it. Conversing lately with a friend on this subject, he said that when in a Continental hotel he found it a very easy matter to conform to the Continental rule of eating only a biscuit or light roll with his morning coffee. "For," said he, "there is so much support in their splendid coffee that I can do a long and heavy morning's work in picture galleries and hard walking, and want nothing after my coffee and roll until I return at no to the substantial and savory déjeuner. At home I take tea with bacon and eggs, but I prefer the Continental fashion of grand coffee and but little to eat with it." Those to whom, by reason of a day's engagements, it is a matter of importance to make a hearty breakfast, "coffee as in Paris" may be less desirable than appears. At all events, in our household, when we have any reason to begin the day with a good meal, we take care to order tea for breakfast. Taking a broad view of the subject, and with regard to health, it seems that tea is an overpowering sort of beverage, and, as a rule, is 4 ft. 4 in. for us at the beginning of the day. There yet remain, says the Garden, to be points worthy of notice, in respect of

which it is necessary to be tried. Coffee is a valuable medicine, and is often a remedy in cases of sudden congestion of the brain, or of a stupor from poison or of a fainting fit. Cases pure coffee should be used, for it has the virtue of the stimulating qualities that are given by such emetics, and unless the medicine gives special directions, it may be used in any case when coffee is administered. It should be fresh, hot, strong, and without sugar. A friend who offers much from the fact that a small cup of hot coffee, with a little sugar, taken before turning out of bed in the morning, affords him so much relief that he can assign no limits to its value. It is rather provokes than depresses the system, and a certain amount of coffee, therefore, is a strength of the raw material does not prevent the strength of the infusion, and then it is a course.—Exchange

SOMETHING ABOUT MINING INVESTMENTS AND OPERATIONS.

It is a very difficult matter for people who never seen a mine to form accurate opinions as to the value and capacity of mining properties. The judgment from their selections of mines, stocks, and kindred enterprises, one property appears pretty much like another to a home whose worthlessness is apparent to a miner may be the very one of several that receives favorable attention with the capitalists. A class of men who assert that it generally costs dollars to mine and mill one dollar's worth of silver, the very ones who are satisfied with nothing but a return of five or ten dollars for every dollar invested when it comes to a mining enterprise. These men are very sure to embark in such a nature that has no earthly chance of success, and properties as they select are what are largely of the high average cost of the extraction of precious metals, because they are often worked by moneyed men become the prey of shrewd speculators and enthusiasts because they do not take a sensible view of mining affairs. They believe that when they profess to believe nothing. Extraordinary profits cannot be expected unless from a property whose past record warrants great expectations. They do not usually take this fact into consideration, consequently a good talker possessing a vivid imagination, to use the mildest kind of a term, will give every time with a poor mine, as against a representation and a good mine. The astounding unreasonable character of a promoter's statements never dawn upon the would-be investor. It is the original owner is not sharp enough to see what he has, and that a novice in mining like him is shrewd enough to steal a march on his mining brother—when in reality he stands no better off with the latter than he does of saving money and silver from the rock than do the process. The ages have been required to render shrewd investors will avoid many chances of disaster. heed what we are about to say. Every mineral vein is not capable of being made a paying mine that can support a company and be worked from headquarters thousands of miles away. The greater the distance the larger should be the mine in order to pay for the trouble of visiting and managing the same. Every man cannot manage a mining enterprise. A poor manager will prevent a really valuable mine from paying. As much experience and skill is required in the superintendence as in the director of a manufacturing establishment. A mine cannot be everything, including new processes or reduction tunnels. Too many heavily paid officials do not also generally too much for it. A mine should be operated almost as economically after being purchased by a company as when worked by the original owner. Shareholders should never believe the promises better for profits because the company is composed of a lot of nice men or prominent citizens. They are generally merely figure heads, or at all events are incapable of running a mine. Better have a cheap going mine that is an entire stranger. Never invest in tunnel or smelting enterprises. The former are never known to win, and the latter only one out of a hundred. When you have money you put it into a new process, own up that you are fool and go and give the money to the poor. The following fallacies cannot be too severely denounced. That lodes or mines grow richer and larger with depth (bait very generally used to catch gullible that vertical fissure veins are better than any other kind, or richer and more productive than deposits flat veins, that all a mine wants to make it as good as any other is development—in other words all that is needed to catch mineral is a hole in the ground. It is remembered that if what are usually termed fissure veins of anything like a vertical character do not pay well somewhere on the surface, they are not going to do so at great depth, that there are generally but one or two and rarely half a dozen large paying veins in any one district, and that the probability of great mines does not insure wealth to a property. An operator declares that his mine or the company's stock is not for sale, put him or his operations on for a fraud, or else believe some more extensive prospecting scheme is on foot than appears at the sight. When it comes to mines or mining stock everything is for sale if enough can be got for it, and so are many of the ulcers and finest men of the great cities who are induced to embark in rich enterprises—at least they are willing to unload on their friends and confidants if much money is to be made by doing. To those about to invest in mines, we would say, note well what we have written above, and always take hold of a property that has already done well for a longer or shorter time in preference to one that has done nothing in the past, and which has nothing to offer except promises for the future. For mining stocks they should be considered in the same light, unless taken hold of for merely speculative purposes.—New York Indicator.

—Mr. E. M. Tree, clerk of the British American Hotel, Kingston, has secured letters patent for a book register. Books used for this purpose are open to various objections, in that they soon become defaced, soiled and torn. Mr. Tree has supplanted the book with two rollers, one supplying and the other receiving paper, and according as the space becomes filled it is wound upon the receiving roller. The method is very simple, and obtains no perfection the object for which it was invented. There is every probability that the new register will be universally adopted. Mr. Tree is to be congratulated, as he is one of the thousands who have spent valuable hours in taking their inventive grains, who has been rewarded with success.—Kingston News.

TORONTO PRICES CURRENT.

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

PAINTS, ETC.

Table listing prices for various types of paints and related materials.

PETROLEUM

Table listing prices for different grades of petroleum products.

WOOL

Table listing prices for various types of wool.

HIDES AND SKINS

Table listing prices for different types of hides and skins.

LEATHER

Table listing prices for various types of leather.

PRODUCE

Table listing prices for various types of produce.

GRAIN

Table listing prices for different types of grain.

PROVISIONS

Table listing prices for various types of provisions.

SALT, ETC.

Table listing prices for salt and other related items.

BOOTS AND SHOES

Table listing prices for various types of boots and shoes.

LIQUORS

Table listing prices for various types of liquors.

IRON WIRE

Table listing prices for different types of iron wire.

POWDER

Table listing prices for various types of powder.

WINDOW GLASS

Table listing prices for different types of window glass.

STEEL

Table listing prices for various types of steel.

TIN PLATE

Table listing prices for different types of tin plate.

BRASS

Table listing prices for various types of brass.

IRON

Table listing prices for different types of iron.

BRICKS

Table listing prices for various types of bricks.

CEMENT

Table listing prices for different types of cement.

GLASS

Table listing prices for various types of glass.

SOAP

Table listing prices for different types of soap.

WAX

Table listing prices for various types of wax.

RESIN

Table listing prices for different types of resin.

BITUMEN

Table listing prices for various types of bitumen.

ASPHALT

Table listing prices for different types of asphalt.

WEEKLY REVIEW.

Toronto, February 10th, 1881.

Stocks.—The stock market for the past few days has been more active, and today a fair business was transacted.

Flour.—The flour market continues to rule very quiet. The demand long expected has not come, and holders appear to be resigned to the situation.

Hardware.—There is little change in the market this week worthy of note. Prices in heavy goods are still very low, but steady.

Leather.—The general condition of the leather trade has improved since our last report. Prices are steady, with the supply about equal to the demand.

Wool.—Market continues dull and drooping for combing fleeces and prospects are anything but encouraging to country holders.

Provisions.—The general condition of the provision trade has improved since our last report. Prices are steady, with the supply about equal to the demand.

Iron.—Business in this trade ranges from fair to good, orders coming in freely, but mostly for small lots. Remittances are reported improved.

Oleomargarine Manufacture.—The following description of oleomargarine manufacture is from the Analyst.

Novel Road Engine.—We have on several occasions illustrated steam road wagons which promised well, but for one reason or another have failed to come into anything like general use.

Grain Shipments in 1880.—The shipments of grain to Europe from this port, exclusive of flour, for the calendar year 1880, according to the mutual company for the ceiling of grain vessels, were 133,343,163 bushels.

Winans & Co.—Every grade of wool now in store, at lowest figures that unequalled facilities and fresh purchases can possibly provide.

18 Church St., Toronto.

The irregular steamer which entered the harbor by business in the month of January contributed toward the change in the proportion. In 1879, 1,100 sailing vessels and 1,050 steamers were engaged in carrying grain, more or less.

SOLID PROGRESS IN THE SOUTH.

The facts in the case of the State of Georgia show conclusively that the colored population are making very excellent progress in the acquisition of property. And hence the charge that they are being kept in the background, that they are held down by their old owners, is not one which can be sustained.

NOVEL ROAD ENGINE.

We have on several occasions illustrated steam road wagons which promised well, but for one reason or another have failed to come into anything like general use. We now come to hear of a carriage using neither steam nor solid fuel, consequently avoiding the necessity of carrying water and coal.

GRAIN SHIPMENTS IN 1880.

The shipments of grain to Europe from this port, exclusive of flour, for the calendar year 1880, according to the mutual company for the ceiling of grain vessels, were 133,343,163 bushels, against 99,410,080 in 1879.

SCIENTIFIC AND PRACTICAL.

CUTTING HARD STEEL WITH SOFT IRON.

ABOUT TWENTY YEARS ago I was engaged in the... I had a disk about... I had a disk about... I had a disk about...

USE OF THE LEAD BATH.

The employment of melted lead for heating steel articles preparatory to hardening is becoming more common than formerly. Years ago melted lead was resorted to only when the article to be hardened was small in bulk and thin, or when the article was of greatly varying thickness.

A FINEST LAW LICENSING BOARD

Having been the first of the... I had a disk about... I had a disk about... I had a disk about...

UNIFORM MOTION

It is always desirable that the motion of a machine should be regular. Even supposing that the first mover is perfectly constant and equal in its actions, the machine may not be regular in its movement, from the irregularity of the resistance to be overcome.

DESTRUCTION OF IRON.

Some years ago an experiment was made in England, continuing several months, of the effect of percussion on a suspended bar of fibrous wrought iron. It is not convenient just now to recall the details of the experiment which was published at the close of the report.

HOW TO COAT ARTICLES WITH LEAD

Professor Emerson Reynolds thus describes one of the best methods of applying his new process of galvanizing, or covering with lead, various substances: Take 16 grammes of solid sodic hydrate (NaOH) or an equivalent of other suitable hydrate, dissolve it in 1.75 litres of water, and add to the liquid 17 grammes of lead nitrate (Pb2NO3), or an equivalent of other lead salt, with 250 cubic centimetres of water; raise the temperature of the mixture to 90° C.

INSURANCE MATTERS.

THE SINGULAR HISTORY OF A PHILADELPHIA COMPANY

THE FIRE ASSOCIATION of Philadelphia, now one of the strongest fire insurance companies in the country, has a peculiar history. It was originated by Mr. Cabot Smith as a means of securing political employment for himself and grew out of a society which was organized in 1820, and was composed of the several agents and the companies of the old volunteer fire department of Philadelphia. The object of the association was to promote harmony and friendly intercourse among them, to establish a system of mutual aid, and to provide for the relief of those who were disabled by fire.

A MATRIMONIAL BENEFIT COMPANY.

A very ingenious departure in the insurance line has been started in Cincinnati, where a "Matrimonial Benefit Company" has been incorporated. Throwing aside all the traditional schemes of the life insurance business, this company proposes to benefit its members at their marriage instead of death, considering, no doubt, that whereas entering the marriage state the exchequer must oftentimes need replenishing, after death money would prove of very little practical use, so far as the deceased is concerned, other than to pay the expenses of his obsequies.

A bill is before the Illinois Legislature to prohibit any life insurance company from doing business there that is not permitted by the laws of the State where it is located to loan money in the State of Illinois. Such a law as this, should it pass and be approved, would certainly stir up some of our life companies to the necessity of such legislation as would give them a wider range for the investments.

The operation of the plan he has devised will gradually disappear, and in the meantime the poor-law will abolish itself. The plan of contributing to the support of the poor-law is a national benefit society, which applies only to the children of the poor, and to the aged and infirm, to three years of wage earning when the children are to be kept. There is no charge for the children, and the system is not to be supported by any friendly or trade society, will encourage the independent spirit and a hope to rise in the world. It will make the thrifless do their share of the burden which in England amounts to a heavy one.

Several cases of recent litigation between life insurance companies and claimants have called forth comments of a varied character in the public journals. There is a strong feeling in part of the general public to take a supercilious part of this matter of litigation and to try to apply a discriminating manner against every attempt of the companies to protect their policyholders, and to assist to adjust claims. A little investigation would readily show that cases are constantly arising similar to the Walton Dwyght case, or the Elliott case in Oregon, in which resistance is alike in the interest of the honest policyholders and of that generally good which is conserved by an exposure of all frauds. While this much is emphatically true, it is also true that there are companies which not only resist claims under some specious plea arising from the existence of some not very clearly expressed condition in the policy contract, which is unworthy the company and damaging to the reputation of life insurance business. Those companies which strike the golden mean between litigation based on unfair conditions in the policy or the mere technicalities of the shrewd attorney, and litigation based on a fairly supposable attempt at fraud on the company, will not fall of recognition and just appreciation by the observing public in the long run.

A policy of insurance of the life of F. contract this provision: "It shall not take effect until the advance premium thereon shall have been paid during the lifetime of the person whose life is thereby insured." F applied for the policy, and it was issued and left at F's place of business by an agent of the company, who, by letter, requested the payment of the premium if correct and satisfactory. The agent repeated the request by letter a few weeks later. His letter was received by the sister of F and opened by her, he being ill of a sickness whereof he died. The sister, without his knowledge or direction, paid the premium, and F died without knowledge of the payment. Held that the policy was not binding on the insurance company. No contract of insurance existed between the parties at the time of the death of F. The possession of the policy, without a waiver on the part of the company of the condition upon the performance of which it was to take effect, did not constitute a delivery of it in completion of the contract, nor furnish any evidence that the minds of the parties had met. It was not enough that the form of the policy had been approved, for it was still optional with the company whether he would, by payment, make it a binding contract. If he declined or neglected to pay, the company would have no claim for the premium against him or against his estate, because the risk never attached. A proof of loss by the widow and personal representatives of F did not amount to such ratification of the unauthorized payment by F's sister as would give validity to the policy. —Whiting vs. Whiting, 100 N. H. 100, 101, 102, 103, 104, 105, 106, 107, 108, 109, 110, 111, 112, 113, 114, 115, 116, 117, 118, 119, 120, 121, 122, 123, 124, 125, 126, 127, 128, 129, 130, 131, 132, 133, 134, 135, 136, 137, 138, 139, 140, 141, 142, 143, 144, 145, 146, 147, 148, 149, 150, 151, 152, 153, 154, 155, 156, 157, 158, 159, 160, 161, 162, 163, 164, 165, 166, 167, 168, 169, 170, 171, 172, 173, 174, 175, 176, 177, 178, 179, 180, 181, 182, 183, 184, 185, 186, 187, 188, 189, 190, 191, 192, 193, 194, 195, 196, 197, 198, 199, 200.

