A StCationies and Morration or important manube timbe existed your corresponding results took a continuous most of the focusion located there, thanks 16% a short sketch of the various frelustrical would be interesting to party real real the Incesional Works

THE CITY OF ST. CATHARISES

to etcap pulation of about 11 con and is most ad-Yantage asky situated on the Welland Coul, about a miles from its outlet into Lake Ontatio at Port Dale web, and it talks from Hamilton by the Orest Western Rules - I'l largest

N. C. W. W. C. S.

in the Darlinson owned by Messrs R. H. Smith & Co., are situated here work being curred on in a line stone toubling on the sincipal street, and which has a time appearing. The new binery is run by steam power. and is all of the most approved description, and turns out a me quality of work. Between fee and 0 works turn one has employed many of them working over- machinery. And now we come to the last, although time. In their west this ratory is time. In the r ir of this rectory is

TO LESS AND STOLAN

where some it mechanics are kept base, principally on engines and boilers for marine purposes. The works consist of three-buildings, used respectively as a ma line stop toller and blacksmith shop, and foundry. A little higher up between blocks 3 and 4,

COTTON BATTING FACTORY,

which is at present only running at night, in consequence of it sufficient water, so that we were unable to ee it in operation, but understand that quite a live business is toing done. A few feet further on are

PLEP WORKS

of C.P. Mills, which were first established in 1837. This bun have in their show-room, some very fine camples of the various kinds of pumps of their make, from the common wooden pump to the most elaborate styles of iron pipe and force pumps. In addition to good water privileges, there is a steam engine of ample capacity to drive all the machinery in case the water fulls. This factory was first located where the Shickluna Ship Yard now stands, and was the ploneer in-dustry on the Welland Canal Some further distance up the canal, and close to the swing bridge, are the

BE CATHABINES WHEEL WORLS.

The main building is 150 x 50 ft, 3 stories high, and the hub factors is 80 by 24, 2 stories high. Menara. Allan & Co., the proprietors, devote their principal attention to the "barren" patent wheel, for which there is a growing demand, the hub being much higher than on the ordinary wheel. The following works, which we did not have time to visit, but purpose describing in some future issue, are also situated here, viz. -The Welland Vale Edge Tool Works; Shickluna Saw Mill and Dry Dock, Taylor & Bates' Brewery, four grist mills, Gare being owned by Mr. Jas. Norris, and the other, which has a capacity of 400 barrels of flour per tiem, is owned by Mr Sylvester Necion. A saw mill, fannery, and paint factory completes the list

MERRITTON

two miles further down the canal from St. Catharines, and has a population of 1,000, although many persons engaged in business there reside in the neighboring city, a line of street rallway connecting the two places. Leaving St. Catharines and following the course of the canal towards Merritton, we shortly come to a very large frame factory on lock 0, owned by

BUITHAS A BARSES MANUFACTURING COMPANT,

who are successors to the firm of Collinson, Burch & Company There are employed 70 hands, in the manufacture of mower knives, reaper sickles, etc., and although turning out an average of 1,000 knives a week, have enough orders on hand to keep them busy till the lat of June. This firm have three large establishments in the United States, in addition to this one here, and practically control the market for this class of work. The machinery is of the most complete description, some of it being the invention of Mr. Saml Collinson, the head of the late firm, who, with his partner Mr. Burch, manages the present Canadian business. The mills of the

AT CATHABINES PULP AND PAPER COMPANY.

are on lock 7, and are running night and day with a staff of 31 hands. They do a large wholesale business in strawand wood pulp, and also manufacture wrap-plng papers. They are about putting in another machine which will double their present capacity, Mr. F. W. McDonald, is the president, and Mr. F. W. McDonald, is the president, and Mr. A. E. J. McDonald, the secretary of this company Still following the course of the canal, just the quite extensive saw mill of the Mesers. I helps, on lock 8, and Disher's woollen mill on lock 8, we notice a new building in course of crection, and on inquiry learn that Mesers. P. & J Phelps intend to utilize it as a

HATMER AND BOLT PACTORY.

and will, at starting, require about 25 hands. The severe weather has retarded their progress materially, but they hope to be ready to commence operations at an early date. Proceeding onward in quest of further information, pencil and note book are again requaltioned, to jot down a few particulars of

THE CANADA WHERE WORLS

of Messrs. H. Patterson & Co., who commenced business here about 12 years ago, and have extensive premises This firm, in common with other manufacturers in their line, are experiencing a good deal of difficulty in precuring timber this winter, it being exceedingly scarce in Canada; they have to import largely from the other side. Their works are running on full time, and employ about 30 hands. The next institution visited

LINCOLN PAPER MILLS.

