

per, for lighthouse purposes, was immensely increased in brilliancy by the adaptation of the parabolic reflector and on this, otherwise called the catoptric system, most of the lights in British waters were until recently constructed. But more than 40 years ago an ingenious Frenchman named Fresnel, conceived the idea of making a light for marine illumination on the dioptric system—that is, by means of lenses. Perhaps Mr. Fresnel borrowed his notion from a very homely source. William Lee is reported to have invented the stocking-loom by watching the knitting-needles flashing to and fro in his sweetheart's fingers; and, perhaps, M. Fresnel had seen those glass globes filled with water which dress-makers place—or used to place before these days of paraffin—between their eyes and the candle. For this is the dioptric system. The discovery was zealously taken up by the French government, and all their new lighthouses were illuminated on this plan. The Dutch and Americans followed their example, and for years the Parisian manufacturers had the monopoly of the dioptric lens trade. At length Messrs. Chance ventured into the field against them, and since 1855 have manufactured 150 of these apparatuses, though totally unsupported by Government aid. They consist of a hollow cylinder built of lenses and prisms, in some case 10 feet high and 6 in diameter and worth from £150 to £2500. They afford a far more brilliant light than the reflectors. The actual lamp is of no great size—a mere speck compared to the coal fire which used to light up the Bell Rock, but perfectly clear at distances where that extravagant medium for warming mariners would have been totally invisible. Among other places Messrs. Chance's dioptric lights may be seen in the Shetland Islands, at Lunenburg, on the north coast of Ireland, at Orme's Head in Wales, and Europa Point, Gibraltar.

(To be Continued.)

THE GUELPH BUTTER TRADE. The figures that we gave last week of the quantity of butter shipped from Guelph in one week, and the amount of money paid for the same, have so far interested a gentleman who deals very largely in the article, that he has taken the trouble to prepare the following statement for us showing the quantity shipped by all the dealers in Guelph during the entire season, together with the gross amount paid for the same.

Quantity shipped by Mr. Jas. T. Brill —			
Sept. 1st,	162 to New York	9288	\$ 1790 00
7th,	100 do	8 54	1456 72
3rd,	130 to Montreal	27494	5 117 13
4th,	210 do	18431	3 33 27
Oct. 5th,	265 do	22000	3749 00
22nd,	200 do	18376	3113 92
29th,	117 do	11076	1882 92
12th,	100 to London	9577	1678 69
Spt 20th,	265 do	26547	4512 99
Oct 12th,	200 do	18441	3143 84
Nv. 10th,	131 to Liverpool	12422	2145 45
21st,	100 do	9455	1685 89
2nd,	22 to Boston	2567	319 64
Brill, total	2142	192553	53755 42
Masse,	1321	11858	1884 90
Lewis,	1100	75900	12751 00
Naughton,	947	75680	12751 00
Poolley,	450	45900	8100 00
Rutherford,	300	30000	5100 00
Perry,	266	22490	4020 84
Wood,	150	13500	2430 00
Total	6876 kegs.	lbs 573981	\$965 4 22

Add to this quantity still held by G. & A. Hadden—150 kegs—say 300 lbs—at the current price, and the total value of butter shipped and to be shipped from our Guelph merchants will amount to about \$98951 22. To this might be added 98 kegs which Mr. Brill has still on hand.—*Guelph Mercury*

FINANCE AND TRADE. The continued shading off in the gold premium, in connection with a certain undefined feeling of distrust of the future, has a most depressing effect in commercial circles. Prices, as a general remark, tend downward, trade halts, and industrial production awaits Congressional action in the hope of obtaining relief from certain deep-seated disorders with which it is popularly believed to be afflicted. Public sentiment is divided as to the cause, or causes, of this commercial torpor and depression, and the correctives suggested are varied and novel. There are numerous advocates for a more rapid treatment of legal tenders than the existing law requires, and such other changes as will be conducive to an early adjustment of the equilibrium between paper money and coin. Some, on the other hand, are confident that a forced contraction of the currency must eventuate in wide-spread commercial disaster, while a third party affect to believe that there can be no relief from the prevailing commercial disorders so long as political parties maintain their present menacing attitude. The uncertainty touching Congressional action the coming Winter, and the line of policy to be adopted by Government regarding the question of National finances, in its multifarious bearings, are undoubtedly the main causes of the present unsatisfactory condition of trade. The people have too long been kept in doubt and suspense as to what principles are to be applied, and what events await them in the future. It is quite time they should be enlightened upon this subject, and that the legislation of the country should commit itself unequivocally to some sound policy, the results of which may be clearly foreseen by business men. Until some definite policy is established, we may expect to witness a continuance

