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FROM A PAINT
by
Paul Wickson 03

MARCH, 1909
Vol. VII. New Series, No. 3

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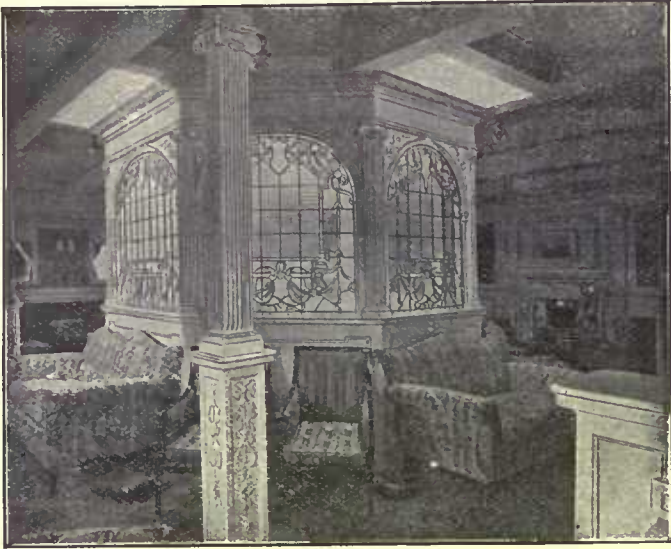


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Friday 22 "	*GRAMPIAN.....	Fri. 5 Feb.	Sat. 6 Feb.
Friday 5 Feb.	*TUNISIAN.....	Fri. 19 "	Sat. 20 "
Thurs. 11 "	HESPERIAN....	Sat. 27 "
Friday 19 "	*CORNICAN.....	Fri. 5 March	Sat. 6 Mar.
Thurs. 25 "	GRAMPIAN.....	Sat. 13 "
Friday 5 Mar.	*VIRGINIAN....	Fri. 19 "	Sat. 20 Mar.
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Vol. VII. NEW SERIES No. 3

Montreal, March, 1909

PRICE, TEN CENTS
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THE STORY OF THE MONTH

A SUMMARY OF CANADIAN AFFAIRS

AT HOME.



The Venerable Archdeacon Sweeney, M.A., D.D.,
Bishop-elect of Toronto.

THE House of Commons showed remarkable diligence throughout the month and in consequence a considerable amount of the business of the session was disposed of. Much of this business was of a non-contentious nature and but little of it related to the leading government measures promised for the session. The principal government measure of the month was Mr. Oliver's bill regarding immigration, consolidating and amending statutes and orders in council. One of the important clauses provides that boards of inquiry, consisting of three or more officers, shall determine summarily all cases of immigrants seeking to land in Canada and detained under the act. Mr. Lancaster's resolution proposing the abolition of the Senate led to some discussion but the members of the Government took no part in it. The resolution will not pass. The House has expressed itself very emphatically in favor of more adequate protection at level railway crossings and it is likely that the Government will have to announce a definite policy upon this important matter.

The annual report of the Department of Marine and Fisheries for the last financial year shows that the total number of new ships built and registered in the Dominion during the year was 392, with a

total displacement of 38,410 tons, and a total value of \$1,728,450. The total number of ships inscribed in the registers of the Dominion at the commencement of last year was 7,528, representing a total displacement of 698,688 tons. Canada from the point of view of registered tonnage, ranks tenth among the maritime nations of the world. The report shows that the twenty wireless stations operated by the department on the Atlantic and Pacific coasts have sent 65,000 messages during the period.

THE Legislature of Ontario was opened on February 16th by Lieutenant Governor Gibson. The speech from the throne announced that the revenue of the past year had been sufficient to meet expenditure. No legislation of a specially important character was foreshadowed and it is expected that the session will be short. In moving the address in reply to the speech from the throne Mr. W. H. Hearst pointed out that the importance of Ontario as an agricultural country and a home for settlers was often overlooked. Of its 140 millions acres, only 24 millions had been taken up although much of the unclaimed area contained as fine agricultural land as any to be found in the world.