These nulls are very complete, in each and every appointment, and are most substantially built of stone On the first floor of the main building is a really magnificent Rice, Birton and Phall machine, which con tains 8 drying cylinders, 40 inches in diameter, and two sets of callender rolls, each set consisting of 12 chilled iron rollers. In another room, 125x45, at right angles to the one just left, are six 800-journierow engines, with 44-inch rolls, each ougine resting on a solid stone abutment, and on a wing off this room is an immense 0,500 pound stock boiler. Although making all kinds of paper, their specialty lies in Manilla flour sacks and grocery begs, of which they can turn out three tons daily. The paper beg machines are a perfect marvel of skill and ingenuity, converting in one operation an endiess roll of paper into lags already folded, pasted, dried and counted. The motive power is supplied by a 20-foot head of water and one each of Leftel's and Salt turbine wheel, giving a 200 atlox.

Manufacturing Industries of St. horse-power when combined The writer would like to give a his resextended description of this fine in Ill. did apara permit. The next on the list visited was the massive stone tuilding known as the

LT- STEEL COTTON MILES.

but as the ready or was not in at the time, a build sketch will have to suffice for the present. Its ex-tent, however, may be approximated when one learns that 22 hands and employment within its walls. This fulfill to being run to its full capacity, and a quantity of new machinery is now on the ground, with mere to acrive, which when set up will necessi-tete the employment or additional labor. At the rear of this mill is mother cotton factory owned by Mosses hing & Holan, known as the

MAINITION CORTON MILLS

and in which 75 hands no I employment at full time, and occasionally have to work overtime. I nose mills which are the ploneers of the cotton industry in this section of the country, came into the possivaton of the present firm about five years age, since then they have added from time to time additional labor-saving

MERBITTON PAPER MILLS

of Mesers Blordern & Co., which are so well known that any extended description would be superfluous, The buildings are built massively of stone, and present a fine appearance, and cover a large area of ground. These mills are as usual running night and day, requiring a force of two hundred employes in the various departments. The orders on the books of this firm are sufficient to keep them working to their fullest capacity for twelve months to

PACIEITIES FOR HIPPMENT.

The shipping facilities of both St. Catharines and Merritton are unsurpassed, as the Welland Canal gives them a water connection with the great lakes to the West, and by way of the St. Lawrence river to the scaboard on the East. The Great Western and Welland Railways pass through both places, and the Great Western, especially, has been and is still an important factor in the prosperity of the place, as by means of its connections, shippers can readily distribute to all parts of the continent, as it taps all the principal trunk lines. There is a rapid passenger service of five trains each was daily, and the road being managed with a view to the comfort of the travelling public, many obnoxious features of ordinary railway travel are avoided.

CALDWELL IRON MINE.

(from our Travelling Correspondent)

LANARE, 2nd Feb., 1881. During a flying visit paid by your correspondent to Lanark Village he had the pleasure of a brief conver-sation with Mr. Boyd Caldwell anent mining matters in that region, and was shown some most excellent specimens of fron found upon that gentleman's property, situate about 25 miles from his mill. The mine from which the ore is taken is situated in the township of Lavant, about seven miles from the Misstanippl station, the present terminus of the Kingston & Pembroke linitrond, and when that road is extended to the Clyde (and the work is in progress now) it will come within a few acres of the fron yielding spot. The roin is over 150 feet wide, and Messra. Caldwell & Co bave taken out, up to the 1st of December last. about 4,000 tone of ore, which they are shipping to the United States. Some idea of its richness may be learned from the subjoined analysis made by Professor Chapman.

ANALYSIS OF IDON ORE FOR MESSAS BOYD, CALDWELL & CO. Magnetie nutre of to-

Magnetic oxide of iron		39 o
Alumina		trace
Titanie acid	** *** ** *	trace
Lime 1.15) Magnesia 1.06) Intermixed Carbonis acid 1 97)	Dolomite	4.1
	1000	6.3
		62.9

Equal to metallic iron 64 48 per cent,

This ore is of exceedingly good quality. in iron, quite free from titanium, and practically free from suiphur, phosphorous and other objectionable matters. The intermixed dolomite (to some extent a natural flux) is present in patches only, so that many parts of the sample averaged 60 to 67 per cent. metal-The intermixed dolomite (to some extent a

The mine has been leased to Messre, Folger, Flowers & Co., who commenced working it in December, and they have now about sixty men engaged in tak-ing out ore for shipment to the neighboring States. another mine of equally good ore on the line of the proposed extension of the Kingston and Pembroke Railroad in the same neighborhood, which appears to be rich in minerals. Lead, traces of copper, silver and gold-bearing quarts, taryta (the latter in large quantities) are found, and some excellent specimens have been obtained. In the spring Merars, B. Caldwell intend developing other mines of Iron and varions kinds of valuable minerals known to exist on their lands in that section of country, and mining prospects there during the coming summer bid fair to

be profitable to those who engage in operations.