ENGLISH RAILWAYS.

In England, since 1875, railroad managers, on the 12,000 miles of road added to the 18,500 already in existence, have expended £107,000,000, increasing the capital cost of each mile from £37,000 to £47,000. Since 1874 the net earnings of the five great passenger lines have advanced from 3.41 to 3.97 on the aggregate capital, while on the principal mineral lines these earnings have decreased from 5.34 to an average of 4.82 per cent. As to the deaths of passengers, there have been reduced by one-half, the number of accidents having been diminished by one-third, while the number of trains have been increased 11 per cent since 1874. Fraser's Magazine, in reviewing the whole problem of railway safety, insists that this can be solved only in one way, by means of the staff of safety, which insures that only one engine shall be on the same section of a line at a given time. But if this method the amount of work is very small. For the passage of trains over the same line, in the same direction, at a different rate of speed, no absolute rule of safety exists, although the efficient working of the block system produces an approach to safety. The danger incurred depends on the ratio between the different rates of speed. Forty miles an hour is the time on the London & North-Western Railway, with mineral trains running at 15 miles. As the latter must get out of the way of the former, there are sidings every 7 1/2 miles. When, in 1840, the London & Birmingham road was opened, 28 trains daily were all that were required. The load of the passenger train was 40 tons, and the merchandise train 4 to 99 tons. The passenger speed was 25 miles an hour, the merchandise 20. Since 1875, over the same road 127 trains ran, passenger trains being 257 tons, speed from 25 to 40 miles an hour, while the mineral or merchandise trains are of 540 tons with a speed of from 15 to 20 miles. Of course this work is now done partly on three or four lines. As is well known, the profits of a road carrying passenger is much larger than that derived from an exclusive mineral or merchandise road. For instance, the Metropolitan Railway carries a traffic of £38,000,000 a mile and the Metropolitan District of £34,000,000, which makes each engine on the respective lines earn in one case £12,000, and in the other £10,000, while on some roads, doing an exclusively freight business, the annual earnings of an engine are only £1,000.

It is said that the deputation from the Town Council, appointed to attend to the interests of the municipality, in respect to the Midland Railway legislation, will endeavor to have a clause inserted in the bill before the Local Legislature, declaring that the General Traffic Manager and Chief Engineer's offices form part of the head office of the corporation, and should be stationed at Port Hope. The argument set up to advance this proposition is that at the House last session, the town deputation agreed to assist in the passage of the bill then before the legislature, on condition that the Head Office should remain here, and that the railway has broken faith with them in removing the offices referred to Peterborough. —Port Hope News.

RAILWAY MATTERS.

REDUCED PASSENGER RATES

The Railway Co. says - A practical step in the direction of reduced passenger rates has been taken by the Pittsburg, Cincinnati & St. Louis Railway Company, which announces the following commutation rates:

- One thousand mile tickets for individual use of one person named thereon, good for one year, but subject to extension of time beyond that period, sold to all applicants... \$25.00
Second-Shippers 1,000 mile tickets, subject to same conditions as foregoing, sold only in order of general or division freight agent... 20.00
Third-Fifty trip tickets, available between two stations specified thereon, for purchaser, member of his family or employees, and for one year from date of sale. Per mile... 24 cts.
Fourth-Twenty-six trip tickets, subject to same conditions as fifty trip tickets. Per mile... 23 cts.
Fifth-Extra baggage tickets, similar in form to 1,000 mile tickets, representing \$30 in value, coupons receivable in payment for excess baggage charges at any station... \$20.00
Sixth-Extra baggage tickets representing \$15 in value (discount on either ticket 33 per cent)... 10.00

These rates indicate a very considerable reduction, and offer special inducements to commercial travelers and business men. The excess baggage tickets, at the handsome discount of one-third, ought to be largely purchased, in spite of the fact that accomplished commercial travellers often boast that they understand methods of getting liberal amounts of extra baggage through without charge - except, perhaps, the cost of a few cigars. These tickets make it almost as cheap in the long run to be honest as to swindle the road and corrupt its employees. The Pittsburg, Cincinnati & St. Louis system embraces nearly 1,500 miles of lines, as follows: Pittsburg to Washington, Pa., Wheeling and Columbus, Dresden Junction to Cincinnati, via Zanesville, Lancaster and Circleville; Columbus to Cincinnati; Xenia to Springfield, Ohio; Xenia to Richmond, via Dayton; Columbus to Indianapolis, via Urbana, and Tiquia; Columbus to Chicago, Richmond to Illinois State line, via Logansport.

KINGSTON AND PEMBROKE RAILWAY.

The annual meeting of the shareholders of the Kingston and Pembroke Railway Co. was held last week at the office of the company.

The following are the names of the Board of Directors elected for the ensuing year: Messrs. B. W. Folger, R. P. Flower, J. Tillingshast, H. H. Porter, W. Nickle, C. F. Gilderaleve, Geo. W. Flower, Geo. Swift and G. A. Kirkpatrick.

The president, Mr. C. F. Gilderaleve, presented the annual statement, which showed the receipts of the road to be \$50,933.79; expenditure, \$43,438.30, showing a net profit of \$7,495.49.

The president then said that work had recently been commenced on the line north of the Mississippi river, and eighteen miles of steel rails purchased for next spring's delivery. It is expected that traffic will be opened to the Clyde river during the ensuing autumn. Application is again being made to the Ontario Legislature for aid for the fourteen miles between the Madawaska river and the village of Renfrew, from which point the company has running powers over the Canada Central Railway to Pembroke and Lake Nipissing. The traffic earnings for the year 1880 were, for passengers and mail, \$12,729.20; for freight, \$38,207.25, making a total of \$50,936.45. The expenditure on running account for the same period was \$43,438.30, leaving a profit of \$7,498.15, which provides for the interest on a little over one half of the bonds outstanding, and no interest on the stock, and no reserve for wear and tear of iron and rolling stock.

At a subsequent meeting of the Board of Directors, the following officers were elected: C. F. Gilderaleve - President. Geo. Osborne - Secretary-Treasurer. B. W. Folger - Superintendent. W. Flower - Superintendent of construction.

THE NEW CONTINENTAL RAILWAY.

One of the most preposterous projects that has been presented to the public recently is the so-called Continental Railway. According to a statement given by the company to the public, through the columns of some of our daily contemporaries, the line of road is to extend from the Hudson river, opposite New York, to the Missouri river, opposite Omaha, with extensions connecting Chicago and St. Louis with the East. This line has been surveyed the entire length, and several millions of dollars have been spent in the actual work of grading. Arrangements have already been made to put 10,000 men at work as soon as weather will permit in the spring. It is stated by officers of the company that ample funds are at their command to construct the road and equip it in the most complete manner. There is to be a double track the entire distance of the heaviest steel rails of English manufacture. This route, between New York city and Chicago, according to the surveys, does not vary fifteen miles in the entire distance from a straight geographical line. The distance between these two points is 781 miles, or 128 miles shorter than the shortest route now in operation. By the Pennsylvania Railroad and its connections the distance to Chicago is 914 miles; by the New York Central and the Lake Shore, 980 miles; by the New Central and Great Western of Canada, 961 miles. No one will question the accuracy of the geographical air line between this city and Chicago, while they may deny the practicability of constructing a road on such a line or saving anything like 128 miles over the shortest of the present routes. Further, the statement goes on to show that, besides being the most direct route to the West, the elevations will be less than those of any other road, not exceeding 40 feet to the mile at any point. At the Delaware river the elevation will be 180 feet above the level of the sea at the Allegheny river, 1,100 feet; at Akron, Ohio, 1,350 feet; at Fort Wayne, Ind., 700 feet; and at Chicago, 630 feet. The survey strikes the Delaware river at Belvidere, and the Allegheny at Mahoning, Pa. The Pennsylvania State line is crossed at Newcastle, and thence the projected road runs to Akron, New London, Tiffin, Fort Wayne, Ind., Rosselsaer and Chicago. The most difficult engineering obstacle to be met with on

the line is the crossing of the Delaware, where a pier-bridge is to be constructed 200 feet high. The absurdity and insincerity of the project is still further shown in the foregoing estimate of the elevations to be overcome and of the grades of the road. The elevation at the Delaware river is given at 180 feet while the bridge that carries the road over this stream is to be 500 feet high. Anyone possessing a moderate knowledge of the physical geography of the country between the Hudson river opposite New York and Akron, Ohio, knows full well that a succession of elevations varying from 500 to 2,500 feet must be encountered on the line proposed. The line of the Erie road reaches a maximum elevation of over 1,800 feet, the Pennsylvania road about 2,000 feet, and the Baltimore & Ohio road, where in the vicinity of 2,200 feet, while the New York Central, which passes through the only gap in the Allegheny range, at Little Falls, at an elevation of about 400 feet, has grades on its line of 86 feet to the mile. The three former named roads have several high grades varying from 80 to 125 feet per mile. The elevations of this new line are given at the principal rivers, lying naturally at the bottom of valleys, and no mention is made of the maximum height of the range of mountains to be crossed. This, with other reasons, excites doubts as to that part of the statement which says "this line has been surveyed the entire length." The statement goes on to show that "this road will be completed and in operation two years from next spring. A large staff of engineers will be distributed along the line of the route early in the spring to complete their labors. They will be followed by construction parties, who in turn will be followed by trains with iron and supplies. The entire work will thus be pushed forward with the utmost expedition." The expedition with which this road is to be constructed surpasses anything heretofore known in the annals of railway building in this country, involving the completion of between four and five miles per day. For a road of the magnitude and importance of the one promised, the capital, which for "a double track laid with the heaviest steel rails of English manufacture," and equipped "in the most complete manner," amounting at a low estimate to not less than \$80,000,000, has been secured in the most quiet manner. The taking in of all the great and good things promised by this new scheme is a heavy strain upon public credulity. -New York Inquirer.

QUEBEC RAILWAYS

The Pacific Railway Syndicate, whose contract with the Government has been the one subject of debate since the session of Parliament opened, is reported to have made an offer to purchase, from the Province of Quebec, the railways that will form the eastern continuation of the Pacific as far as Quebec. It has, from the first, been probable that such an offer would be made. The different roads could be worked with most effect under an united management. Under such an arrangement the public ought to be better served than it would be if it were obliged to deal with different owners. The amalgamation of parallel lines is often highly objectionable, since it destroys the very competition which the construction of more than one road was intended to secure, while the union of the several lines which constitute a through line is generally an advantage both to the owners of the property and the general public. But if report speaks true, there is a wide difference in the price which the syndicate offers and that which the Quebec Government asks. The Government of Quebec has carried its energy, in the construction of railways, to the point of temerity, and the consequence has been an overburdening of the finances. If a private company could have been found to build the Provincial railways of Quebec, it would have been great folly for the Government to undertake them; and if it can now disburden itself of the load it has assumed without any great sacrifice, it will act wisely in doing so. It may not get as much as the roads have cost, but it will attain two objects. It will ensure the working of the railways without further sacrifice to the province, and put the provincial finances in an easy position. In doing this, every object for which the roads were built will have been attained. -Monetary Times.

The county councils of Frontenac and Renfrew will petition the Local Legislature to grant a bonus to the Kingston and Pembroke Railway Company, to enable them to build the fourteen miles north of the Madawaska river, the construction of which portion is necessary to form a junction with the Canada Central road.

The Chicago & North-Western Railroad Company report business for the past eight months, from June 1 to January 31, as follows: Mileage, 2,770, against 2,249 the year before. Passenger earnings increased \$376,817; freight increase, \$1,326,331; express increase, \$3,707; increase on proprietary roads, \$426,417; total earnings, \$13,820,037; total increase, \$2,134,278.

The Kingston and Pembroke Railway is being slowly built past our doors, and Lanark looks on unconcerned. No effort is being made to induce it to join the Canada Central here instead of at Renfrew. A deputation is at present in Toronto urging the Legislature to make a grant for the section between Madawaska river and Renfrew. The stock is three-quarters owned by New York capitalists, and they are furnishing the money which is now making the extension. The net increase last year was \$5,000. The Government has given the road running powers over the Canada Central from Renfrew. -Central Canadian.

The bill respecting the Whitty, Port Perry & Lindsay Railway Company provides that the time for the completion of the extensions and branches shall be extended for six years, that power be given to issue "extension bonds" to the extent of \$15,000 for each mile constructed, to lease to, or amalgamate with, other companies, and that an agreement be made with the Midland Company for certain divisions of the earnings of the two roads be declared valid.

The bill to incorporate the Weston & Duffin's Creek Railway Company provides that Messrs. Alex. Manning, John Upper, Kingston, David Tisdale, Simcoe, and Wm. Scully, shall have power, with other shareholders, to construct a railway from a point at or near Weston to a point on the line of the G. T. R. near Duffin's Creek, via a point on Yonge street near Eglington. The capital is to be \$300,000 in shares of \$100 each, and when \$50,000 is subscribed and ten per cent. of it paid up, directors may be elected. The ten per cent. must be paid within twenty days of subscription, and the qualification for a director is the possession of 100 shares. There are to be five directors. The line is to be commenced within three years and completed within seven.

MINING NEWS.

GOLD MINING ASSOCIATION OF CANADA

This association 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. Chaplain is one of the local directors, and Mr. A. A. Humphrey, Quebec, who has been conducting experiments on the property for the past two years, has been appointed managing director. The association, says the prospectus, is formed with the object of purchasing and working an extensive gold-bearing property situated on the Riviere du Loup, Beauce county. The property consists of 1,224 acres held in fee simple, and of mining rights over about 1,327 acres in addition thereto. Both sides of the Riviere du Loup are included in the property to the extent of two and a half miles on one bank and three miles on the other. The estimated cost of plant is £25,000-£30,000 for quartz mills. The gross result is estimated at \$1,200 per day, and net proceeds at \$1,100. The result of one year's operations is set down in the prospectus as follows: Profits, seven months of gravel mining... £10,000 Profits, 12 months of quartz mining... 90,000 Total net profits per annum... £100,000 -Montreal Star.