ANNOUNCEMENT was made on February 19th of the terms of the Anglo-American Treaty for the reference to the Hague Court of the outstanding disputes between Canada, Newfoundland and United States relative to the rights of American fishermen in the coast waters of British North America, under the terms of the treaty of 1818. Through the instrumentality of this arbitration it is

expected that an authoritative settlement will be obtained of disputes which have been outstanding for close on a century. The court of arbitration will have a membership of five. Dr. Lamarch, of Vienna, has been agreed on as umpire. Canada has nominated Chief Justice Sir Charles Fitzpatrick as its representative. The United States will probably be represented by one of its Supreme Court judges whose name is not yet announced. In addition to the foregoing there will be two other members of the court to be chosen from among the European countries. The Hon. A. B. Aylesworth, Minister of Justice, is to have charge of the Canadian case. Owing, however, to the time which is allowed in the treaty for the preparation of the American and Canadian cases and the filing of pleadings, counter cases and printed statements of arguments, it will be thirteen months before the matter will really come to hearing at The Hague.

DURING the third week of the month the Synod of the Anglican Diocese of Toronto, met to elect a successor to the late Archbishop Sweatman. On the seventh ballot the Venerable Archdeacon Sweeney, D.D., of St. Philip's Church, Toronto, was chosen. Bishop-elect Sweeney was educated in Montreal and ordained there in 1880, going to St. Philip's Church, Toronto, two years later.

ON February 20th the Quebec Board of Trade celebrated its hundredth birthday by means of a banquet at which there were present representatives of the leading Boards of Trade of Canada, the Mayor of Quebec, the Lieut.-Governor of the Province, the Chief Justice of Canada and many



The ice palace, one of the attractions of the Montreal Carnival.

Canadian Life and Resources

other prominent citizens. One of the principal speakers was Mr. Wm. Wainwright, Forth Vice-President of the Grand Trunk Railway System. In speaking of the Grand Trunk Pacific, Mr. Wainwright said: "This scheme was originated by Mr. C. M. Hayes, and when he came back from the Southern Pacific Railway some years ago he talked it over with me. Sir Wilfrid Laurier was in England. On Sir Wilfrid's return from England, previous to the session of 1903, I met him and discussed the project with him, and that was the first time the project was opened up."

In regard to the Quebec bridge he understood that a terminal company was to be formed, for economical reasons, to handle the approaches to the bridge, and the G. T. P. was perfectly willing to take its share of the burden with the other lines using the bridge.

With regard to the National Transcontinental, Mr. Wainwright expressed the greatest esteem for Hon. S. N. Parent, chairman of the N. T. R. Commission, and expressed confidence that he would carry out in the best possible manner the intentions of the Government with regard to the eastern section of the road.

THE people of Baddeck, N.S., on February 23rd witnessed the first flight of a flying machine in Canada, when Douglas McCurdy flew a distance of one-half mile over the ice on Baddeck Bay at an elevation of about thirty feet, in a machine of his own design named the Silver Dart. McCurdy had previously made fourteen flights in the Silver Dart at Hammondsport, N.Y. Alex. Graham Bell says it was obvious from this experiment that McCurdy would have flown to an indefinite distance so long as his engine power held out. He came down very gently on the ice, after only a short flight, because he found that he was getting rather close to the shore, and feared running into the land. Two little girls on the ice had a narrow escape from being run over by the machine when it came down.

THE Legislature of Alberta endorsed the railway policy of the Government as set out in the resolution introduced by Premier Rutherford, and accompanied by bills to guarantee the bonds of the Canadian Northern and the Grand Trunk Pacific Railways, over branch lines totalling 1,681 miles, and with a total guarantee of \$27,433,000. Scarcely a corner of the province is left unprovided for. The Legislature was prorogued on February 25th, and dissolved two days later. A new House will be elected on March 22nd.

THE carnival of winter sports held in Montreal during the third week of February brought a large number of visitors to the city particularly from the United States. His Excellency and party were among the spectators of the brilliant display of fireworks at the ice palace. The view of the palace on page seven is from a photograph by Lapes & Lavergne.