of the same timidity and distrust among operators in all lines of business, that have been such conspicuous features in commercial circles, at times, during the past three or four years. Gold on Thursday touched 155, from which there was a partial reaction yesterday, the closing price being 154. By some, this decline in gold is attributed to the manipulations of speculators, while others contend that it is due to the shadowings of the forthcoming report of the Secretary of the Treasury. But, be this as it may, the abatement, in connection with the monetary pressure, has had a bad effect on the markets. No inconsiderable portion of the merchandise now in first hands was imported when gold was about 20 per cent higher, and as trade has become stagnant, heavy losses must be submitted to on the part of importers. Orders for fresh foreign goods have, in some instances, been countermanded, and the prospective demands for duties are expected to be light.—*Shipping and Commercial List*

THE WOOL TARIFF AGAIN.—It is impossible to say to what extent of blind folly men will run, when led astray by a false idea. In spite of all facts showing the utility of high tariffs upon foreign wool as a means of enhancing the value of the domestic staple, the wool growers have again met in convention to discuss the merits of the wool duties urged upon Congress last session, but not adopted, and the result of their deliberations has been to send a committee to Washington to secure the adoption of the rejected measure upon the statute book. The history of the prices of wool shows that whenever the duties upon foreign wool have been reduced, the price of domestic has declined; and vice versa, that when the duties have been reduced domestic has been highest. We challenge evidence to show that the value of domestic wool has ever been enhanced by increasing the duties upon foreign, and unhesitatingly affirm that such testimony cannot be adduced. The immediate sequence of the regulations adopted at the close of last session, which had the effect of adding 25 per cent. to the duty on wool, has been a depression in the wool trade rarely equalled. It is clearly useless to reason upon this question. The wool growers must be left to the tuition of events. The ultimate failure of their efforts to increase the value of their product by legislation may perhaps let in a little light upon their beguiled theories, but at present they are not fit subjects for rational treatment.—*U. S. Economist*

CROPS IN THE WEST.—We have met and talked with farmers representing nearly the entire corn region affected by frost, and the uniform testimony is that the crop is depreciated fully one-third. Its value, if not the aggregate amount, is so depreciated. Development ceased with the coming of frost. Had the corn been cut up prior to the frost, when in its growing state, and shocked, the result would have been different even with the succeeding wet. For then the juices in the stalks would have been eliminated. But there was not sun enough afterward to do the work which must needs be done in order to give substance to the kernel. Such is the testimony of the farmers.—*Chicago Republican*

OUR GOLD FIELDS.—We have heard it stated, on what must be considered reliable authority, that the McLean claim at Sherbrooke, Guysboro', has this year proved unexpectantly productive. It is understood that the thirty-two shareholders comprising the company have for the nine months, ending in September, netted \$4 each per week clear of all expenses. The same authority also informs that one half of the claim has recently been sold to an American Company for the handsome sum of \$60,000, cash. If this statement be correct, and there is really no reason to doubt its authenticity, the fact speaks volumes in regard to the prospective yield of our gold fields, and is highly encouraging to those who have embarked their capital in digging and delving for the hidden wealth with which Plutus has so richly endowed Nova Scotia. From various sources we learn that other claims in the several gold mining regions, although probably not so fortunate as the McLean Company, are yielding a fair return to their respective proprietors. Be this as it may, it is pretty certain that gold mining will be prosecuted in this Province with renewed vigor during the year upon which we will shortly enter. There is already a large amount of American capital invested in our gold fields, and we may rest assured that the keen, enterprising men who have embarked therein will leave no stone unturned, or means untried, in turning their dollars to account.—*Halifax Citizen*

MORE MANUFACTORIES.—In a little while St. John will have added to her numerous manufactories an establishment for the manufacturing of Paper Collars—an article now very generally in use. The work will be carried on in the Morning Star building, by a Company having a capital of \$100,000. For its market the Company will have France and Great Britain, in which countries we believe patents for the peculiar style of collars about to be made have already been secured, the British North American Colonies, and probably several of the countries in Europe, where arrangements are now being completed for the securing of patent rights. In its membership the Company will comprise an array of American capitalists, who have faith in the success of the undertaking, especially when conducted in a section of country where taxa-

tion is light, trade restrictions few, and facilities for manufacturing easy of access. Several of our own people will also have a share in the undertaking. The Company starts on a fair basis, has good backing in reliable capitalists, and a wide field for operating, and is under, what those who are in a position to know, regard as, experienced management. We wish the Company every success, and trust that parties engaged in other manufacturing enterprises may also be induced to make this Province the field of their operations.—*St. John News*

Trial of New Gas Cobourg enlightened.