GOLD DISTRICTS

We give here a list of the proclaimed gold districts with general information, gathered from Mr Gilpin's Mines of Nova Scotia, and corrected up to the end of last year.

CARIBOU

This district is situated (W 30 on the map) about six miles south of the Musquodoboit river, at Hamilton's Corner, about 36 miles from the Shubenacadie station, I C R., from which point a tri-weekly mail runs to the mines. Work was undertaken first in 1867, and several of the lodes have paid well, as the North, Flat, Cross and Hyde lodes; of these the Cross lode at one time gave quartz carrying 20 ounces. In 1877 a lode found on Aren 629, one foot thick yielded, in six months, 1,170 oz. from a slope of 40 feet and within a depth of 120 feet.

FIFTEEN MILE STREAM

This district lies (W 40 on the map) on a tributary of the East river of Sheet Harbor, about 19 miles from the head of navigation. At present it is not easily accessible, there being no carriage road yet made. The Trio mine of the Messrs Hall has five lodes, all running over one ounce to the ton, and a large amount of gold has been taken out during the past summer.

ISAAC'S HARBOR

This district (X 43 on the map) known officially as Stormont, lies east of Sherbrooke. For several years the returns gave an annual yield of about 1,400 oz., but during the last few years the mines have remained almost entirely neglected. Promising lodes have been found in the surrounding country, but have not yet been thoroughly tested. No district in the province has better promise for the future than the one now under consideration.

LAWSONSTOWN

This district lies (S 34 on the map) about 12 miles east of Halifax harbor. In the early days of mining here a considerable amount of gold was taken from rich boulders and washings. A large number of promising lodes are known here, and there is no reason why they should not be worked profitably, it is to be hoped that a successful start will soon be made.

MONTOU

This district lies (Q 31 on the map) about six miles east of Dartmouth, near Lake Loon, and has maintained an average output for a number of years. The Rose and the Symonds lodes have been worked continuously for about two years, and have yielded immense returns, the quartz running from one to six ounces per ton. The Belt lode has been worked by the Messrs. Lawson, who, in the five years ending with 1874, extracted about 10,000 ounces with a handsome profit.

MOOSE RIVER

This district lies (W 35 on the map) about seven miles west of Carleton, and is accessible by a road from Middle Musquodoboit. Only recently has the district received attention, and it promises to be one of the best in the province.

MOUNT UNICAK

This gold field lies (U 27 on the map) about three miles from Mount Uniacack station, W & A. R. A large number of lodes have been exposed over an area having a breadth of about one and a half miles, and a length, it is said, of six miles. During the past year large profits have been realized from the Montreal Company's area by various tributors.

OLDHAM

This gold field is situated (V 30 on the map) three miles east of Enfield station, I. C. R. Gold was discovered in 1861, and since that date operations have been carried on. The worked portion of the district is characterized by a valley having a nearly east and west course, occupying the crown of a very sharp anticlinal fold, the axis of which is nearly parallel to the area line. Among the most noticeable lodes are the Barrel, Ohio, Frankfurt, Ritchie, Hall, Britannia, etc. A large amount of gold was extracted in 1877 by Mr. Baker from a lode in the eastern turn of the measures, the result of five months' work being 1,280 ounces. On areas 101 to 105 the Blackie lode was worked for some time in search of the mispeluk nodules, which were found to carry gold up 5 and 7 ounces per ton.

RENFREW

This district lies (V 28 on the map) about 7 miles west of Enfield station, I. C. R., near the north end of Grand Lake. Work was begun here about the same time as at Oldham, and the returns show a steady increase to 7,004 ounces in 1867. The operations of the Ophir Company were systematically conducted for several years and handsome profits realized, but workings were abandoned at a depth of 350 feet. Their returns during five years were 17,532 or 13 dwts. 21 gr from 21,012 tons of quartz. All the mining has hitherto been confined to the south side of the anticlinal, the measures on the north side are generally covered by soil, and, although rich boulders have been found, the parent lodes remain for future workers.

SHERBROOKE

This district lies (W 40 on the map) about 34 miles by stage from Antigonish, H & C. B. R., near the

Village of Sherbrooke on the St. Mary river, and ranks first in the list of the Provincial gold fields. Up to September 1880, this district produced 19,101 oz., at the rate of 1 oz. 16 dwts to the ton. In the following year, 5,800 tons yielded 8,522 ounces of gold. Among the numerous operations the Wellington, may be mentioned. Here work has been carried on ever since the discovery of gold in the district. The Wellington, De war and other veins have been mined to depths varying from 100 to 600 feet. The proprietors have conducted their operations with care and prudence and received a good return. Between the years 1867 and 1869, they extracted 8,884 tons, which yielded 12,217 oz., and similar results have since been obtained. Among those that have done well during the past year may be mentioned the Dominion, worked by Messrs Fryer & Bent, and the Wentworth, under lease to Mr. Hatter.

TANQUER

This district lies on the Atlantic shore (T 28 on the map) about 50 miles east of Halifax, where it can be reached by a tri-weekly mail, and is well known as the earliest opened. In the eastern part of the district, at Strawberry Hill, work has been pursued for a number of years chiefly on lodes known as the Dunbrack and Forest, and others associated. The Nugget lode of Messrs. Barton has yielded well during the past season.

WASLEY

This district (S 20 on the map) is about 5 miles east of Windsor Junction, I. C. R. There have been large fortunes made here, and after a period of depression new veins have been opened on the Burkner and the McClure areas which promise large returns to the fortunate owners.

WIND HARBOR

This district lies on the coast (W 48 on the map) about four miles east of the mouth of St. Mary's river, and 12 miles from Sherbrooke. Here the auriferous quartz lodes are met with over a belt nearly a mile from north to south, and are in thick bedded quartzes, generally associated with their layers of finely laminated bluish slate, which facilitate mining. Work has been chiefly confined to the ground owned by the Eldorado Company, where it has been continued by tributors since the proprietors ceased operations. The property of the Provincial Company has frequently yielded good quartz, the Caledonia Company having mined in six months, \$200,000 of gold. The Hatter lode has also yielded good returns to those who have worked it.

OTHER DISTRICTS

Among these may be mentioned the Owens, (L 22 on the map) in Lunenburg County, where alluvial washings were carried on for a short time. Gold river (Q 21 on the map), Harrigan cove (U 44 on the map), Salmon river (U 44 on the map), Moose Head (U 43 on the map); Ecum Secum, etc. Gold has also been reported from the Colequid and South Mountains.

THUNDER BAY IRON CO

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

About twenty thousand bushels of coal are mined daily in the mines near Peoria, Illinois.

There are 177 mines in Indiana, employing 3,450 men, which produced in the past year 1,196,490 tons of coal.

The Marquette and Menominee iron districts can furnish between 2,500,000 and 3,000,000 tons of ore this year, if called upon to do so.

The upper Peninsula hasn't one-tenth of the charcoal iron blast furnaces it is capable of sustaining at a profit of money and reputation.

Governor Jerome, in his late message, proclaims the fact that Michigan contains the largest copper mine and the largest iron mine in the world.

The expenses of the recent trial of James Carroll at London are set down at \$3,355, exclusive of the judges' salaries, counsel fees, and witnesses for the defence.

The iron ore producers of the Upper Peninsula, of Michigan, have every reason to expect that the year 1881 will be as prosperous as any they have ever experienced.

The Florence, Wis., Mining News says the corporation known as the Menominee Mining Company mined and shipped in 1880 over 400,000 tons of iron ore from its ore beds in the Menominee district.

Thirteen silver mines yielded \$24,800 in December, as follows: Ontario, \$200,000; Christy, \$25,300; Stormont, \$37,086.85; all of Utah. Northern Belle, \$102,800; Manhattan, \$100,000; Richmond, Con., \$109,000; Grand Prize, \$63,600; North Belle Isle, \$13,700; all in Nevada. Silver King, \$80,000; Harshaw, \$70,000; Tombstone, \$108,000; all in Arizona. Star, \$28,100; Indian Queen, \$17,700; Independence, \$15,600.

In 1878 thirty-five of the great mines of the West reported a yield of \$8,250,500. In 1879 thirty-six mines reported an output of \$23,095,400, and last year twenty-eight mines gave \$19,793,800.

The yield of 1879 \$12,648,000 was in silver.

65,800 in gold and \$281,000 in lead.

Of the yield of 1880 \$11,011,900 was in silver, \$8,441,800 gold and \$340,000 lead. -San Francisco Bulletin.

Twelve gold mines yielded as follows in Dec., 1880: Standard Con., \$221,226.92, including \$13,600 silver; Bodie Con., \$45,198.77; Noonday, \$3,193.29; Syndicate, \$24,769.75; all gold mines of Bodie, California. Homestake, \$108,000; Deadwood-Terra, \$75,000; both gold mines of the Black Hills. North Bloomfield placer, \$21,200; Milton Gravel, \$21,700; Idaho, Nevada County, \$41,000; Fresno Enterprise, \$19,000; Onelia, \$11,400; all of California.

The four leading mixed metal mines gave the following products in December: Contention or Western, \$181,300, of which \$27,100 was gold and \$154,200 silver; Eureka Con., \$157,500, of which \$62,200 was gold, \$67,800 silver and \$27,800 lead; Con Virginia, \$201,000, of which \$38,400 was gold and \$33,500 silver; California, \$41,800, of which \$28,000 was gold and

MONTREAL PRICES CURRENT.

GROCERIES

Table listing various grocery items such as flour, sugar, and oil with their respective prices.

LIQUORS section listing various alcoholic beverages and their prices.

Table listing various types of butter and their prices.

DRUGS AND CHEMICALS section listing various pharmaceuticals and chemicals.

WINDOW GLASS section listing different grades of window glass.

IRON AND HARDWARE section listing various iron and hardware items.

Table listing various types of leather and their prices.

Table listing various types of boots and shoes.

Table listing various types of raw furs.

Table listing various types of window glass.

Table listing various types of iron and hardware.

Table listing various types of leather.

Table listing various types of boots and shoes.

Table listing various types of raw furs.

WEEKLY REVIEW. Montreal, February 18th, 1891. At the Stock Exchange yesterday the market was generally strong, with business quiet.

GROWTH OF INVENTIONS. Prof. Stanley Jevons, ten years ago, found allusion to a magnetic telegraph running through many of the scientific or quasi-scientific works of the sixteenth or seventeenth century.

According to the recent census, Switzerland possesses a population of 2,890,000—that is, 120,000 more than in 1877, when the last census was taken.

THE LUMBER TRADE.

Wm. Smith & Co., of Liverpool, in their annual report say—The year 1890, just closed, has, with few exceptions, been the best fairly satisfactory year the wood trade has enjoyed for many years past, and there is a strong opinion, expressed by many experienced buyers, that it is the commencement of several prosperous years. This, however, can only be the result of the vastly improved state of general trade throughout the country, which has continued to improve from the autumn of 1879, when the iron trade was the first to feel an impetus given to it by the demand from the United States, and, with the exception of one or two reverses, has continued to hold its own. The coal trade, though not quite so perceptible in its improvement, has followed in its wake, a good harvest was also experienced, while, latterly, the general manufacturing trade of the country has gone on improving steadily. No doubt these various features have helped the wood trade, and as these continue to exist so will the improvement go on, and prices will advance, conditionally that over-production does not take place, or money become dear (which latter will naturally follow expansion of trade), producing a weakened market, as in past disastrous years, and probably bringing about disaster. This was strongly noticed in November, when an excessive import came forward, crowding our docks, which, with at the same time a failure in Barrow and our small one in Liverpool, quite paralyzed the trade. The money market has ruled low all the year, and the bank rate of interest has ranged from 2 1/2 per cent. to 3 per cent. per annum, the average of the year being 2 1/2 per cent; the present rate is 3 per cent. Freight has fluctuated considerably, and for some time in the autumn would be high. The import, taking the average of several years, has been small in comparison, and compared with the two previous years is in excess; but considering the small stocks held over in the districts usually reserved from it, it is not more than will be required before the new import begins. The consumption shows a considerable increase, but it is not in proportion to the large import. Had this been more moderate better prices would have been obtained, and the stocks abroad would have been slightly increased, whereas stocks here are rather large, and in some articles excessive. It is worth some consideration that for open water supply. It is reported that fully 100,000 standards are short in the north of Europe, while deals in New Brunswick are fully 70,000 standards deficient, so that one must should remember before any extensive quantity can be brought forward the summer will be far advanced, and this deficiency will have to be filled up before we are equal to last year; as far as the St. Lawrence is concerned, the stocks held have not been so light for very many years. Prices of all kinds now obtainable, with the cost of freight and charges, are much higher than present stocks are now held here at, and this should not be lost sight of by the trader and consumers.

The lumbering business in the Ottawa district will be extensive this season. A Caldwell & Son will cut 1,000 feet in the township of Canoto, Frontenac county, to be sent down the Madawaska. They did not cut last season. Hilliard & Dickson, of the same locality will take up about the same amount. B. Caldwell & Son will cut 400,000 feet of square timber on the Madawaska—about double their product of the two previous seasons. On the Missisquoi Peter McLean will have from 300,000 to 400,000 feet against 150,000 feet last season. The yield of sawn lumber on the Missisquoi will be from twenty to twenty-five million feet. On the Clyde, in Lavant township, county of Lanark, A. Caldwell & Son will also cut about 200,000 feet of square timber.

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THE LARGEST SAW WORKS IN CANADA.

THE WONDERS OF THE GULF STREAM.