In the course of conversation with Mr. Caldwell, the question of smelting the ore in Canada came up, and he expressed himself somewhat in the following terms: " It is a matter of regret to see such quantities of ore being shipped to the United States, only to come back to Canada in a manufactured State. Why not have smelting works established at the mines where there is, as a rule, abundance of wood where-with to make charcoal? These mines in particular are in the heart of "a wooden country." of wood is almost unlimited, and to be had for the mere cost of cutting and hauling, and there are abundant railway and other facilities for transporting the manufactured article. If, continued Mr Caldwell, it will pay to freight this ore long distances to the United States, and pay duty on its entry there, it surely ought to be a much greater source of profit to have it smelted on the ground, where all that is necessary can be easily and abundantly obtained, and thus allow our own country to reap the benefits arising from the establishment of such works. There is no doubt whatever but that there is a mine of wealth in this for some enterprising men who have capital and energy to carry it out."

If your correspondent might be allowed to express his humble opinion, he would endorse what Mr. Caldwell says relative to the smelting of the ore at the mines. If the Americans want our iron, they will buy it as readily manufactured as in its crude statebesides charcoal smelted from is always the best, and your correspondent has been informed by those who profess to know, that the best steel is prepared with plas charcoal. The idea seems worthy of consider-

THE WELLAND CANAL

An American View of Caual Competition. The latest force of Berlie ar . Las the following -The enlargement of the Canadian canals, now in progress and shortly to be completed, is very properly a matter of considerable interest to the commercial men of the I nited States as well as of Causds. No one can fall to see that the screat lakes and the St Lawrence ofter immense facilities for the transportation of merchandise. Those aware of the actual circumstances know that they have carried off a large part or the trade between the west and the ocean, and now the question is arising whether the facilities atribes a stranger in the large size of the facilities about to be offered will not enable from to secure & and the stores connected with them. This is it. inuch greater part of it. Leaving out of alght the early history of the St. Lawrence canals, it need only be said that in 1871 the Canadian Government declided to undertake their enlargement, that a uniform depth of twelve teet of water might be obtained. In harvest and Christman, and the millio bigs it is tores a sufficient quantity for his requirements are many influential merchants and commercial corporamany influential merchants and commercial corpora-tions on the expedience of baving the different chan-delivery, this causes the employment of considerate neis deepened sufficiently to admit the passage of nels deepened sufficients to admit the passage of capital, as well as large storchouses; but millers vessels drawing fourteen feet of water. This view of Ireland are mostly well to do, and the milling to the case was shortly afterwards adopted by the Governors is honored by at least one member of the peer. ernment, and on this book operations are being proceeded with on all the principal works between Lake Erle and Montreal. The distance between these two points is 375 miles. On it the e are seven different atretches of canal, having in the aggregate a length of 501 miles. On these there are 52 locks, six of them being guard-locks at the different upper entrances, for the regulation of the reach below them at periods of high water in the rivers or lakes. The total height overcome by locks is 533 feet. The altitude of Lake Erie, however, is 550 feet above that of the St. Lawrence at Montreal; the difference of 17 feet is overcome by the dip in the surface of the lakes and rivers. The locks on the enlarged canals are to be 270 feet in length between gates, 45 feet in width, and to have a depth of 14 feet of water on the slile. It is expected that this will enable vessels of 1,000 tons burden to pass through them; and it is alleged by some parties that as the present tendency in shipbuilding is towards increasing the breadth of beam and sectional area of freight vessels, it is probable they may shortly be navigated by vessels capable of carrying 1,500 tons. The effect of the enlargement will be to open the way from the western lakes to Montreal to a large and profitable class of vessels used on the former, which have as yet been shut out from the through navigation. That done, it is expected that shipments will be made from any point east of Duluth to the point of export abroad. There