ON February 25th news reached Winnipeg that Inspector Pelletier and a party of Royal North-West Mounted Police, who were thought to have been lost in the northern wilds, had arrived in safety at Fort Churchill on Hudson Bay.

HIS Excellency, Earl Grey delivered the opening address at the convention of the Canadian Forestry Association held in Toronto during the second week of the month. In the course of his address His Excellency said: "The scientific management of forest areas was not only necessary in the interests of navigation, agriculture and life, but the advancing needs of civilization required a continually increasing amount of wood per capita of the population.

"The forest area in the Dominion amounts to 354,000,000 acres. By far the greater part of this is still Crown land or in other words belongs to the people.

"The question for you to determine, appears to me to be this—Shall this great inheritance of which you are the trustees be handed over to uncontrolled individuals to be misused, without regard to the interests of posterity, or shall it be managed under careful and well-considered regulations on lines which will increase the public revenues at the same time that they will ensure a steady advance in capital value?"

ABROAD

WITH a view to conserving the natural resources of Canada, the United States and Mexico, representatives of these governments, in addition to many of the leaders of the conservation movement gathered in Washington, D.C., on February 18th to attend the North American Conservation Conference. Canada was represented by three members of the House of Commons, Hon. Sidney A. Fisher, Minister of Agriculture, Hon. Clifford Sifton and Dr. Beland. The visiting delegates were heartily welcomed by President Roosevelt. In the course of his address he said: "I believe that the movement which you to-day initiate is of the utmost importance to this hemisphere, and may be of the utmost importance to the world at large. I am anxious to do all in my

power to work in harmony for the common good of all instead of each working to get something at the expense of the other. Ultimately, each of us will profit immeasurably if instead of striving to advance by trampling the other, each strives to advance together for the common advancement." Speaking on behalf of Canada Mr. Fisher said that concerted action among the nations was a most happy thought of President Roosevelt and showed his high constructive statesmanship. Mr. Fisher added that the Canadian commissioners had come prepared from observation of what had been already done in the United States to enter cordially into the spirit of this conference.

AS had been generally expected in Canada, the judgment of the Judicial Committee of the Imperial Privy Council in the case of the Dominion Iron and Steel Co. against the Dominion Coal Co., both of whose plants are at Sydney, N.S., was in favor of the former. This Court of last resort held that the Coal Co. had not fulfilled their contract with the former respecting the delivery of coal and that they were liable in damages, the damages to be assessed by the courts of Nova Scotia.

THE British-United States treaty, commonly known as the waterways treaty and which was under consideration by the United States Senate during the month, provides for the settlement of all controversies which arise between the two countries by a joint high commission of six members, three from each country. It settles all waterways controversies, such as the question of power at Niagara Falls, the navigation of the St. John River between Maine and New Brunswick, the use of water for reclamation purposes along the border and near the Milk and the St. Mary rivers, and decides questions of navigation on the Great Lakes. Its settlement of the Niagara Falls problem is regarded as probably the most important feature. This problem has been a cause of friction for a long time, and although both countries have repeatedly tried by legislation to decide the matter definitely, a settlement has never been reached. The establishment of the commission will most likely preclude the possibility of further disagreements between the two countries in their relations along the border. To some extent the treaty will supersede the work of the International Waterways Commission, made up of representatives of Canada and the United States, whose duties include the settlement of the location of that portion of the international boundary between the United States and Canada passing through the Great Lakes system.

MR. Fisher, the Federal Premier, of Australia speaking at the Foundation Day lunch held early in the month in Melbourne, said that the question of defence was whether the people were prepared to pay or not. He saw no hope of adequate naval defence without an Australian Navy co-operating with the Imperial Fleet. He was entirely in favour of compulsory training. Australians were the guardians of the continent for the white race. Mr. Deakin, the ex-Premier, said that Australia was becoming better known in the Old World. He hoped that a middle course would be steered in the defence question between setting apart a portion of the people only for the national defence, and crushing the country under huge expense. Speaking of the federation of the South African possessions Mr. Deakin pointed out that it meant "that at the next Imperial Conference the only Colony standing apart from its natural Union will be Newfoundland. When she becomes united with Canada, Great Britain and New Zealand will be the only two unitary representative Governments of the Empire. South Africa is, therefore, to be congratulated on the achievement of her statesmen, and to be heartily welcomed to the Councils of the Empire."