Scientific investigation has thus far failed to unfold the greater mysteries of the Gulf Stream. But it can scarcely be doubted that the systematic examinations made year after year, with improved instruments for getting the depth, temperature and other data, will finally reveal the hidden wonders of the famous ocean river. Our present knowledge of the Gulf Stream is limited to facts which do not satisfactorily explain its origin or controlling impulse. It originates, according to Humboldt, near the southern extremity of Africa. It flows into the Atlantic from the Gulf of Mexico, between Florida and Cuba, and runs northward nearly parallel with the American coast until it reaches Nova Scotia and Newfoundland, where, making a great bend, it throws one branch downwards towards the Azores, while the other spreads and flows northwards towards the British Islands, and thence to the Polar Sea. The banks and bottom of this great river are of cold water, and its stream is of warm water. It is 70 miles wide and 3,000 feet deep. The current is swift in the Gulf of Florida and slow at the Azores. In color it is indigo-blue as far as the coast of the Carolinas. The middle of the stream is considerably higher than its edges, making a ridge upon the surface of the ocean, and this wonderful river flows up hill, in one part of its course the gradient of its bed being not less than five or six feet in the mile. But the most interesting features of the stream are its temperature and influence on climate. Even in the frigid regions of the far north it preserves in winter the heat of summer, and the west winds disperse its warmth over all the west coast of Europe, softening and ameliorating the climate. Some recent observations and discoveries deserve attention. At the annual meeting of the American Geographical Society in New York, the other day, Commander Bartlett, of the navy, read an interesting paper on the late investigations of the Gulf Stream by the United States Coast and Geodetic steamer Blake. He assumed that the equatorial current was the source of the Gulf Stream, and likened that current to the heart in the human body, supplying the Gulf Stream with fluid as through the arteries, the water finding its way back naturally by the Polar and colder currents or veins to its original source, the life or moving power being the trade winds, and these again receiving their power from the sun. The soundings were taken with a small piano wire, which was carried to the bottom by a shot weighing sixty pounds. The shot was fast at the bottom and the wire recoiled back by steam; a brass cylinder passed through the shot and collected a specimen of the bottom. Observations of temperature were also taken at different depths, also of the surface and under-currents, and of animal life from surface to bottom. The bottom obtained in the soundings directly on the ridge connecting any two islands, was generally coral sand or dead coral; on each side, in deeper water, pteropod ooze. The substance is described as the accumulation of innumerable small shells which had lived at the surface, and when the jelly-like animal inhabiting them died the shell sank to the bottom. Between Martinique and Guadeloupe a peak in mid-channel was found with only forty fathoms, deepening on all sides to hundreds, and within ten miles to a thousand. Inside the ridge connecting Cuba and Hayti at the Windward Passage, the temperature was constant at 39 1/2 degrees from 750 fathoms to 1,000 fathoms within ten miles of the ridge, and to 3,000 fathoms further on. The bottom was found to be hard coral rock. Everything that could be swept away by a current was wanting on each side of the ridge in 1,000 fathoms; the bottom was pteropod ooze. A deep valley of over 3,000 fathoms, extending from abreast of Santiago de Cuba to Misteriosa Bank, was discovered. The Cayman Islands and the Misteriosa Bank were found to be a submarine extension of the range running along the southeastern side of Cuba. The bottom everywhere in the Western Caribbean is pteropod ooze, with a slight mixture of coral sand. Commander Bartlett builds up a theory. He thinks that the temperatures obtained at different depths, especially on the ridge at the Windward Passage, together with currents observed, afford enough facts to lay out a possible course for the equatorial current from a point south-east of Barbadoes to the Yucatan Passage. A very large volume of water pours through the Windward Passage, flowing south of Cuba and so on to the Gulf of Mexico, and the temperature of the water at different depths agrees at the same season with that of the Gulf. Why does it get this temperature? The temperature below 800 fathoms in the Caribbean sea and Gulf of Mexico, says Commander Bartlett, could only enter over the rim at the Windward Passage, and between Hayti and Jamaica, but at the latter point there is no current setting that way. His theory is that the water for the Gulf Stream is warmed in the main Caribbean, and that a current flows around the entire boundary of that great sea. The equatorial current, striking against South America, is deflected north, and when it reaches the Island of Tobago, all that can flow between this island and the mainland south of Grenada does so. This current is said to be felt along the Spanish main. The greater part of the equatorial current, however, is deflected north between Barbadoes and the Grenadines, finding its way to the westward whenever it meets a passage. The theory that the equatorial current makes the circuit of the main Caribbean, and is warmed in its passage over shoals and banks after travelling nearly 3,000 miles, requires many more facts (especially in the way of temperature), as Mr. Bartlett admits, to fully substantiate it. The facts developed by the survey are interesting and important; and Commander Bartlett's ingenious theory as to how the water for the Gulf Stream is warmed is certainly not beyond the bounds of probability.

RENDERING IRON FIRE PROOF.

Iron, as is well known, is in some respects the very best material that can enter into the construction of a building, and in other respects it is the worst; of the latter phase we would speak. It is hardly necessary to refer to the fact that iron pillars and joists are very susceptible to the influence of heat, and that a fire of small magnitude will soon warp and twist them to such an extent that the fall of the whole structure becomes a certainty. Iron will endure pressure and strain under ordinary circumstances, but will quickly succumb to the influence of heat. To guard against this and to place it in the front rank of materials used in construction, it is proposed, with reason, too, that in all buildings in which iron is a factor, it be encased in some non-conductor of heat. Terra-cotta has been suggested as the remedy. It may detract from the appearance, but that should be subsidiary to safety. If iron can be rendered a salamander, it is certain to rise in favor, because it possesses all the other desirable properties required in the construction of buildings—lightness, strength and beauty.—Insurance World.

A NATION OF CIGARETTE SMOKERS.

The American may be said to have become a nation of cigarette smokers. There was not a very great number of years ago, when the consumption of a paper cigar in the United States was confined almost entirely to the foreign-born portion of our population. To-day more natives than foreigners smoke them. The enormous growth is readily shown by a comparison of figures. For example, in the fiscal year 1879, tax was paid in the United States on 1,088,415,000 cigars, and in the fiscal year 1890 on 4,707,000,000. In 1890 in ten years of 1880, 1881, 1882, 1883, 1884, 1885, 1886, 1887, 1888, 1889, and 1890, the following table shows the number on which tax was paid during each of the past eleven fiscal years:—

Table with 4 columns: Year, No. Cigarettes, Year, No. Cigarettes. Rows for 1879, 1880, 1881, 1882, 1883, 1884, 1885, 1886, 1887, 1888, 1889, 1890. Total: 11,257,702.

The United States now ranks as the heaviest cigarette-producer in the world, France coming next. The annual sale of cigarettes in France is estimated at 900,000,000, or 300,000,000 cigarettes. The promise to-day is that the American cigarette industry will steadily increase. The foreign cigarette meets with a very limited demand in the United States, this country exporting annually very many more millions than it imports. In nearly all parts of the globe where cigarettes are smoked those of American manufacture are fast gaining popularity.—Deutsche Post.

SOLAR CLOUDS AND SUN SPOTS.

Some recent studies of solar spectra in connection with sun spots and other features of the sun's envelope have led Mr. Charles S. Hastings, of the Johns Hopkins University, to form a somewhat novel theory of the sun's constitution and the conditions producing the more notable phenomena familiar to solar students. Mr. Hastings finds, contrary to the received opinion, that the spectra of the centre and the outer edge of the sun's disk are not precisely alike, though the differences are so minute as to escape all but the most perfect instruments and all methods which do not place them in close juxtaposition. Certain of the Fraunhofer lines, the thickest and darkest in the spectrum, notably those of hydrogen, magnesium, and sodium, which appear with a haze on either side in the spectrum of the centre of the solar disk, are sharp and distinct in the spectrum of the limb. Certain very fine lines are stronger at the limb, while other very fine lines are stronger at the center. The ordinarily accepted theory of the solar constitution and the origin of the Fraunhofer lines fails to explain these phenomena. The probable reasons for this failure Mr. Hastings discusses at considerable length in the January issue of the American Journal of Science and then proceeds to frame a theory of the sun's constitution, which, he thinks, will satisfactorily explain all the observed phenomena. The limit of our space forbids more than the briefest summary of his conclusions. His theory differs from that of Faye chiefly in localizing the phenomena of precipitation instead of regarding it as proper to all portions of the photosphere, and in supposing the precipitation confined to one or two elements. He attributes the granular appearance of the solar surface to ascending currents directed generally from the center of the sun. About these currents are necessarily currents in an opposite direction, which serve to maintain a general equilibrium in the distribution of mass. The ascending currents start from a level where the temperature is probably above the vaporizing temperature of every substance. As they move upward the vapors are cooled, mainly by expansion, until a certain element (probably of the carbon group) is precipitated. This precipitation, restricted from the nature of the action, forms the granules. The precipitated material rapidly cools, on account of its great radiating power, and forms a fog or smoke, which settles through the spaces between the granules till revolvatillised below. It is this smoke which produces the general absorption at the sun's limb, and the "rice grain" structure of the photosphere. The reasons for supposing the precipitated element to be of the carbon group (carbon or silicon) is simply that no other substances present the properties indicated by the cloud masses of the photosphere. It is pretty clear that the substance has a boiling point above that of iron, for iron vapor at a lower temperature exists in its immediate neighborhood. The element is not a rare one, and its molecular weight cannot be great, for though precipitated below the upper natural limit of its vapor there are few elements found in abundance above it, and those in general of low vapor density. It is possible that the light coming from the sun is radiated from solid or liquid particles of carbon just at the point of vaporization; but Mr. Hastings is rather inclined to think that the photochemical material is silicon. There is also good reason to suppose, he thinks, that carbon is precipitated at a higher level, possibly along with the less common element boron. The clouds of carbon or other smoke would naturally be drifted into spaces of downward flowing currents, thus forming sun spots, the characteristics of which are readily accounted for by the necessary behavior of smoke clouds sinking into regions of higher temperature. This explanation of sun spots and their allied phenomena is certainly plausible, and we shall look with interest for what older students of the sun shall have to say about it.

INFLUENCE OF CLIMATE ON MANUFACTURES.

The sturdy effort towards manufacturing independence which Canada is now making, under the influence of her new protective tariff, finds a notable counterpart in the present status and industrial prospects of our southern states. The scattered and limited population of the Dominion, hampered in some respects by the rigors of the climate, while arousing the hostile criticisms of England, by what is there regarded as an unprofitable return for past and prospective kindness, is steadily laying the foundations of solid industrial prosperity. But it should not be forgotten or overlooked that even an extremely cold climate has its advantages, in the case of an isolated country like Canada, under a protective tariff. Many articles of apparel and house-furnishing are required by the people, in consequence of the climate, to a much greater degree than would be the case in a warmer country. Houses, too, must be made warmer, and buildings must be better sheltered from wintry blasts. All of these things, while they may not afford Canadian manufacturers equal advantages in supplying other countries, suffice to give them more business at home than an equal population elsewhere would require. In the southern states of this country however, widely different conditions obtain. The promoters of

lumber manufacture in those states, while shielded from competition with the poorly paid labor of Europe, by a protective tariff, find themselves brought into square competition with the older manufacturing states, and must therefore be on their guard. But their warm climate must inevitably afford our southern states important advantages which are peculiarly their own. The well established position of those states as a cotton-growing region affords a good basis for prosperity in cotton manufacture, while the low cost of living, due to the mild climate, if it does not make these states in the near future a favorite abode for workmen, can certainly be expected to influence the cost price at which cotton goods, and many varieties of general manufactured goods, can be produced, with reference to supplying foreign markets. In this connection, the industrial history of Indiana is a case in point. The statistics of machine produced wares in Huntington show a very rapid increase in recent years, approximating an amount quite sufficient to attract the markets of the world. Nor can it be said that the ignorance and inattention of the operatives of that country account for the low rates at which labor can be obtained. The warmth of the climate, the fertility of the soil, which usually accompanies such climates, and the correspondingly low cost of living, are positive advantages, which not even the accumulated burdens of ignorance, heathenism, bad business management and centuries of misgovernment can wholly weigh down.—American Machinist.

ANCIENT HISTORY OF THE BEAN.

This innocer vegetable, which with us certainly awakens no lugubrious thoughts, was formerly consecrated to the dead. It was offered in sacrifices to the infernal gods, and its mysterious virtues evoked by night, spirits and shadows. The Flamen of Jupiter could not eat it, and he was forbidden to touch a bean, or even to pronounce its name, for the fatal plant contains a little black spot, which is no other than a noxious character—a type of death. Pythagoras and his followers carefully avoided this diabolical food, in the fear of submitting a father, sister, or beloved wife to the danger of a cruel mastication; for who know where wandering souls might rest during the course of their numerous transmigrations. Grave writers say the cause of this abstinence is, that beans are difficult of digestion; that they stupefy those who make use of them as food, and that hens who eat them cease to lay eggs. What more shall we say? Hippocrates, who as he certainly was, had some of these strange fears, and he trembled for his patients when beans were in blossom. In spite of such ridiculous prejudices, this plant had numerous and enlightened defenders. When green, it was served on tables renowned for delicacies; and, when fully ripe, it frequently replaced both wheat and other corn. One of the festivals of Apollo—the Pyanepsia—owed its origin and pomp to the bean. This vegetable then obtained pre-eminence over all that were boiled in the sauceman, and offered to the God of Day and the Fine Arts. Is it possible to imagine a more brilliant rehabilitation? If we are to believe Isidorus, this plant was the first culinary vegetable of which man made use; he was therefore bound to preserve a grateful remembrance of it. King David did not deem it unworthy of him, and the prophet Ezekiel was commanded to mix it with the different grains of which he made his bread. We possess few certain indications proving the different culinary combinations to which beans gave rise among the ancients. All we know is, that they ate them boiled, or raw. Two kinds especially attracted the attention of true connoisseurs of that class of gourmets, e. e. t., whose palate is ever testing, and whose sure taste detects and appreciates shades of almost imperceptible tenacity—first, the bean of Egypt, recommended for its rich, nutritious and wholesome pulp; this bean was also cultivated in Syria and Cilicia; and, secondly, the Greek bean, which passed at Rome for a most delicious dish. Certain gastronomists, however, preferred another vegetable of which we are going to speak. Ever since the Middle Ages the bean has played a very important part in the famous "Twelfth-night cake," almost all over Europe. The ephemeral royalty it bestowed was often sung by the poets, and consecrated in chronicles. Thomas Randolph informs us that Lady Fleming was queen of the bean in 1563. Some days after, the Duke of Guise was assassinated by Poltrot. History has its puerilities as well as its great tragedies. The Spaniards had as their Twelfth-night cake. When John, Duke of Braganza, had obtained the crown of Portugal (1640) Philip IV. of Spain inform Count Olivares of the event, and added, as if it were a consolation for the loss of a kingdom, that this new sovereign was nothing more than a "king of the bean." Philip was mistaken. In England the cake was often full of raisins, among which were one bean and one pea. "Cut the cake," says Melibceus to Nias; "who hath the bean shall be king; and where the pease is, shall be queen." At the present day the bean is one of the vegetables most cultivated in Egypt and Italy. At Naples, as in Egypt, they are eaten raw when young, and the large ones cooked and grilled in the oven. They are publicly sold already cooked.

—The loss to merchants by the blockade of streets in New York, consequent upon the icy condition rendering trucking exceedingly slow and difficult, is said to be one hundred thousand dollars daily.

—According to Brochert's, the amount of lumber manufactured in the leading Michigan districts during the year 1890 was 3,938,187,227 feet, an increase of 651,510,514 feet over the production of 1879. More than one-third of the demand, or about 6,000,000,000 feet was supplied by Michigan, Wisconsin and Minnesota.