can be no doubt that such shipment, over a line of navigation requiring no breakage of bulk throughout, cannot fail to offer many attractions to shippers, or that it must secure nearly all shipments from the British North-West Territories, unless the Canadian Pacific Rallway should offer superior facilities; but as this railway has yet to be built, and when built will have about 1,000 miles extending from Luke Nip's-ing to the Lake of the Woods, or nearly two-fifths of its entire length, running through a country which must lang sync," when the running and standing balanalways remain a wilderness, it will be run under disadvantages peculier to it amongst relinade, and be the less able to compete with the chief water route. The great point of competition between rail and water routes, and the St. Lawrence and Erie canals, is at the Welland canal, running from Lake Erie to Lake Ontario. Above this, the only break in the navigation to Duluth is at the Sault Ste Marie canal, built to overcome the rapids at that point. Hence, on the upper lakes navigation successfully competes with the railways, the profits will admit of it. As a general rule, the The Welland Canal is 261 miles in length; navigation is dressed finer in Ireland than in England. This tion through such a channel is a very different thing rendered necessary by the use of a large proportion from navigation over waters practically as free as Russian wheats, which are rich in gluten but dark in from navigation over waters practically as free as Russian wheats, which are rich in gluten but dark a those of the ocean. Still, the fact remains that it color. It would surprise an English miller, whose has been in favor during past times, and if so, why should it not be in increased favor when offering in-creased facilities? It was built originally by an incorporated company, and opened about 1833; but as it falled to become remunerative, it was purchased by the province in 1841, and immediately afterwards the interior being 120 feet long, 24 feet wide, with 84 feet of water on the sills, and those at the entrances 200 feet long, 45 feet wide, with 9 feet of water on the sills In 1843 the Interior locks were entrance locks made 113 feet deep. In 1853 the ava-lable depth of water for navigable purposes was slan wheat meal pass through the coarse silk at the made 10 feet throughout. In 1854 the clay or earth head of the recis. The Irish miller acreens mest parts of the summis level were increased to a width thoroughly his Russian wheat, alightly damps it, and of 50 feet at the bottom, and now it is being enlarged so as to permit the passage of vessels drawing fourteen feet of water. Thus it appears that increased dimensions have been steadily required on the canal. The enlargement commenced in 1842 fully doubled the capacity of both the prism and locks of the original deergn, while the present culargement more than trebles the prism in sectional area. The tonnage capacities of the two canals are expected to bear a similar relation to each other; that is to say, the tonnage of vessels which can pass through the canal now in course of construct.on will be fully six times greater than that of those able to pass through the original canal handed over by the company in 1841. Such is the accommodation which will shortly be oftered to vessels navigating the upper lakes. Will they use it, instead of transhipping at Buffalo, and come on to Lake Ontario, and should they accept the latter course, will they tranship at Oswego for N w York, or go down the St. Lawrence and tranship for Europe at Montreal? These are interesting and important questions. Canada has for a long time been flattering herself that the trade of the great west must go down the St Lawrence, but it has not yet done so. There can be no question, however, but that increased inducements will be offered by these new canals; or that they are likely to render Oswego a formidable rival to Buffalo. But whether the inducements offered will beaufficient to cause any considerable transfer of trade from Buffalo to Oswego, or from New York to Montreal, is not so clear. The former appears much the more probable of the two; for there can be little question that navigation from Lake Eric to New York via Uswego, the new Welland Canal, and Lake Untario could be accomplished much more quickly and conveniently than by way of the Erie Canal from Buffalo. The relative merits of the sail from Kingston to Montreal without breaking bulk, as against a transhipment at Oswego and shipment on the canals and on the Hudeou river to New York, a port two days' sail further from Liverpool than is Montreal, is a more delicate question. The enlarge-

ment of the Eric Canal, as proposed in the late report of State Engineer Seymour, would, of course, go far

routes to New York in favor of the latter city.