Recently the Synod of the Anglican Diocese of Montreal celebrated its jubilee. The picture shows Bishop Farthing on the right, and the two surviving members of the Synod of 1859—Rev. Edmund Wood in the centre and Canon Ellegood on the left. Photo by Notman & Son, Montreal.

OUR POINT OF VIEW



THE commercial prospects for our country in the present year are, as we have written several times, excellent. Our farmers are reckoned to have received over four hundred million dollars for their field crops of last year. Money in trade circles, the world over, is plentiful and everything points to a great revival of industry in all civilized countries after the depression of last year. Being first and foremost an agricultural country, Canada suffered less from this depression than those countries the trade of which is chiefly in manufactured goods. The *vis medicatrix naturae* soon repairs the worst evils which a country can suffer from. The opening-up of new tracts of land which is going on all the time in the country must, other features of our national life being normal, increase the volume of our trade. More than two thousand miles of new railways were opened last year and the newly-created commerce from the adjacent regions flows down into the old channels of industry. The probability is that after the lull of last season, this year's immigration will reach again the figure of 200,000. As we have often said before, it is quality more than quantity that we ought now to seek in our new settlers—the time has come when we can pick and choose amongst the applicants for Canadian citizenship and we hope there will not be any slackening of the various tests placed upon immigrants. As strong men are a nation's greatest asset, every sound new settler who comes here is new wealth added to Canada. From these and other reasons which we have not space to set out, we look forward with confidence to the results of the year 1909.

BUT we wish to utter a word of warning to our readers. Whilst most of the aspects of our national outlook are favorable, there is one which calls for caution. The history of the development of new countries shows most clearly that the great danger to which they are liable is a too rapid growth. The magic of developing virgin territory is apt to upset the balance of all but the exceptionally steady man and in the rush and excitement of conquering Nature puny man oversteps himself and in vulgar parlance "comes a cropper." In the United States where the development has been so wonderful, several terrible financial crises have been passed through, inflicting heart-breaking losses upon thousands of people. In the Argentine and in Australia the same results of too rapid development have been seen on a smaller scale. There are many signs that we in Canada are going to make the same mistake that has cost other new countries so dearly. In our opinion we are in danger of rushing our development. We are a nation of some seven millions of people with an immense country capable in time of supporting ten times that number of inhabitants in comfort. *But at present we are seven millions of people only.* Our revenue in a record year was over one hundred million dollars. This is a wonderful increase over that of a decade ago, but it is still only a small sum as the revenues of States go. If husbanded, however, it is amply sufficient for our present needs.

WE are now engaged in what, for a small people, is a gigantic enterprise—the building of the Grand Trunk Pacific. The cost of constructing the main line from ocean to ocean is now estimated at \$129,000,000, plus \$25,000,000 for rolling stock. The Lake Superior, North Bay and Montreal branches will cost not less than \$16,000,000, and if the scheme is developed as it ought to be, no long delay should take place before the Calgary, Prince Albert and other branches of

about 700 miles in the grain districts of the West are constructed, at a cost of about \$15,000,000. Thus the outlay upon constructing what may be called the first portion of the line, a line from coast to coast with the branch lines absolutely necessary, will reach \$160,000,000, and including the cost of about \$25,000,000 on rolling stock, the figure of \$185,000,000 is reached. This is an immense sum for a country the total revenue of which for the past twelve months is not much more than one-half of this. Before 1911 interest on this sum has to be raised somewhere in Canada, either by the Federal Government or the Grand Trunk Railway Co. We have never wavered in our belief that all obligations can and will be met. But when the country is engaged in a gigantic enterprise of this kind we should have thought that there would have been a consensus of opinion that it should be finished before any new scheme of even greater magnitude was undertaken. Despite some Ministerial utterances during the election campaign, we sincerely hope no step will be taken in the Georgian Bay Canal scheme until 1912 at the very earliest. To even guarantee the bonds on any considerable part of such a sum as \$125,000,000, which is what the canal scheme will ultimately cost, until the Grand Trunk Pacific is in complete running order, would in our opinion be most unwise.