—Last fall, when lumber was bringing a good price, it was thought that with the coming of winter there would be a general rush for the woods, and every man who could haul a 1,000 feet on the roll-way would do so. Others predicted that in consequence thereof with the coming of spring so many millions would be ready for shipment that the market would be glutted, and the lumber operators would incur heavy financial losses as one of the results of their winter's work. But at present, as far as this section of the country is concerned, neither of the above suppositions are likely to become true. About the same number have gone into the woods as last year, and there is now, apparently, fewer number of feet "browed" than there was this time last winter. Messrs. Beveridge Bros. expect to have, by the end of winter, about 3,000,000 feet. Mr. Geo. T. Baird about the same, and Mr. S. P. Walto, for the first time, experiments in procuring a few hundred thousand. It is impossible, at this season of the year, to estimate accurately the number of feet that will be ready when navigation opens, for rafting and drifting to market. Still it may be roughly calculated that the number of feet that will float down the Saint John from the Tobique, Aroostook and one or two smaller streams in their vicinity, will not exceed 25,000,000 feet.—St. John, N. B., Telegraph.

THE METAL TRADE.

ENGLISH MARKETS.

An English correspondent, writing on January 22nd says—

We are in a position to do much work this week. However, during the week we have also been snowed out. But that is not all, open-roads between Manchester and the West Lancashire... The railway can render but inefficient aid. Wanting uniform water certain of the lines are running only part of their usual service of trains.

United States steel orders are contributing appreciably to the work upon which the firms in the Sheffield district are engaged. The order for 30,000 tons, placed by Mr. Vanderbilt, was allotted, half of it to the Cyclops works in Sheffield, and the other half to a works outside Sheffield.

A mild excitement about United States orders is setting in throughout South Wales. It has become known that a States buyer who was not unsuccessful in his purchases here a little over a twelvemonth since, has again notified his agents in Wales that he is once more under weigh to confident as those here who know him, that he will drop some good orders, that before his arrival purchases of raw materials are taking place with considerable spirit.

The steel rail mills generally are well on, but the business outlook does not all round become more cheerful. Nevertheless such is the demand from the home and export markets for high-class iron suitable for rail-making that the Barrow hematite pig firms have put up pigs 2s 6d per ton. The advance is upon the minimum rate which before ruled. It brings the grey forge qualities of the West Coast up to 75s. per ton delivered in the Midlands. Consumers will not, however, advance upon the 67s. 6d. at which a few were last week prepared to buy.

This week warrants in the Glasgow market have seen a decline of about 1s per ton. Yesterday (Friday) afternoon the tone of the market was flat, and business was transacted at 52s 6d to 52s 8d one month, and as low as 52s 4d cash. This last price is a decline of 1s 1 1/2d upon the previous Friday. Makers' prices, however, kept up very well. It is not easy to trace the exact cause of the drop, since it may be said that the general demand has been good, though scarcely so active as last week. The Continental demand is stopped by the freezing up of the canals, and shipments are therefore small. They are much below the opening weeks of last year—10,000 tons less during the first fortnight. Without doubt the production is still far in excess of the legitimate demand. 124 furnaces are alight, which is an increase of 20 over a year ago. Connal's stores now reach the enormous total of half a million tons. Manufactured iron is steady, and a large business has been done since the beginning of the year at unchanged prices.

The Cleveland iron trade has again seen a dull week, and prices have fallen to almost the same extent as have those of Scotland. At Middlesborough market on Tuesday, a very small amount of business was done, and the price for No. 3, prompt delivery, was nominally 41s. Sales took place at that figure, as well as at 40s 6d, and some small purchases were made even at 40s 6d. The key note struck by these prices on market day has been followed throughout the week, and yesterday at Middlesborough prices were nominal at 40s 6d for prompt deliveries of No. 3, buyers offering 3d and 4d less. The sales concluded yesterday were almost nil. Yesterday's prices were a drop upon those of the previous Friday of between 9d and 1s per ton. Makers are more independent of extraneous influences than merchants, and are firm in their rates. Very few will sell for prompt delivery at below 42s for No. 3, and 41s for No. 4, while for deliveries up to April 1st per ton more is asked. Makers allege that the low prices of this week are the result of the "bearing" operations of merchants, since it is only by causing fluctuations in price that the speculator is able to make his money. A quiet, steady market, tells against the class of trade done by middlemen. There is thus a desire to keep things moving, either one way or the other, and as often down as up. The shipments during the last ten days have been much below the average, by reason of the inclement weather, so that instead of sending away 3000 tons per day of Cleveland pig iron from the Tees, the average has been but 2000 tons. During the week ending Thursday night, the exports from Middlesborough totaled 11,525 tons of pigs, which was 830 tons less than the week before. These decreased shipments will of course lead to increasing stocks. In Connal's stores there are now 132,770 tons of Cleveland pig, or 1250 tons increase upon a week ago.

To-day the return of the accountant to the North of England Iron Trade Arbitration Board is available, showing the prices which have ruled in the quarter ending 1890. The net average price of single bars and plates was £6 4s 4d, which is a reduction on the quarter immediately preceding of 3s. 9d per ton. The net average price of "teas" was £9 9s. 1d.; bars, £5 18s. 1d.; angles £5 11s. 3d. In the September quarter the prices were: Plates, £6 12s. 6d.; bars, £6 4s. 1d. and angles £5 15s. 6d. The reduction in prices carries with it a drop in wages for the three months ending April next of 3d per ton as to puddlers, and 2 1/2 cent. as to the mill men. Puddlers' wages now be-

THE LONDON MARKET.

The following were the closing prices in the London metal market January 21, 1891.

Table with columns for item names (e.g., Bessemer iron, Muck iron, Blooms, Nails) and prices in various units (per ton, per cwt, per lb).

UNITED STATES MARKETS.

(American Manufacturers.) Pittsburgh.

Pig Iron—It can scarcely be said that there have been any advances in prices since those noted last week, yet the condition of the market seems to warrant a discontinuance of the minimum prices then quoted for the better grades of iron, in respect of which there is more firmness. It is thought by consumers, however, that prices cannot advance much while bar iron remains so low. The fact is, producers of ore are the ones who are realizing most of the money at the present time; the high price of ore making the production of pig iron costly, while the price of the same is kept down by the low prices realized for finished iron. There is considerable complaint at present as to the quality of some of the so-called red-short irons, which when worked do not prove to possess the red-shortness usually expected of such iron. It is possible the narrow margin on that class of iron has tempted some producers to use a little ore that would better have been used for making iron of a different class. We quote as follows: Cold-short, \$21.50@22; neutral, \$22.50@23; extra neutral, \$24; cinder-mixed red-short, \$25; all-ore red-short, \$27@27.50; Bessemer, \$28.50; No. 1 foundry, \$23.50@25; Missouri and Lake Superior warm-blast charcoal, \$30; Hanging Rock cold-blast charcoal, \$42@45; Hanging Rock charcoal foundry, \$30@32, as to quality—all 4 months' time.

Manufactured Iron—There are no changes to report in respect of manufactured iron. We quote as heretofore: Bar, 2 1/2, sheet No. 24, 4@4 1/2; tank, 3 1/2@3 3/4—usual terms.

Nails—A meeting of the Western Nail Association was held in this city on Wednesday. Prices were left as they were, as follows: \$2.85 for 10d. to 00d., less 2 per cent. for cash, with an abatement of 10 cents per keg in lots of 250 kegs.

Halls—There are no changes to report as to rails. Steel are still quoted at \$40 to \$41 at mill, for delivery throughout the year; while light iron rails remain at \$48@50 per ton.

Steel—The works continue busy, although new orders are coming forward at only a moderate rate. Prices have undergone no change, and we repeat quotations, as follows: Best quality refined cast steel, 11 to 12 cents per pound, as to quantity purchased; crucible machinery steel, about 7 cents; and Bessemer and open-hearth do. at 5@5 1/2 cents; Bessemer and open-hearth spring, 4@4 1/2 cents, and do. plow at 4 1/2@5 1/2 cents.

Old Rails—There is no quotable change in prices of old rails, but they are weaker in this market. In the Eastern markets they have declined about a dollar a ton since our last report. Tees, \$31@31.50, and double-heads, \$32@32.50.

Scrap Iron—Since our last report, No. 1 wrought scrap has sold at \$29 per net ton, an advance upon previous prices of from \$2 to \$3, railway machinery scrap is worth from \$30 to \$32 per net ton. The advance in scrap is due to the cold and snow which have so long prevailed, these causes operating against the collection and transportation of this material.

Philadelphia.

Pig Iron—The market has not undergone any important changes since last week. Large buyers are much better pleased with the condition and prospects of the market this week than they have been since December. Sellers do not speak with the same assurance of an improving market as they have been wont to do. There has been no advance in prices nor any decline, and no anxiety on that score. Manufacturers, except for best grades, are not satisfied with prices, and argue that the more active demand which is expected will surely follow the breaking up of the ice blockade, will be accompanied with prices one or two dollars at least better. Inquiries as to the condition of stocks elicit the fact that there are no accumulations, and if there be any, it is probable they are of new and more common brands. So far as the facts can be arrived at by inquiry the production is all taken up by current wants, which fact affords some hope to those said to be working on little or no margins. It would also appear from the statements of those situated to know, that at present prices a profitable increase of aggregate yield is not attainable. Sellers profess to be satisfied with the volume of business and prices. A very fair amount of business is being done in from one hundred to five hundred ton lots in gray forge irons, which generally command \$19, with prices running up to \$21 at furnace for finer brands. An equalizing process is gradually going on of grades below No. 1 to 4, but in the absence of a

vigorous demand the process is slow. No. 2 sold this week here at \$22 1/2, No. 1 is quoted at \$25. Several further lots of large iron at \$18. There are a few buyers in the market, but they say "We will give you enough, but the instances of this kind have not terminated in business. The top price for No. 2, not best, large iron is \$20 at furnace, but \$19 is the figure at which it has been sold.

Nothing is being done in English iron. Scotch iron sells \$22 1/2 for Eglinton and \$24 5/8 for Gartsherric.

Bessemer Iron—There have been no heard of transactions of moment in Bessemer iron. Asking price is \$27 1/2. There are offers to take at something less.

Muck Iron—There are no lots being offered, but buyers are around, and \$38 is the lowest price at which muck iron has been offered. Some holders are holding at \$38.50, and for better quality \$39 is asked, and in certain cases obtained.

Blooms—The works are all nicely sold ahead. Today one firm sold three car loads at \$5 here, and refused to sell slab blooms for boiler plate at less than that figure. This week there are a few inquiries from new buyers. Anthracite is still quoted at \$57, and sunken scrap, \$45.

Nails—Nails are firm at \$2.90, but few shipments, owing to the weather. An active demand will very probably follow to compensate for the enforced dullness.

The reported favorable condition of the sheet mills still continues, and a greater volume of business is being done at this time than is usual. Prices are fairly maintained, with slight concessions for large lots. Quotations are as follows.

Table with columns for item names (e.g., No. 28 to 24 w.g., No. 22 to 20 w.g., No. 18 to 21 w.g., Best charcoal) and prices.

All net prices wholesale; retail prices 1/2 additional on all the above.

Iron Rails—There have been transactions since last report, amounting to several thousand tons for Western delivery in the summer, and there have been inquiries which have led to negotiations, but as yet to no business. The difficulty is in old rails. The transactions referred to were made on a basis of \$47, which shows a slight advance over previous actual selling prices. If terms can be agreed upon, the iron rail mills will have abundance of work for some time to come.

Steel Rails—Apart from inquiries for 20,000 tons received late last week, there have been no transactions of importance. It is stated that buyers are looking abroad for more prompt delivery, but the advantage in price, after risks, is very trifling. There are inquiries at all times on our market, and every accommodation is extended to secure business, out the mills are so far sold ahead that it is out of their power to do more than tell new customers to take their turn and have patience. Those who have got orders placed may have reason to congratulate themselves. Selling prices are not stated, but are near \$63 at mill.

Old Rails—There has been a slight weakening among holders, who certainly expected consumers to rush wildly after them with their pocket books in their hands. As they have remained coolly in their offices the holders are somewhat repented of their evil course and are disposed to accept less figures. Still buyers are not appeased and decline to buy except in small lots at about \$25.50 for tees here; \$28 in New York, and \$30 for doubles here. The bar mill men are the buyers. The rail mill men are holding off. Some hope to see some offerings in order to save the 10 per cent. added to duty after one year's storage in the bonded warehouses, but the holders can easily afford to pay this, and will. There are parties offering \$28 for tees here; \$29.25 for doubles were offered and refused for 1,000 tons this morning.

Scrap—Scrap is still firm at \$31 for selected. Fair No. 1, \$30; No. 2 wrought pipe, \$23. To-day 500 tons were shipped to Pittsburgh. Stove plate, \$18.50 offered and refused; \$17 asked. Much more could be sold, but delivery is expensive.

Tin—Bancas, 24c; Straits, 20c; Australian, 20c; Enallish, 20c; market opened active.

Tin Plate—I. C. 13x14 and 14x20, \$26@26 1/2; I. C. charcoal terne, 14x20, \$5.50@5.75; coke terne \$5@5.25; I. C. 20x29 terne, best charcoal, \$11.75; coke, \$10.75.

Spelter—5 1/2.
Pig Lead—\$1@5 1/2.
Ingot Copper—15 1/2.

New York.

Pig Iron—American. The market has been without positive change in any respect, the volume of business proving to be all that could reasonably be looked for, while prices are steadily maintained throughout. Buyers seem very cautious in their movements, and, while the difficulties attending transportation unquestionably retard business somewhat, it is not wholly probable that purchases would be on a very extensive scale under the most favorable circumstances. Nearly all reports coming direct from the furnaces indicate that the basis of \$28 for No. 1 X foundry, delivered at Perth Amboy, is bottom price, and there are dealers here who allege there is nothing to be had at less than \$28@28.50. Among the commission men it is asserted that more stock can be secured at \$25 than there appears to be buyers for. This price, they state will secure primo Lehigh brands, while a few lots of some inferior product, it is said, can be procured at \$24.50. In explanation of these differences it can be said with fairness that the commission men in question have no axes to grind, while on the other hand most of the dealers and makers show a disposition to slightly exaggerate when it is apparently to their interest to do so. Among sales reported beyond the ordinary small parcels, there are 2,300 tons No. 1 X foundry and 5,000 tons gray forge, mostly for delivery during the next three months. Current quotations are \$25@26 for No. 1 X foundry, \$22@23 for No. 2 X foundry, and \$20@22 for gray forge.

