

CANADA'S PROGRESS.

Her Rapid Strides Forward.

Interesting Statistics regarding our Population, our Manufactures, our Banking and Investments.

The report on the trade and commerce of the Dominion, prepared and issued by Mr. W. G. Patterson, secretary of the Montreal Board of Trade, is now to hand, and contains so much useful and interesting information regarding the commerce of Canada and its expansion during recent years that it demands extended notice. Mr. Patterson, in his production, deals first with the progress of Canada as a whole, and secondly with the growth of the trade of Montreal. With the improvement of trade in Canada Montreal must become a more important centre. It is, therefore, not surprising to learn that the tonnage entering at that port has tripled in sixteen years, and that every twelvemonth shows an increase in its imports, its exports and its manufactures. The statistics regarding Montreal are, however, of minor interest compared with those presented regarding the entire Dominion. It is the more general information contained in the report that interests the outside reader. In the first place reference is made to

THE POPULATION

of Canada. Our population in 1871 was 3,635,024; in 1881 it reached 3,324,810, an increase of 633,341, or at the rate of 18.98 per cent. There are in Canada 513 acres to every person, 503 of which are uncultivated. There are not quite so many females as males in the country.

The high position which Canada is taking as a field for settlement is illustrated by the following statement, giving the number of immigrants who have annually made their home here since 1877:—1877, 35,285; 1878, 40,032; 1879, 61,052; 1880, 85,850; 1881, 117,016; 1882, 103,150.

It will be observed that five times as many people settled in Canada in 1882 as in 1877. Of course the natural increase in population and the additions by immigration have tended to enlarge the population of our cities and towns. Winnipeg is the city in which the most marvellous growth has taken place. Its population has increased in a decade by 3,213 per cent. It contained 241 people in 1871, while ten years later it boasted 7,985. St. Thomas comes next in the order of growth. Its record, owing to the construction of railways and establishment of manufactures there, is 250 per cent., Victoria, B. C. has grown 81 per cent., and Toronto has grown 54 per cent. Toronto surpasses Montreal in the rate of its enlargement by 23 per cent., the latter city having increased in population by only 31 per cent. in the decade. Of course it is impossible to deal with the progress of Canada without something

ABOUT THE NORTH-WEST.

According to Mr. Patterson that territory contains 600 square miles, or 384,000,000 acres of land well adapted for settlement and cultivation. In estimating the capabilities of the country and the number of people it will hold, he says:—"The population of Germany in 1871 was 42,726,844, spread over an area of 212,091 square miles—the average being 201 persons to a square mile. To show the capacity of the most fertile part of the North-West to sustain in comfort, if not affluence, an industrious people, it has been computed that there would be plenty of room within the 600,000 square miles first mentioned for over 120,000,000 inhabitants—that number being nearly equal to the combined populations of Germany, France, Italy, and Spain, in the year 1871. The area of the United Kingdom is only equal to about one-fifth of these fertile lands; while the extents of Germany and France are, respectively, but little more than one-third. But a different illustration can be presented, which may probably be more readily comprehended by the people of Canada and the United States. The area of the State of New York is 47,000 square miles; the area of Texas is 274,356 square miles, or nearly six times as great as the "Empire State." Twelve provinces, each equal in area to New York, might easily be carved out of the fertile region of the Canadian North-West. (Texas has not half the area of the latter region—the combined areas of the States of Texas, Oregon, Minnesota, Kansas, and Missouri, amount only to 601,402 square miles; while the five largest territories of the union—Dakota, Montana, Wyoming, Idaho, and Utah, have but an aggregate area of 563,361 square miles.)

As a grain producer the North-West is far in advance of the American Western States. Its product per acre in wheat, barley, and oats is compared with the products of the States in the same staples in the following table, the figures being from official sources:—

	Wheat.	Barley.	Oats.
Bushels per acre.	Bushels per acre.	Bushels per acre.	Bushels per acre.
Canadian North-West	24	40	37
Minnesota	17	25	37
Wisconsin	13	20	30
Iowa	10	22	28
Illinois	8	17	24
Indiana	10	19	23
Ohio	10	19	23

THE FARMER'S WORK.

The following statement gives an idea of the result of the labours of the farmers of the Dominion for one year—the year in 1880:—Wheat—Acres sown, 2,366,554; spring wheat, yield, 12,102,817 bush.; winter wheat, yield, 20,247,462 bush.; Barley, yield, 16,844,868 bush.; oats, yield, 70,493,131 bush.; rye, yield, 2,097,150 bush.; peas and beans, yield, 13,749,662 bush.; buck wheat, yield, 4,901,147 bush.; corn (maize), yield, 9,025,142 bush.; potatoes—Acres sown, 464,289, yield, 55,268,227 bush.; turnips, yield, 39,058,094 bush.; other root-crops, yield, 9,129,320 bush.; hay—acres sown, 4,458,349, yield, 5,055,810 tons; grass and clover seed, yield, 324,317 bush.