THE credit of Canada in the Old Country is good, but the fact that the underwriters of the last issue in January of £6,000,000 of 3¼ per cent bonds were left with 59 per cent of the issue, shows that even our splendid national prospect does not allow us to presume upon the British public taking anything or everything we offer. There have been several paragraphs in the British press lately giving figures showing the great increase last year in our borrowing. During the past year there were issued in Canada Dominion and Provincial Bonds to the amount of \$77,598,500; Municipal Bonds to the sum of \$47,433,911, and Corporation Bonds amounting to \$71,325,000, making a total of \$196,357,411, as compared with only \$82,635,740 in 1907. The total sales in Canada in 1908 were \$24,585,140, or 12½ per cent. The United States took only \$6,316,350, or 3¼ per cent. Britain took no less than \$165,455,031, or 84¼ per cent.

THESE figures ought to be an object lesson to us. As long as our advance is sound, we can get in Great Britain practically all the money we want for our development. But they have keen financial minds in the Old Country, from long experience of supplying capital to develop new countries, and they are apprehensive of nothing so much as a too rapid development. Let us take heed in time. We need not hurry—time is on our side. Let us be the exception to the rule—let there be no panics and crises in our national development. Let us hasten slowly.

IN the estimates of the Federal expenditure for the next fiscal year, which will begin on April 1st next, and which are now before the House of Commons, there are evidences of some retrenchment in several departments of the public service. These estimates call for a total expenditure of \$110,489,774—a large sum it is true, but a little more than nineteen million dollars less than the expenditure authorized for the current year. Of this total expenditure a sum exceeding eighty million dollars is chargeable to current revenue, and thirty and a half millions to capital account.



End view of Power House, Electrical Development Company, Niagara Falls, Ontario.



Tunnel tail-race of the Electrical Development Company under the Niagara River.

THE HARNESSING OF NIAGARA

A DESCRIPTION OF THE GREATEST ELECTRICAL POWER DEVELOPMENT IN THE WORLD AND OF THE ENGINEERING FEATS IT CALLED FORTH

(Written for CANADIAN LIFE AND RESOURCES by MARGARET HUBNER SMITH)



IN her share of Niagara Falls Canada possesses a double asset; for there, side by side, exist the ordinarily incompatible attractions of scenic grandeur and industrial enterprise, and each of these on a scale adequately describable only in language abounding in superlatives. For, despite the utilization of four per cent of its waters for the greatest power development in the world, the famous cataract still stuns with no less thundering sound than of old and still has power to attract by its natural beauty alone upwards of a million visitors a year. Yet the harnessing of this small percentage of its tremendous force for the use of man has laid the foundation of an industrial development that in all probability ultimately will convert the Niagara frontier into the greatest manufacturing centre of the world.

The imperceptible effect that this unparalleled power development has produced upon the appearance of the Falls is due to two causes. In the first place the volume of the stream is so great that what would prove elsewhere a very considerable diversion of the water is here only a negligible quantity. The average flow in the upper river is computed at approximately 224,400 cubic feet per second, and, as the Canadian or Horseshoe Fall pours over its brink nine-tenths of this volume, owing chiefly to its lesser height and greater width than the American Fall, it follows that the Ontario side of the river