Scotch—Beyond a few small lots from store, aggregating probably 500 tons, there has been no business of importance. The importations are running light, however, and prices seem to hold steady, despite somewhat unfavorable advice from abroad. Store prices are about \$22.50 for Eglinton, \$23.50 for Glengarnock, \$24 for Gartsherric, and \$24.50@25 for Coltness.

English—No transactions of importance come to notice, and there is almost an absence of demand as well. In the absence of business, about \$19 for No. 3 Middlesboro' and \$27 for Bessemer, is quoted by holders.

Old Rails—The demand has been moderate and sales few, but it does not appear that there is much yielding in prices. About \$28.50 for T's and \$30 for D.H. are the general quotations. A lot of 1,500 tons

was sold at the price quoted—by one who had been sold at \$23 to 24 cents at Philadelphia.

Scrap Iron—A few small lots of No. 1 Bessemer \$29.00 covers about all the business reported. The available quantities are not abundant however, and that reason rubs quite firm in value.

Rails—Sales of about 15,000 tons steel rails, tons from have been reported, with partial orders at prices withheld. The demand is still reported active and strong in tone at \$30 for steel and \$28 for heavy section iron at mill.

Tin—In tin there has been no improvement of importance, and prices remain without change. Quotations are 3 1/2 spot for Straits; 2 1/2 for Assam; 2 1/2 for Billiton; 2 1/2 for English L. & F. for English reduced, and 2 1/2 for Banca. Tin is selling somewhat better for future delivery at 3 1/2 prices. There is, however, but a moderate amount of stock from store. Quotations are as follows: 1st charcoal, third cross assortment, \$7.50@7.75; Alloway grade, and \$6.12 1/2@6.25 for Michigan coke tin at \$4.75@5 for B. V. grade, and \$5.12 1/2 for Yallity grade, charcoal terne at \$5.12 1/2@5.25 for 20 Alloway grade; and \$11 for 20x28 do., and \$10.75 for \$1.75@5 for 14x20 Glais grade and \$10.75@10.88 do. all round lots.

Copper—Lake Ingot remains quite firm at 10 1/2, is selling only in a jobbing way. Manufacture is as follows: Braziers' copper, over 16 oz. per sq. ft., 28c; do. 12 oz. to 16 oz., 30c; do. 10 oz. to 12 oz., 32c; do. lighter than 10 oz., 34c; circles, segment of pattern sheets less than 8 1/2 in. diameter, 31c; over 8 1/2 in., 31c; locomotive fire-box sheets, 31c; sheeting copper over 12 oz. per sq. ft., 26c; do. 10 oz., 28c; copper bottoms, 31c.

Lead there have been sales of probably 350 tons, 5 cents for common and 6 1/2 cents for refined, and the market holds steady. Manufactured lead quoted as follows: Bar, 6c; pipe, 6 1/2c; sheet, 7c—less 1 1/2 cent discount to the trade—and thin-lined pipe, 7c; shot, 7 1/2c for drop, 8c for buck, and 8 1/2c for chilled—less 1 per cent discount to the trade for small lots, and for large lots 4 per cent.

Spelter—Common domestic is quoted at 10 1/2, and Silesian at 8 1/2@8 3/4, with the market firm and moderately active.

Antimony—A moderate jobbing business at 11 1/2, as to brand.

THE BRITISH IRON TRADE.

Messrs. James Watson & Co. give particulars of Scotch pig iron exports during 1880 and other details.

Exports, shipments and railway deliveries show an increase of 107,000 tons as compared with last year. There have been shipped coastwise, 200,000 tons, as against 200,133 tons in 1879, and 161,620 tons in 1878. Foreign 440,200 tons, as against 347,000 tons in 1879, and 233,908 tons in 1878. The foreign shipments have been to the following countries:—

Table with columns for country (France, Germany, Austria and Holland, Belgium, Denmark, Sweden and Norway, Russia, Spain and Portugal, Italy, United States, British America, East India, China, Australia, New Zealand, South America, etc.) and tons.

In consumption here, we have a gratifying increase of 82,000 Scotch and 20,000 tons of English pig iron. Foundries have taken 189,000 tons Scotch and 212,000 tons English, as against 153,000 tons Scotch, and 27,000 tons English in 1879. Malleable and steel works have taken 195,000 tons Scotch, and 123,000 tons English, as against 147,000 tons Scotch and 93,000 tons English, in 1879. The production of manufactured iron and steel has been 392,000 tons. As a shipbuilding this important branch has been particularly active, and the prospects are of the brightest for next year, more vessels being contracted for now than at any similar period. This is undoubtedly the most satisfactory feature of the iron trade at the present time. There were built in 1880 about 218 iron and steel vessels of about 741,668 tons, against 177,180,578 tons in 1879, and 248 of 214,375 tons in 1878. And there are now building 180 iron and steel vessels of about 318,789 tons, against 148 of 208,601 tons in 1879, and 71 of 97,760 tons in 1878.

ENGLISH STEEL PRODUCTION.

Iron, in an elaborate article on the English steel trade, makes the following estimate of the steel production of Bessemer and open-hearth steel for the year 1880:—

Table with columns for location (Sheffield, South Wales, Lancashire and Cumberland, Cleveland, Staffordshire) and production in tons.

In the course of its argument it contrasts the fact that the 114 converters in England possess such a small capacity, when that of the American works is so great. The following passage will seem curious in view of the fact that our works have reached a production of 3,000 tons per pair of converters per week. A few years ago, in the last burst of prosperity, the American steel manufacturers were considered to be working with a kind of miraculous power when they turned out 500 tons of ingots per week out of a pair of vessels. Now that rate is common enough in this country in times when there is no pressing inducement to increase speed.

The Irish Land Bill is not likely to be introduced in Parliament before March. One part of it will deal with the interests of occupying tenants and the other will facilitate the purchase by tenants of their holdings. The Arms Bill will provide for the searching of premises and persons for arms.

It is announced that a new bank called the United States Bank will soon begin business in New York, under the management of Mr. Logan C. Murray, who has resigned his position of President of the Kentucky National Bank of Louisville for the purpose. The President of the new bank will be Mr. Victor Newcomb, of Louisville. General Grant, Mr. Logan C. Murray, Mr. W. R. Travers and Mr. H. A. Newcomb are among the proposed incorporators. The capital will be \$400,000, with a privilege of increasing to \$500,000. It is reported that the new bank will be supported by many prominent capitalists and a number of Southern corporations, including the Louisville & Nashville Railway, and the Consolidated Telegraph Company.

STEEL SLEEPERS

importance often than new markets are... And when the description of the manufacture is also a raw material which consists of the leading industries of any kingdom...

A CONJURER'S REMARKABLE DISEASES

Mr. M. Harts, the conjurer, has just recovered from a disease which for three years and eight months rendered him helpless, and part of the time speechless and blind.

him whenever he appeared to sleep. This occurred only a few days. His beard grew to a length of 12 inches and his hair reached to his shoulders.

SEWAGE AND RULES FOR PUBLIC BUILDINGS

The following rules, to be observed in the construction of all buildings erected under Her Majesty's Office of Works, have been prepared and issued by the Secretary of the Office of Works.

SOME CURIOUS FACTS

The Desert of Sahara covers an area of about 3,000,000 square miles. A coal-black negro in Georgia has one white hand and arm.

Fernando Wood is dead.

Havana is very unhealthy again. The death-rate last year amounted to 40 in 1,000. It will doubtless raise a heavy crop of yellow fever this year.

The Grand Junction Railway Company is applying to the Local Legislature for a charter to enable it to extend its line from Tweed eastward to Perth.

There was quite a sensation caused by the employees of the reeling room in the Dundas cotton mill stopping work recently. The strike was caused by the foreman of that room, Mr. Yates, receiving notice of dismissal, and those under him, numbering upwards of thirty-five, would not resume work under a new foreman.

Table with 2 columns: Location and Amount. Total grants: 154,000,000.

POSTAL TIME-TABLES.



Post Office, Ottawa. ARRIVAL AND DEPARTURE OF MAILED.

Table with columns: Mail, Class, Delivered. Lists various mail services and their delivery times.

Registered matter must be posted half an hour previously. Office hours from 9 a.m. to 8 p.m.

Post Office, Montreal.

MONTEAL, July 5, 1880.

Table with columns: DELIVERY, MAILS, CLOSING. Lists mail services and closing times.

ONTARIO & WESTERN PROVINCES. Ottawa by railway. Provinces of Ontario, Manitoba & British Columbia.

QUEBEC & EASTERN PROVINCES. Quebec, Three Rivers, Sherbrooke and Sorel, by Q.M.O. & R.

LOCAL MAILES. Beauport, Contrecoeur, Yvernes and Vercheres. Cote St. Paul.

UNITED STATES. Boston and New England States, except Maine. New York and Southern States.

GREAT BRITAIN, ETC. By Canadian Line (Friday). By Canadian Line (Supplementary-Saturday).

WEST INDIES. Letters, etc., prepared in New York are forwarded daily on New York, where mails are despatched.

Postal Carriage open till 4.45 a.m. and 9.15 p.m. The Street Boxes are visited at 9.15 a.m., 12.30, 5.30 and 7.30 p.m.

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

TO MALTSTERS.

THIS undersigned beg to inform maltsters and the trade in that, having lately added new and powerful steam machinery for the special purpose of boiling extra strong STEEL WIRE CLOTH for malt and drying kiln floors, are now prepared to quote prices for the above goods.

TIMOTHY GREENING & SONS, DUNDAS, ONT.

RAILWAY TIME TABLES.



Canada Central Railway CHANGE OF TIES.

On and after MONDAY, 22nd JUNE, trains will run as follows: Western Express - To and from Toronto and all points West, via the Grand Trunk Railway.

ST. LAWRENCE AND OTTAWA RAILWAY.

On and after THURSDAY, 10th JUNE, 1880, trains will run as follows: LEAVE OTTAWA. For the East, West, South and South-East 11.15 a.m.

ARRIVING IN OTTAWA. From both East and West 6.00 a.m. From the East, South and South-East 4.00 p.m.

Safe Connections with Grand Trunk Trains to and from both East and West, and with those of the Rome, Watertown & Genesee, the Champlain and Adirondack, the Black River, and all points South and East.

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 services between Montreal and Quebec.

Local trains between Hull and Aylmer. Leave Hull for Aylmer 7.15 a.m. and 1.15 p.m.

INTERCOLONIAL RAILWAY. SUMMER ARRANGEMENTS, commencing 14th June, 1880.

Through Express Passenger Trains run daily (except Sunday) as follows: Leave Point Levesque 7.30 a.m. Arrive Trois Pivots 1.00 p.m.

DUNDAS FOUNDRY AND ENGINE WORKS. ESTABLISHED 1828.

THOS. WILSON, MANUFACTURER OF STEAM ENGINES, BOILERS AND ALL KINDS OF MACHINERY.

TO LUMBERMEN. The undersigned is prepared to quote prices to Lumbermen for shanty and all other descriptions of Blankets.

ARTHUR TOOMEY BLANKET MILLS NAPANEE

PETROLEUM.

THE PETROLIA MARKET

The Petrolia Market contains the following... The demand is steady, prices ranging from \$1.15 to \$1.55. Very few sales have been made during the past week.

California is counting largely on the future of her petroleum trade... There are at present 22 wells in the State, which yield about 400 barrels of oil a day.

OIL IN RUSSIA.

Russia is likely soon to deprive this country of one of its staple monopolies. A year or two ago one of our observing Consuls in Germany noted the fact that Russian petroleum was beginning to appear in the western markets of Europe.

THE EARTH'S POPULATION

Behm and Wagner, in the last edition of their book on the population of the earth, estimate the entire population of the inhabited globe at 1,456,000,000 persons.

Four convicts escaped from Kingston Penitentiary on Sunday evening. All of them have been caught. The first annual meeting of the Lawlor manufacturing Company was held at their new store, 374 Notre Dame street, on the 8th inst.

THE MONEY MARKET.

TORONTO STOCK REPORT

Table with columns: BANKS, DEBENTURES, INTEREST PAYABLE, WHEN PAYABLE, and various stock prices. Includes entries for Dominion Government stock, County (Ontario), and various banks.

MONTRÉAL STOCK REPORT.

Table with columns: NAME, Shares, Capital subscribed, Capital paid-up, Rest, Dividend last 6 Months, Closing Prices Feb. 9. Lists various Montreal stocks like British North America, Canadian Bank of Commerce, etc.

LIABILITY FOR FALSE STATEMENTS MADE TO MERCANTILE AGENCIES.

The New York Court of Appeals, in the case of Eaton, Cole & Burnham Company v. Avery, says the Tobacco Leaf, have just made a decision of great importance to the subscribers of Mercantile Agencies.

Defendant knew that Dun, Barlow & Co were a Mercantile Agency, whose business it was to give information as to the standing and means of dealers, and that it was reported to by merchants to obtain such information.

It is said the Grand Trunk lost \$30,000 by the collision at Prescott Junction on Friday last. The principal damage was done to the engine and cars.

A Washington despatch contains the following preliminary exhibit of re-insulating bonded indebtedness of the 300 cities and towns of the United States containing a population of 7,500 and upwards.

The President of the Orange Free State telegraphs that he has sent Lord Kimberley's despatch regarding the terms of settlement to the Boers. The Standard believes the conditions which the Government decided to offer the Boers include complete local independence.

McLeod Stewart, Vice-Consul, has received a letter from Consul Bentley, of Brazil, stating that he had succeeded in the organization of a joint stock company to run a line of steamers between Brazil and Halifax.

DOMINION TRADE REGISTER

INDUSTRIAL DIRECTORY

- AGRICULTURAL IMPLEMENTS: A. S. WHITING MANUFACTURING CO.
COTTON MILLS: DUNDAS COTTON MILLS CO., Hamilton.
ENGINES AND BOILERS: O. C. MORRISON, Hamilton.
FURNITURE: OSHAWA CABINET CO., Oshawa.
GLASSWARE: HAMILTON GLASS CO., Hamilton.
IRON WORKS: CANADA SCREW CO., Dundas.
KNITTING MILLS: S. LENNARD & SONS, Dundas.
LEATHER BELTING: DOMINION BELT AND HOSE CO., Toronto.
MACHINE BUILDERS: DANIEL BELL & CO., Toronto.
PAPER MANUFACTURERS: CANADA PAPER CO. (Limited), 374 375 & 376 St. Paul.
SAW MANUFACTURERS: R. H. SMITH & CO., St. Catharines.
SPICES, ETC.: R. D. VAN DE CARR & SON, Toronto.
STEENOTYPERS, ENGRAVERS, ETC.: F. DIVER & CO., Toronto.
TELEPHONES: HOLT TELEPHONE CO., Toronto.
WIRE WORKS: B. GREENING & CO., Hamilton.
WOODEN GOODS: C. T. BRANDON & CO., Toronto.
WOOLLEN MANUFACTURERS: JOHN WARDLAW, Galt, Ont.