In the matter of home-made articles, the products of the home circle on the farm have greatly increased during the last decade.

While the products of the farm have increased, our lumber and fishing and mining interests have been also greatly developed. The ocean, for instance, yielded fish to the value of \$16,800,000 in 1882, against \$14,400,000 in 1880, an increase of \$2,000,000. It is hardly necessary to point out that there has been a marvellous increase in the number and importance of

OUR INDUSTRIES.

Between 1871 and 1881 the capital invested in manufacturing was more than doubled. The number of persons directly employed in manufacturing was increased by over seventy thousand.

Not the least gratifying showing made in this connection is the increase in the average rate of wages paid. But this is only a general statement. Mr. Patterson particularizes and gives special information regarding distinct industries. Thus, he deals with

COTTON MANUFACTURING.

Touching this branch of industry he gives the gratifying intelligence that the following additional lines of production are being entered into during 1883:—Brown sheetings and shirtings, bleached and fancy shirtings, apron checks, nun's stripes, denims, ticks, ducks, cottonades, crochets and knitting cottons, beam warps for woglen mills, drills, bags, wadding and batting, chevists, Canton flannels, shoe ducks, pocketings, wigans.

The list of new lines it will be seen is quite formidable. In 1879 there were seven cotton mills. There are now (1883) twenty, which can produce \$10,400,000 worth of goods per annum.

In the woollen trade great advance appears to have been made. Referring to the

SUGAR TRADE.

Mr. Patterson points out that there are five refineries in operation in the Dominion at present—two in Montreal, one in Moncton, and one Halifax—representing a capital of over \$2,750,000, giving direct employment to about 3,500 workmen, and indirectly to over 30,000 persons. It is now definitely stated that the refinery at Woodstock, opposite Halifax, will be in operation next year, with a capacity fully equal to that of the Canada Sugar Refining Company's works in Toronto. To-day, he observes, instead of importing refined sugar, 93 per cent. of the aggregate importation consists of raw sugar.

THE COAL TRADE.

Last year Canada used 2,524,826 tons of coal. Half of this was imported, and half of it came from the mines in Nova Scotia. No less than 30,000 tons of Nova Scotia coal was used in Montreal during the year. Then there is an increased demand for the coal in Nova Scotia owing to the establishment there recently of iron and steel works, sugar refineries, cotton mills, glass works, and other industries. This partly explains the increase in the output of the province from 688,625 tons in 1879 to 1,250,179 tons in 1892. The following facts regarding

POST-OFFICE BUSINESS.

are given:—"Ten million more letters and post-cards were carried in 1881-82 than in 1880-81. During the same year the postal revenue has increased by a quarter of a million of dollars, while the post-office expenditure is only a quarter of a million more in 1881-82 than it was in 1880-81. In the three years ended 30th June, 1882, the postal revenue has increased rather more than 20 per cent., and the expenditure only 7 per cent.; if this relative rate of increase can be maintained the department will be self-sustaining in a few years. The figures of the Savings Bank Department most markedly indicate the prosperity of the wages-earning population, the deposits on 31st December, 1882, being \$10,840,642, exactly double what they were in March, 1881; the average amount standing to each amount on 30th June, 1882, was \$184, which is an increase of 52 per cent. over the previous year, while the number of depositors has increased 30 per cent.

OUR BANKS.

The following very interesting particulars are given by Mr. Patterson to show how greatly Canadian institutions have expanded and prospered during the past quarter of a century. They relate to the banks in the provinces of Ontario and Quebec:

Paid-up capital.....	June, 1858..	\$ 17,588,000
	April, 1883..	51,700,000
Circulation.....	June, 1858..	7,800,000
	April, 1883..	35,500,000
Banks.....	\$29,205,000	
Government.....	6,300,000	
Deposits.....	June, 1858..	9,100,000
	April, 1883..	133,000,000
Banks.....	\$98,300,000	
Post-Office.....	11,300,000	
Loan Companies.....	13,000,000	
Savings Banks.....	10,000,000	
Discounts.....	June, 1858..	30,100,000
	April, 1883..	160,000,000

It may appropriately be noted here, Mr. Patterson adds, that the progressive enlargement in the import and export trade of Canada has been in even a greater ratio, as shown by the subjoined figures covering a period of thirty-three years.

1850, Imports and exports.....	\$ 40,000,000
1868, do. do.....	130,000,000
1882, do. do.....	221,556,703

The trade in 1881 was larger in proportion to population than that of the United States; while the shipping (in proportion to population) was more than four times as large.

A great deal of other very interesting and gratifying information is given by Mr. Patterson in his report. Enough, however, has been quoted to show that Canada commercially is advancing, and that in every branch of industry her progress is of such a character as to make every man who is loyal to his country pleased.