MILLING IN IBELAND AND IN ENGLAND

The prescrib that one-ball of the world disc. know how the other half lives to positivity questo milling. How great the difference of tweet promiting windmill on the breezy downs that have the tarmer's gibt and the gleanings of et. tager, and the city flour mill on fiver he its cargosa of grain alongside its elevator when we examine the mode of manufactors the conditions under which it is priceed in vie. countries. Unis difference becomes more apiarire To compare milling in Ireland and in English is the object of this article. The first thin to ... partly to the fact that Itish millers return more the in stock in projection to their business than . English millers, but the principal cause is that to Irish peasant farmers sell all their wheat betw. being a miller. In consequence of the lumidity, the climate, it is impossible to harvest wheat an clently dry for grinding without first kiln drying it but by constant practice the art of kiln drylog has attained to a very fair approximation to the nature process of drying by the heat of the sun Smokel-.. mailing coal is used, and twelve or fourteen quarter, of wheat can be dried at a time on a kiln 18 fee square. The wheat is spread on the wire about 44 inches deep, and lies there for an hour and a half in is then turned and lies another hour, and unless it is unusually damp, a third hour of heat will dry it sur-ciently. It is then thrown off the kiln to a coole, floor, and after lying two or three days it is turned onor twice; from thence it passes to a storing floor, when, If the klin-drying has been properly performed, the wheat will keep perfectly sound, with but little atter. tion, for twelve months. As a matter of business however, the wheat likely to be required for grinds. at an early date is not so highly dried as wheat to longer storage. The loss of weight in drying varies from 5 to 10 per cent, according to the original condi-tion of the wheat. It is obvious that the above proceases, which require considerable labor, store acros. medation and capital, add largely to the ultimate in of Irish wheat, and thus it is sold in the first instanat what appears to be a very low price when quote i in the market reports. A kiln on the mill premisbrings them within the purview of the excise, and flour mills are periodically visited by the inland renue officer, to guard against anything stronger the flour being manufactured. The dampness of the cla mate in many respects unfavorably affects the man-facture, but difficulties are but incentives to the energetic, and we believe that Irish millers are at least equal in skill and good management to their compare in England and Scotland. They have over been ready to welcome and adopt improvements, from whatever source they might emanate, from the days of "auld was first introduced, t. the present time of rollers and purifiers. However, the same anomaly presents itself here as elsewhere. Close to a mill containing even improvement is another one, an old fashloned streeture, whose proprietor is very skeptical as to the va'n of any modern notions, and yet his flour is highly esteemed and commands a ready sale. Perhaps the explanation of the anomaly is that our last fided makes his flour by the axiom "Buy none but the best wheat, and put in plenty of it." Not a lad plan who experience has been principally confined to soft and white English wheats, and who regards Russial wheats as irretrievably dark, to find what beautifully white flour and bread can made from one-half Russian and one-half No 2 American, which is not an unusual mixture enlarged. New locks of stone were built, those in for a baker's atrong flour. But the Russian wheat must not be dealt with after the manner of too man-English millers, who shoot them in the proportion one-fourth Russian to three-fourths English wheat screen and grind them together and dress through a lengthened to 150 feet, widened to 261 feet, and slik, beginning with No 5 or No. 6. The English despected to 9 feet of water on the slife, and the whoat is "killed" in order to grind the Russian whoat properly, and specks and dark particles from the Rusallows it to lie until the water is absorbed, and if, as: probable, he grinds it separately, he will make 33 pcent of middlings (this can be done and yet have clear bran), he then dresses the first run through a sikcommencing with No. 9, purifies and rolls the told dlings, and dresses them through Nos 10 and 11, at ! runs the middlings flour and first-run flour together About 62 per cent, of flour of good color and great strength is thus made, and a further 10 or 12 per cent of second quality will be made et a subsequent purfying and rolling. The American portion of the mix-ture is dealt with in a similar manner, with the ception of damping. Millers in Ireland attach the very highest importance to thoroughly cleaning the wheat, as they believe that if any impurities have excaped the acreens, these impurities will be reduced to a finer powder than the flour, and cannot be removed from it, and it is a very small mill indeed that denot use several wheat cleaning machines, while in thlarger and modern mills there is hardly any limit to the number of machines employed. There is a lw: and increasing demand for strong flour, and a coasterable importation of Hungarian and other higher classed flours. This competition has been met in spirited manner by some Irish millers, who have dovoted much attention to the new process, and who now make flour but little inferior to the best Hungaian brands. In this attempt they are tavored bevoreithe millers of the rest of the United Kingdom by the demand in the rural districts for very low qualities : flour, qualities so low indeed as to be unsalcable in so part of England with which we are acquainted Repeated grindings of tailings from rollers and purities, dressed through fine silks, produc-flours of better color than would have best In dealing with these residual anticipated products very fine dressing is a desideratum. Skilled labor is fully as expensive in Ircland as in England but unakliled labor is largely used, mill laborers wages being scarcely more than one-half what they are in England; for instance, 10s or 11s, per weck, without any cottage or extras, is the usual wages of the laborer who may have worked in a mill from his boyhood. This low rate of wages is not without its to solve the question as to the Oswego and Buffalo drawback, and has led to lavial employment of labor, and in this respect only, we think, will an English