—Maine has built an average of over 10,000 tons of shipping per annum for the past six or eight years and yet a contemporary refers to it as a shipbuilding State which builds no ships.
—The Bill for the better protection of railroad employes, introduced by Mr. Frater, provides for a clear space of seven feet from the top of a freight car to the lowest section of overhead bridges for the impingement of the running boards on the top of freight cars, and for the filling in of frog, wing, rail and guard rails.
—It is not unlikely that the Pullman Palace Car Company will be forced, in face of the efforts being made in some of the States, to reduce their exorbitant rates of fare. A Bill has been introduced in the Illinois Legislature to compel the company to come down in their fares, as far as that State is concerned, and some of the Chicago papers aver that it will certainly pass.
—The Deputy Sheriff of Ottawa county, who went up the Galtineau to serve writs in Lowe township, the Creek settlement, where the people refuse to pay taxes, was mobbed by the settlers who are all Irishmen and compelled to cut and swallow the writs, after which he was let go. The Sheriff now wants an armed force from the Dominion to compel the service of the writs.

THE DRY GOODS TRADE.

NEW YORK ADVICES.

The market is not particularly active as it relates to the business in cotton fabrics. The distribution is slow from agents on account of previous orders which exhaust supplies of desirable makes as fast as received. In the lower grades of plain and colored goods the market is not so closely sold up as in the finer qualities. The lighter fabrics of brown cottons are increasingly sought in the first hands, as well as the lower grades in bleached goods. In silicas, wigans, flannels and other styles of tailoring goods, in the lower grades especially, there is not much activity. The finer qualities are in better movement. Painted cottons, including prints, shirtings, pique, cords, etc., continue in fair distribution, and in gluing especially the market is very active, with all the leading staple styles sold up and the supply for short of the demand. In addition to their regular piece distribution, have been transacting a larger piece business than usual in broads that agents could not promptly supply to out-of-town buyers for immediate wants. As the piece distribution is somewhat backward, jobbers feel disposed to reduce some of their holdings to the larger trade, who are willing to take the goods freely at a shade under agents' quotations. Prices on cotton goods are strong and firm in first hands and corporation makes are in too short supply for any weakening of quotations. Colored goods, including corset jeans, cambrics, tickings, chevrons and osenburses, are in moderate movement at current values. It is well to bear in mind the supply of cotton fabrics is largely diminished in all markets as compared with a year ago, and though jobbers have fair stocks with which to meet present limited demands, they are not large enough to stand two weeks' active distribution without frequent replenishing. A large spring trade is near at hand, and with supplies not abundant, it is probable values will remain firm and steady for some time to come. The cotton market opened on Saturday quiet and low for spots, and has continued in this way ever since the operations of the week being chiefly on spinners account. For future delivery, Saturday's sales reached 119,960 bales, closing 15 points lower. On Monday the sales footed up only 110,200 bales, closing barely steady at a slight advance. Tuesday's sales amounted to 107,500 bales, without any change in prices worthy of note. On Wednesday the business done was light, the sales only footing up 79,300 bales, at an advance of 4 to 6 points. On Thursday the market continued quiet and prices fell off 1 to 2 points. At today's market the sale only reached 89,900 bales, closing barely steady at an advance of 2 to 3 points higher, the closing rates being—February, 11 21/4; March, 11 35/4; April, 11 59/4; May, 11 63/4; June, 11 78/4; July, 11 86; August, 11 90; September, 11 47/4; October, 10 98; November, 10 83.

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EVENTFUL CAREER OF AN OCEAN LINER.

The steamer *Dalmeida*, one of the vessels of the once famous Collins' line between Liverpool and America, has just been ordered to be broken up. This intelligence will bring to many minds a recollection of the vicissitudes which the line suffered, and which culminated in its total collapse. The first steamer of the fleet, the *Atlantic*, sailed from New York—at which port all were constructed—on her maiden voyage for Liverpool, on the 27th April, 1840, and reached the Mersey on the 10th May—having thus occupied thirteen days on the voyage, two of which, however, were devoted to the repairs of damage to the machinery. The other steamers were the *Arctic*, the *Pacific*, the *Arctic*, and the *Baltic*, all being of about 2800 tons capacity. For six years, notwithstanding high rates of freight and a considerable Government subsidy, the line was carried on at a loss. In 1852 the *Arctic* made the passage between New York and Liverpool in 9 days and 17 hours, but she afterwards ran into by a French vessel, and but few of her passengers were saved. The fate of the *Pacific* has remained wrapped in mystery. She sailed from Liverpool, and was never afterwards heard of. These events, coupled with the vigorous competition of English lines, particularly the Cunard, caused public patronage to be largely diverted from the Collins vessels, and the *Atlantic* was laid up. She was subsequently converted into a sailing ship, and her existence closed last year, when she was broken up at New York. The *Arctic*, which was at one time regarded as the crack vessel of the fleet, was sold to a Galway company, and is now used as a coal hulk by an English company at the Western Islands. The *Baltic* was chartered by the American Government during the Civil War as a supply ship, and afterwards she was sold, and her machinery having been taken out, she was employed to carry grain from San Francisco to Liverpool. On a recent voyage the *Baltic* was so strained as to be rendered unseaworthy, and hence has been condemned.

THE USES OF GOLD AND SILVER.

It has been ascertained at the Mint Bureau at Washington that the mines of the United States have produced during the last seven years about \$280,000,000 of gold and \$27,500,000 of silver, an average production during that time of \$40,000,000 of gold and \$3,928,571 of silver per annum. Of this production about 95 per cent of the gold and 60 per cent of the silver found its way to the Mints and Assay offices to be converted into coin or bars. The Assay office at New York reports that during the last seven years an average of \$33,333 in gold and \$3,500,000 in silver has been paid in fine bars to manufacturers or dealers supplying them with the precious metals. These figures are merely approximate, and are much below the actual amount employed. In order to obtain more accurate information relative to the final disposition of the domestic production, the Director of the Mint has endeavored to ascertain the amounts consumed in the arts and manufactures from the manufacturers themselves, and in his report for 1879 a table was published exhibiting the results of his attempt. This, though incomplete, was very satisfactory to the Director, and led him to continue his investigations. He subsequently mailed upward of 7300 circulars to all the manufacturers of jewelry, plate, foil, chemicals and other consuming gold and silver. Many failed to reply, probably through indifference or from a desire not to disclose, even confidentially, the details of their business. It is believed, however, that the total returns approximate the actual amounts so used nearer than any former estimate has. The total amounts reported were about \$8,500,000 in gold and \$3,500,000 in silver. Nearly \$2,500,000 of the gold was United States coin, while only \$500,000 was in silver coin. This small amount of silver coin used, in proportion to the gold, which is probably somewhat understated, is accounted for by the fact that the intrinsic value of United States silver coin is nearly 10 per cent less than its face value, while gold is the same in bullion or coin. The manufacturers reported a consumption of about

\$2,500,000 in fine gold bars and nearly \$2,500,000 in silver bars and over \$1,000,000 in gold and nearly \$1,000,000 in silver of old articles and foreign coin. Of these expenditures in gold 85 per cent was manufactured in jewelry and watches, 5 per cent watch cases, 2 per cent gold leaf and plated ware, and 3 per cent chemicals and sundry and other implements. Of silver 27 per cent was used for watches and jewelry, 22 per cent for watch cases, 17 per cent for leaf and plated ware, and 4 per cent for chemicals and instruments. In watches and jewelry, 172 makers reported having manufactured and consumed in United States gold coin \$2,000,000 and nearly \$1,000,000 in bars more than \$2,000,000 in foreign gold, and old manufactured articles \$1,000,000 of United States silver coin, \$177,000 in silver bars, and \$77,000 in old articles making a total of gold and silver of nearly \$7,000,000. The Director of the Mint, from special considerations of all the data at his command, estimates that the amount of domestic bullion used in the arts and manufactures during the last fiscal year was about \$2,500,000 of gold and \$2,500,000 of silver, and that the total consumption in all forms was about \$1,000,000 in gold and \$5,000,000 in silver.—Exchange.

SCIENCE NOTES.

Concerning the cause of London fogs it is now suggested that they are largely due to the burning of sulphur, 200 tons of this substance being daily burned in London. A new island, 150 feet in diameter, is reported to have lately risen in the sea of Azou. Its appearance was accompanied by a marine eruption. The inquiries of Prof. Cohn, of Breslau, indicate that shortsightedness is rarely or never born with those subject to it, and that it is almost always the result of strains sustained by the eye during study in early youth. The force exerted by the discharge of heavy gun is something tremendous. In some recent experiments at Woolwich it was estimated that the pressure upon the base of the gun at the moment of the explosion was more than sixty tons per square inch. Even so inflammable a material as cotton can now be used for the construction of fireproof buildings. It is converted into a paste—by chemical treatment—which becomes as hard as stone. It is moulded into large slabs, and designated as architectural cotton. One of Edison's inventions, in connection with his system of electric lighting, is the *Wattmeter*. This is an instrument for measuring the amount of electricity flowing through a circuit, or, in other words, a meter for electric currents to tell the number of wabers that have been supplied. M. Colladon has found that any tall tree may serve as a lightning-conductor to protect a house, provided its roots enter damp soil. In the case, however, where the house stands between the tree and a pond or stream of water, the shortest path for the lightning from the tree to the liquid conductor may be through the tree. A Hungarian chemist has lately shown some surprising experiments in Paris with a new light-giving substance which burns with so little heat that its flame will not set fire to a handkerchief, carpet or other fabric with which it may come in contact. A person may hold the burning liquid in his hands without injury. This new illuminating fluid is prepared from petroleum. Prof. Perosino and Dr. Sicht, who have both experimented upon the principle of the transmission by telegraphic wires of the forms and colors of objects in the same way that sounds are transmitted by telephone, hope to ultimately succeed in contriving an apparatus by which two persons who are separated by an ocean will be able both to hear and see each other. Atmospheric pressure has a very decided influence upon the melting point of various substances. Under ordinary circumstances ice melts at thirty-two degrees Fahrenheit, but in some recent experiments Dr. Carnelly is said to have heated it in a vacuum to 350 degrees before it became liquefied. At a much lower temperature the ice rapidly disappeared, however, passing directly from a solid state to that of vapor. At the castle of Simonetta, about twenty miles from Milan, a surprising echo is produced between the two wings of the building. The report of a pistol is repeated by this echo sixty times, and Addison, who visited the place on a somewhat foggy day, when the air was unfavorable to the experiment, counted fifty-six repetitions. It is stated that the sound of one musical instrument in this place resembles a great number playing in concert. White light being the sum total of the various colors, it has been generally believed by physicists that the sensation of white light is simply the sum total of the sensations of its constituent colors. On the ground that the sensitiveness of the eye for white light may be increased—as, for instance, by the previous absence of all light—without the sensitiveness for color being increased, Prof. Charpentier urges the novel theory that this is a color sense as distinct from that of light as is the sense of touch from the sense of heat. Oak is stronger than iron, both pieces being of equal weight. Skin cleanliness has a great effect upon the assimilation of food. Aqua fortis is a distillation of two parts of saltpetre and one of copperas. Iron plate has been rolled in England of twenty-four inches in thickness. Sulphurous acid, procured by burning sulphur, is the best of all disinfectants. American iron is considered better material for car-wheels than Scotch or English. The water in the Straits of Gibraltar, at the depth of 670 fathoms, is four times as salt as at the surface. In Glasgow, Scotland, one tolling factory uses up six thousand tons of seaweed every year to produce this chemical. Glass can be readily and neatly drilled with a small drill, operated by a bow, and kept moist with spirits of turpentine. We see it stated by a medical writer that camphor is an unfailing specific or antidote for strychnine in the most extreme cases. Corn cobs yield twice as much potash as the best specimens of woods; 114,000,000 pounds of potash might be made from our annual corn crop. The moon, though apparently as large as the sun, is in reality the smallest heavenly body visible to the unaided eye. Her diameter is 2,164 miles. There is a latent heat in everything, even in ice. Water is cold, and sulphuric acid is cold, but if these two cold liquids be mixed together they will at once produce heat. Stove lustre, when mixed with turpentine and applied in the usual manner, is blacker, more glossy and durable than if put on with any other liquid. The