A soldier in battle should feel as if the whole battle depended upon himself.

One rule he didn't break: In one of Boston's leading clubs two prominent members were discussing the peccadilloes of another member. Said one: "That fellow deserves to be expelled. He has broken every rule of the club, save one." "Which rule is that?" asked the other. "That which forbids feeding the servants," was the reply.

"May I have the honor to conduct your daughter to the supper table?" asked a society gentleman of a lady from the country, who was staying with some friends whom she was visiting in Austin. "May you take her to supper?" was the response. "Why, of course; and you can take me too. That's what we came here for."

How they last; Gentlemen—"How can you afford to sell these rifles for five dollars? They certainly can't be good for much. They won't stand much service, will they?" Dealer—"They will last as long as the man who fires them; what more would you want?" Gentleman thinks "sure enough," and goes off without a rifle.

SCIENCE.

Bricks impregnated at a high temperature with asphalt are being successfully used in Berlin for street pavement.

A curious fact has been observed by Profs. Ayrton and Perry. Soft iron when heated between a red and a white heat ceases to be attracted by a magnet. When soft iron is bent between red and white hot, it ceases to be attracted by a magnet.

Not one quarter of the melon and squash seeds planted ever reach the fruit-producing stage on account of the ravages of the squash bug. If this were not so the markets and farmers' tables would be better supplied. An application of whale oil soap in suds drives away these pests. The soap is not more offensive in smell than the squash bug, but it is efficient and his bug-ship cannot endure it.

To insure the safety of any one compelled to descend into cesspools or places filled with foul gas it is necessary to lower, by means of a string or wire, a tin pan (or other flat vessel) containing a small quantity of ordinary gunpowder, and then ignite that by dropping live coals on it. After the explosion it is well to lower a lighted candle to the bottom. If it continues to burn it can be taken as a sure test that all danger is removed, and the descent can safely be made.

The Spanish Government, taking a hint from the English proceedings during the Egyptian campaign, have ordered the construction of an armored train of special design for use in war. It is to consist of twenty-six trucks, containing ammunition stores and food, engineers' workshop and telegraph plant; and several field guns. It will be propelled by two heavily armored locomotives, one at each end, and will have a crew of nearly two hundred men, who will sleep on board their stranded craft if required.

A new and valuable use has been found for oyster-shells, which until recently were utilized only in making lime. It has been discovered that the shells make a capital foundation for oyster-beds, and within the past two years many thousands of bushels have been used for this purpose in the United States. The oysterman selects a good spot for the bed, and simply drops the shells overboard. This is done in July and August, during the spawning season. The spawn attaches itself to the shell, and in two years the shell is covered with young oysters. These are big enough to seed, and are therefore planted. Sometimes thirty or forty of such oysters are found attached to a single shell. The shells are worth only three-half-pence per bushel when thrown overboard, but at the end of two years they are worth from two to three shillings per bushel, allowing a very good margin for profit.

In the life-saving section of the London Fisheries Exhibition was shown a simple little contrivance for stopping holes in ships, which has been before the public for one or two years, and has during that time been instrumental in saving more than one vessel from destruction. It is known as J. W. Wood's Self-adjusting Rivet-hole and Leak Stopper, and is applicable to ships, buoys, boilers, torpedo boats, etc. It consists of an iron disk covered with felt which screws on to a rod, at the end of which is a jointed T-piece. Supposing that a shot-hole in a ship's side has to be stopped, the T-piece is thrust through the opening, and the jointed piece put crosswise, so that it cannot be readily withdrawn. The felt disk is now slipped over the rod and screwed firmly as far as it will go and the operation is complete. The disks, of various sizes and shapes, are supplied to the Admiralty, and are coming into extensive use in the merchant service. The importance and efficiency of this invention were recognized by the Society of Arts by the grant of their Albert silver medal.

Brain-Work and Food.

The notion that those who work only with their brain need less food than those who labor with their hands has long been proved fallacious. Mental labor causes greater waste of tissue than muscular. According to careful estimates, three hours of hard study wear out the body more than a whole day of hard physical exertion. "Without phosphorus, no thought," is the German saying; and the consumption of that essential ingredient of the brain increases in proportion to the amount of labor which this organ is required to perform. The wear and tear of the brain are easily measured by careful examination of the salts in the liquid excretions. The importance of the brain as a working organ is shown by the amount of blood it receives, which is proportionally greater than that of any other part of the body. One-fifth of the blood goes to the brain, though its average weight is only one fortieth of that of the body. This fact alone would be sufficient to prove that brain-workers require more food, and even better food, than mechanics or farm laborers.—*Boston Journal of Chemistry.*

"Yes," said young Symons, "its rather provoking when you get to your journey's end to find the girl you have flirted with on the cars is your landlady's daughter."

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