Cobourg, Nov. 30, 1896

Cobourg is brilliantly lit up to-night with the new gas manufactured according to Ensay's patent. Messrs. Moffatt and Ledward, the assignees of the patent, have been using the gas here during the last fortnight, and the town has been partially lit with it while the necessary changes at the old gas works were in progress. To-night, however, is the first time the arrangements have been so far completed as to allow the true illuminating power of this gas to be tested, and it certainly appears to great advantage. The streets and shops are more brilliantly lighted than in the case in Toronto at night, and even at Fraser's woollen mills, one mile from the gas house the light given out is equal, if not superior, to that produced from coal gas.

This new gas, let me say, is made from pine wood and bones, or any other vegetable or animal refuse matter, and since its introduction the le-cesse have reduced the price of gas here 31 per thousand feet. They do this although paying 75 per cent. more for the lease of the works than the former lessees, and feel confident of making it pay well.

Cobourg is the first town in Canada lit by this new gas, and it has its light better and cheaper than any town or city in the Province.

I visited the works to-day and saw the process of manufacture, which exhibits many novelties interesting to the friends of progress. Gas and tar, turpentine, pyrogenous acid, liquid ammonia, and superphosphate of lime or animal charcoal, are all being produced at the same time, and from the same material. All these valuable products are from articles comparatively worthless, such as pine stumps and bones and the invention thus forms a very valuable as well as novel development of Canadian resources.

The new gas was tested to-night in the presence of several Toronto gentlemen, who came hither for that purpose. Not only can it be sold cheaper, but the works can be erected at much less cost. It is especially adapted to small towns.—*Globe*

PROPOSED RAILWAY ATLANTIC AND PACIFIC OCEANS.

A public meeting of merchants and others was recently held at Liverpool to hear explanations from Captain Bedford Pim, R.N., relative to the concession he had obtained from the Nicaraguan Government for the construction of a railway between the Atlantic and Pacific Oceans. There was a very numerous attendance, and the chair was taken by Mr. S. R. Graves, M.P.—Mr. Graves said that the neglect with which the English Government and the commercial community had treated Lieutenant Waghorn and M. de Lesseps ought to be a lesson to us against that apathy which had hitherto been so prejudicial to our commercial interests. For upwards of five years the commercial community of Liverpool had vainly been endeavouring to procure a communication with Western China through Burmah, but he was happy to say that, during the last few months, definite orders had been sent out to India for an immediate survey of the proposed route, which was likely to result most beneficially for the commerce not only of this country but of the world. He trusted, however, that the scheme of Captain Pim would attract prompt attention, and that they would not in this case have to reproach themselves with having been inferior in sagacity and energy to the French and American Governments. Captain Pim then gave a resume of his concession from the Nicaraguan Government. This concession would last for 99 years, and included 1,300,000 acres of land teeming with gold and silver and other precious metals. He had carefully in company with other engineers, surveyed the route of the proposed railway, and he was satisfied that it could be easily constructed, and would be of vast benefit to commerce. He had the personal opinion of the Emperor Napoleon, and of French capitalists, as to the practicability of the scheme, and so far as he was concerned, he wished the proposed route to be cosmopolitan and free from all international jealousies. Lieutenant Maury (U.S.) then gave a history of the Panama route, to show how profitable Captain Pim's scheme might be, and how beneficial to American and English commerce. In answer to questions, Captain Pim said that the height of the levels was about 550ft. at the highest, with a gradient of 1 in 100. He had received an offer to construct a line 40ft. wide at \$20,000 per mile but he believed it could be done cheaper. The capital required would be about £1,000,000, and he wished to obtain some of this from Liverpool. A vote of thanks to Captain Pim was adopted, on the motion of Mr. Clint, seconded by Mr. C. Turner, M.P.

THE THIRD RAIL.—We understand that the laying of the third rail on the Great Western Railway will be completed between the Suspension Bridge and London, and that on Monday next through sleepers between London and Rochester will be put on to the express trains.—*Spectator*