lustrating prevents rust, and when put on an old rusty stove will make it look as well as new. The secret of the turpentine process is quickly explained. Speaking in a recent lecture, of Her Majesty's delivery that the sun is rapidly moving towards a point in the constellation Hercules, Prof. Hall, the Astronomer Royal for Ireland, told his audience that at the end of the lecture they would be given miles nearer to it than they were at the beginning. A new theory of the cause of earthquakes has been propounded by Dr. Novak, of Perth. He considers that besides the rotation of the earth on its axis and its revolution around the sun, a multiplicity of motions of the earth appear in space, in virtue of which the earth's axis, and with it the equator, shift their position. This causes a variation of the forces (centrifugal and centrifugal) influencing the earth's form, and the earth's crust has a tendency to adapt itself to this change. The Royal Engineers have tried the effect of gun cotton in brining down two old chimneys at the Dockyard Extension Works, Chatham, England. The first was demolished by placing a nucleus of gun cotton inside the chimney, the total charge consisting of about four and a half pounds. The second was destroyed by placing six charges of the explosive in the centre of the base of the chimney, the total charge weighing 23 ounces. The experiment was very successful. At the instant the electric spark ignited the gun cotton, the chimneys became wrecked. Dr. C. W. Siemens, the well known electrician, does not agree with Mr. W. H. Preece, that electric light generally, and under ordinary circumstances, is an illuminant dangerous to life and property. He assents to the proposition that the electric light is really the greatest source of heat which science possesses, but says this fact does not justify the inference that, because the electric light is hot, it must necessarily heat rooms in which it is employed to anything like the same extent as gas. According to his figures, the heat developed by the electric arc is rather less than one per cent of that which would proceed from gas allowing the same illumination. A remarkable bed of kaolin, covering an area of eighty acres and of a considerable depth has been discovered near Bramond, Tex. A factory for the manufacture of the article into porcelain ware has been established at New Orleans and it is said is turning out work equal to that made from imported kaolin, and which will compare favorably with ware made in Europe and other foreign countries. The laboratory for the Johns Hopkins zoological investigations, established at Beaufort, North Carolina, some three years ago, has proved a most useful one. Some especially valuable results in the examination of crustacea have been obtained. Four hundred and eight species of animals have been found in that locality, which is pronounced an excellent one for scientific study. A strange and rare phenomenon of an inverted rainbow was observed at Innsbruck on November 25 last. For some thirty minutes the end points of the semi-circle, centre of which was the sun, rose and moved westward with the latter, the remarkable spectacle then vanishing. No satisfactory theory has as yet been given explanatory of the cause of the phenomenon. A new comet, a remarkably large one, was discovered by Perseus at Copenhagen, Denmark, on the 16th of December last, in right ascension 18 hours, 45 minutes, north declination 10 degrees, 35 minutes. Its motion is north-east, something more than one degree daily, and can be seen with an ordinary telescope quite plainly, but will probably not be visible to the naked eye. The manufacture of glass cloth is becoming a profitable industry at Pittsburg, Pa. The thread, which is made any desired color with minerals when the glass is originally melted, is drawn out of a molten tar by means of a rapidly revolving wheel at the rate of 2,000 yards a minute. The weaving is done about the same as with silk on looms. The almanac is a new invention for the determination of time and latitude. The instrument is said to be superior to the transit instrument in calculating the correct time, and is much more simple in its construction and workings, combining as it does a time and latitude instrument in one. The outside fibre of the cocoon net is being manufactured extensively for shoe-holes, and is said to be a most excellent substitute for leather. In fact, its wearing qualities are said to be superior to that of leather, and is much cheaper. The monograph is a new invention by M. Rivier, of Marseilles, France, for popularizing astronomical knowledge. The instrument is mounted upon a monument from ten to fifteen feet high in some public place, and consists of a vertical circle, the plane of the meridian; a rod directed toward the North star, showing the position of the earth's axis; a circle placed at right angles to the first, indicating the plane of the equator, etc., etc. Useful astronomical facts and data are engraved on the pedestal, and inscriptions in relief show the names of the various portions of the instrument, from which much can be learned by all who may give it their attention. Several of these instruments have already been erected in the towns and cities of France. Some of the more scientific physicians of the land have of late produced wonderful results in their experiments in artificial respiration. Prof. Fort of Paris, recently restored to life a child three years old by practicing artificial respiration on it some four hours, commencing three hours and a half after apparent death. Dr. Fournol, of Lillebonne, is reported having reanimated a nearly drowned person after four hours of artificial respiration. The person had been in the water ten minutes, the doctor having been called in one hour after apnoea. Numerous other cases similar to these have been reported, proving the new theory a practical one beyond question. The various urban sanitary authorities of England and Wales have expended no less an amount than \$25,000,000 during the last five years in works of a sanitary nature, and judging from the steadily decreasing death-rate of the period, it is implied that the large sum has been judiciously laid out. The example is one that might well be followed, and that with profit by many localities of this country. It has recently been fully and satisfactorily demonstrated that fire and waterproof houses can be built out of cotton and straw. The cotton used is the refuse of the plantations and factories, and when ground up in about an equal amount of straw and asbestos, is converted into a paste and subsequently into large slabs or bricks, which become as hard as stone. The article thus made is pronounced the best of architectural material, and will be much used. Joseph Albert, the renowned Munich photographer, has invented a new process by which it is said that he is enabled to produce pictures of persons and objects with the finest shades of their natural color.

The Manufacturing Industries of Galt.

In last week's issue I noticed briefly the industries of St. Catharines and Niagara, and this week present to the reader the industries of Galt, a town celebrated for its manufactures...

owned by Messrs. Goldie & McCulloch, and which is considered the largest industry in the town. This firm manufactures wood-working machinery, grist, flour, saw and woolen mill machinery, turbines, water-wheels, engines, boilers, etc.

of which Messrs. Shurly & Dietrich are the proprietors. This firm gave employment to between 40 and 50 hands. The main building is 105x40 ft., 2 stories high, with a wing 40x50.

in which Messrs. Cowan & Co. carry on the manufacture of wood working machinery, engines, boilers, etc. It is situated on the other side of the river, and the machinery is driven by water power.

of Messrs. Cant, Conroy & Co. are situated alongside the Wellington, Grey & Bruce branch of the O. W. R. The factory, which is run by steam, is a very fine one of modern appearance, being only built about five years ago.

are a new firm, which started in business about a year since. They manufacture all descriptions of iron and brass castings, but give their special attention to iron pumps of every description.

of Messrs. Warnock & Co. is a large establishment, the machinery of which is principally run by water power, but in case of insufficient supply, a 60 horse-power engine is in reserve.

manufacturing all descriptions of fingering and knitting yarns. The machinery in this mill is of English make, and similar to that in use in the Baldwin Works, Halifax, England.

are engaged in another branch of the woollen industry, manufacturing all descriptions of tweeds, etc., etc. This firm were formerly located in Whitby, but on being burned out about three years ago, they removed to Galt.

of Mr. C. Turnbull, manufactures all kinds of full finished underclothing, similar to the Scotch imported goods. The machinery in this factory is run by hand, engaging some 20 hands.

are the proprietors of a glove factory, with a tannery in connection, where they manufacture their own kid, which is worked up in the glove factory.

quality is much better for winter wear. They find their trade rapidly increasing, and making their own leather and selling it to workmen in Galt as well as in the surrounding districts.

has quite an extensive shop for the manufacture of bicycles, wagons, etc. in a large way, and ships his vehicles to all parts of Ontario, and also does a large Manitoba trade.

Are the largest in the town, and are especially well appointed and employ about 20 men. Although usually avoiding any very close inspection into the internal economy of a flour mill, the scrupulous cleanliness apparent on first entering, and the elaborate appearance and perfect arrangement of the machinery on the ground floor, induced me to accept the invitation of Mr. Hume, the proprietor, to take a trip through, and after scrutinizing the appliances from cellar to attic, we emerged almost as free from dust as on entering.

Of Mr. O. Hume, which has a capacity of about 200 barrels per diem. There is a cooper's shop in connection, where the barrels used are made, and the two branches combined employ about 15 hands.

is carried on by Mr. D. Spiers, in a stone building, the machinery of which is run by water power. Oatmeal is specially manufactured here, and a business has been built up with the eastern provinces, besides their usual export trade.

Employ from 25 to 30 hands in the manufacture of boots and shoes, in a wing off the Galt Milling Co. premises, and the business of this concern, which is a young one, is rapidly increasing.

Mr. Richard Blaine, proprietor. This building is of stone, 84 x 42, and 4 stories high. It is equipped with 4 run of stones and all the necessary machinery for a first-class mill, water being the motive power.

There are several other industries here, notably the steam saw mills of Giffholme & Hogg, who are getting out 1,500,000 feet of logs this winter, G. Hespeler's new saw mill, expected to cut 1,750,000 feet, two or three planing mills, two furniture factories, etc., all doing a good local trade, and employing in the aggregate about one hundred hands.

The popularity of Galt as an industrial centre is due both to its water privilege, and, perhaps for a much larger share, to its railway facilities, the Great Western and the Credit Valley roads passing through the town, while the Grand Trunk runs a branch line from Berlin, and which, it is expected, they will extend in the near future to Paris, connecting there with their own line and saving the circuit via Stratford.

THE AGE OF COAL AND IRON.

M. Simolin, the celebrated mining engineer of France, lately gave an interesting lecture on the above subject, by way of inaugurating a diorama produced by the Societe des Panoramas Populaires, illustrating the workings of a colliery. The views pass upwards in representing the descent of the shaft, and then from right to left to show the galleries.

the Pittsburg, Bellair, Pomeroy, etc. All of these in the State are down from the 1870's, and the only one in operation, but only of a small capacity, the remaining 250 being in the hands of the banks, that is, the coal is mined but not used. The beds of iron ore in the coal fields of the State, though much thinner than the coal, are nevertheless as numerous and as valuable as the coal. There are in Ohio 100 blast furnaces, of which over 20 counties, all of which use some of the iron ore altogether for the manufacture of iron. The most famous are known by various names—like the Hanging Rock ore, the Blackband ore, the Kidney ore, the Red ore, etc.

GOLD MINING.

An Improvement in Ore-Dressing Machinery.

It is a well known fact that almost all the precious ores are closely associated with their carrying gangues, except placer mining, where free gold is mixed with earth and gravel, which is worked in the following manner, viz. Long boxes or troughs are made with cross slats nailed on the bottom. These are called riffles; these troughs are set at an inclination. The gravel and sand containing the gold is thrown in at the raised end with a stream of water, which carries the gravel, mud and pebbles down with it. The gold and metallic substance, being heavy, falls to the bottom and is caught by the cross-pieces while the lighter material is swept off by the water, so that at the end of a run all the gold can be collected from the bottom of the flumes.

THE COAL MEASURES OF OHIO.

The coal measures of Ohio spread over an area of upwards of 10,000 square miles, and enclose 20 beds of coal of workable thickness aggregating 75 feet. Every variety of bituminous coal is met in the series, from the ordinary house coal to the finest grades of steam, gas and furnace fuels.

THE COST TO FRANCE OF THE GERMAN WAR. In the second of a series of papers which have been contributed to the Economist Française on the Franco-German war to France, M. de Foville queries into the loss of population caused by the conflict, exclusive of that due to the cessation of hostilities.

THE SPONGE TRADE IN THE BAHAMAS.

In a report to the Secretary of State for the Colonies from the Governor of the Bahamas, which was quoted in the Pharmaceutical Journal, it is stated that various causes combined to make the past year most favorable one to those engaged in this branch of business. A larger number of buyers than usual appeared in the market, and there was no period when it could be said that prices had a downward tendency.

THE SPONGE TRADE IN THE BAHAMAS. THE PROPAGATION OF SPONGES.

Governor Robinson then refers to the statements that have been made by German naturalists as to the possibility of the artificial propagation of sponges, and asks that definite information should be obtained upon the subject and supplied to him. In compliance with this request the Secretary of State appears to have consulted Dr. E. Ray Lankester, who has supplied the following report, which is printed in the blue book:

"In accordance with your request [that I should report to her Majesty's Secretary of State for the Colonies upon the subject of the artificial cultivation of sponges for commercial purposes, I have made inquiries (as I expressed my intention of doing in my report of your letter dated April 26th, 1880) relative to the experiments inaugurated by the Austrian Government. I have received communications on the subject from Professor Oscar Schmidt (now of Strasburg), who has stated the experiments in the Adriatic, and also from Professor Eilhardt Schulze (of Glatz), at present Director of the Zoological Observatory erected by the Austrian Imperial Government at Trieste. I have carefully studied a report by Dr. Emil von Manstein published in the Verhandlungen der k. k. zoologischen botanischen Gesellschaft in Wien, vol. xxviii, 1878, which is based upon official documents prepared by the Austrian Minister of Agriculture, and upon special information supplied by Professor Oscar Schmidt. The experiments in the Adriatic were carried out under the auspices of the government during the years 1872 and 1873, and were finally abandoned in November, 1872, on account of the difficulties which were encountered. It appears that the method of cutting a sponge into small pieces, affixing these pieces to movable supports, and sinking the supports in the water where the sponge naturally occurs, was found to be perfectly successful. The 'cuttings' of sponge attached themselves to the

... and I wished to grow each into a well shaped...

AN ARITHMETICAL PRODIGY

Arithmetic is usually the greatest trial of most children's school life...

...and it is reckoned that 600 of a year is the...

THE PRODUCTS OF FIJI.

When in October 1874 the sovereignty of the 225 islands forming the archipelago of Fiji was...

...and it is reckoned that 600 of a year is the...

EXPLORATIONS IN NORTHERN AUSTRALIA

The recent additions to our knowledge of the exact physical conditions and capabilities...

...plentiful. An island from which the...

EXERCISE AND TEMPERATURE.

These have been made the subject of a series of observations (about 150 in number, extending over four years) by M. Bonnat...

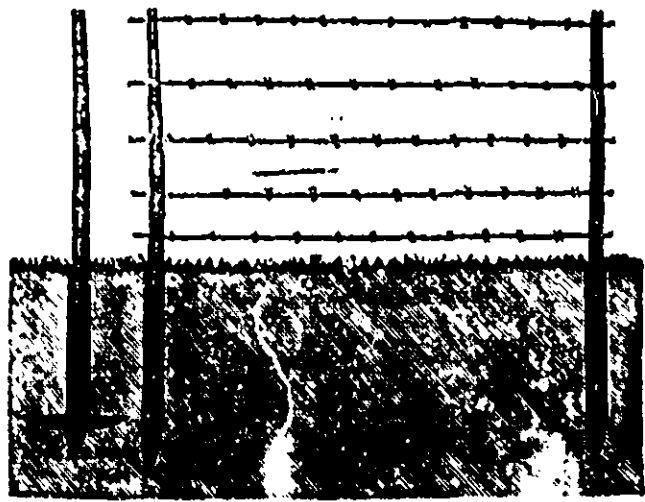
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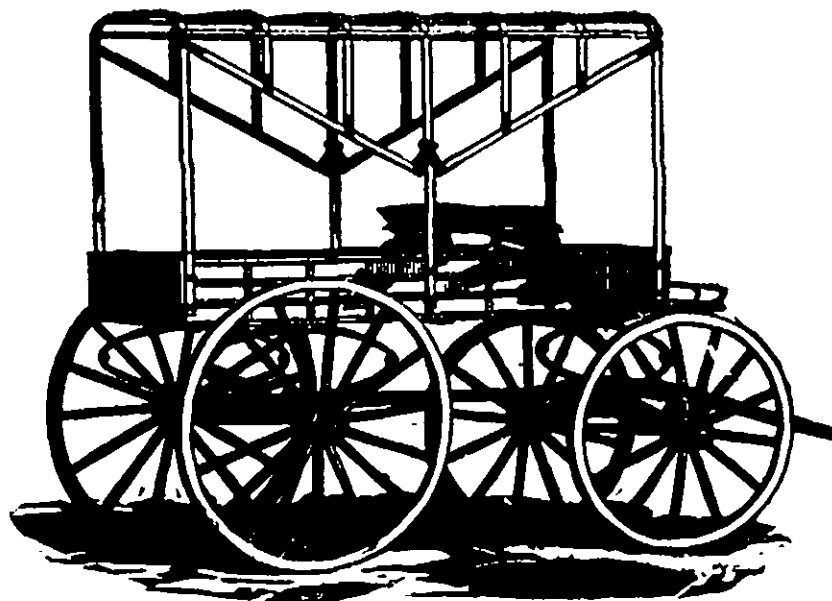
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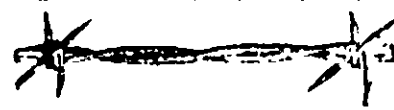
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4th.—The Barbs are fastened to the Wire at intervals of 7 inches, in a manner entirely different from any other, being securely locked around and between both wires, so that they cannot slip or move toward each other, and they also prevent the untwisting of the cable should either wire get broken.

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