can better afford a diversion of its waters for industrial purposes than can the New York side. However, the 7,500,000 horsepower that may be produced from the rapids and the two cataracts proper is sufficient guarantee to both countries of a supply that may be drawn upon for many years to come without impairing the majesty of the great "Thunder of Waters." The second reason why this may be possible is the ever-changing aspect of the Falls due to various natural conditions. For instance, a strong south-west wind frequently drives the water of Lake Erie into the Niagara faster than the lower gorge can dispose of it, a rise of as much as eighteen feet in the level of the lower river having been observed in less than two hours in front of the power-house at the foot of the Horseshoe Fall. On the other hand, a strong north-east wind most perceptibly diminishes

the flow of the cataract, while an ice-jam so holds back the stream that thrice within the last half century the brink of the American Fall has been absolutely bared of water for a few hours at a time. This occurred on February 14th last, when only a stream about ten feet wide fell over the cliff near the centre and another five feet wide near the Cave of the Winds. The greater part of the bed of the river in United States territory was bare. Two other similar occurrences are recorded, one on March 29th, 1848, and the other on March 22nd, 1903.

The power development on the Canadian side, which, by the way, is considerably greater than that undertaken on the



Partial view of the Horseshoe Falls as seen from the tunnel dump of the Canadian Niagara Power Co.

United States side of the line, has been carried on by three important corporations—the Canadian Niagara Power Company, the Ontario Power Company and the Electrical Development Company, representing an aggregate capitalization of about \$31,000,000. The installations of these three plants are all different in style, but each is notable for the boldness and originality of its plan and for the distinct advance that it has represented in hydro-electric science.

The pioneer in the field was the Canadian Niagara Power Company, an allied corporation of the famous Niagara Falls Power Company on the United States side of the river. Seven years ago the ground was broken for its tunnel in the Canadian Park, and in less than four years two machines were in operation at its generating station, while at the present date it has developed 55,000 horse-power out of the ultimate quantity that it is authorized to produce. This installation draws its water from the rapids in the upper river and drops it through steel penstocks into the wheel-pit, which has been excavated in the solid rock to a depth of 161 feet, the effective head being 131 feet. The waste water is then conveyed to the lower gorge by means of a tunnel tail-race of over 2,000 feet in length and twenty-five feet in height, which runs beneath the Park to its portal at the foot of the Horseshoe Fall. The intake works are situated below the first cascade, at a point about 1,500 feet above the crest of the cataract, a short canal and forebay connecting the river with the power-house.

This plant, which has been constructed for its full first development of 110,000 horse-power, possesses many distinctive and interesting features. For one thing, the construction of its works and the development of its power have been accomplished more economically than could otherwise have been done, owing to the experience gained by the older branch of the company on the other side of the river.

As one example may be cited, the use of the same lubricant over and over again,

the oil passing in a regular cycle from the reservoir to the bearings, then into the filters and back again to the tanks on top of the power-house. Still more noteworthy, however, is this company's solution of the problem of supporting the huge machines which, at the time of their installation, represented a larger unit than had theretofore been employed. Each of the five vertical penstocks, which are over ten feet in diameter, conveys the water to a turbine of 10,000 horse-power, while each water-wheel operates a generator of the same capacity making 250 revolutions a minute. To provide a sufficient support for this great revolving load of one hundred and twenty tons was, therefore, no easy task, but the engineers finally solved the difficulty by increasing the upward pressure of the water beneath sufficiently to sustain this machinery so that the enormous mass practically floats upon the water. To provide against any accidental relief of this upward force of the water, they added the further precaution of an oil-pressure step-bearing automatically adjusting itself.

Many of the special advantages possessed by the Canadian Niagara Power Company are due to the connection with its parent branch across the river. The power-house is connected with the

two at Niagara Falls, N.Y., so that in case of any possible accident its tenants' supply of power will be continued without interruption. Then, owing to the greater curvature of the eastern bank of the river, the distance from the Falls to Buffalo through New York State is twenty-two miles, while along the Ontario shore it is only sixteen. Thus, power can be transmitted from the Canadian company to the great Buffalo industries along the west bank with less danger of disturbance. In fact, neither of these sister corporations prides itself upon any long transmission wires, as both prefer building up an industrial community at and near the Falls. On the Chippewa River, about two miles above the city, the Canadian Niagara Power Company owns a large block of land suitable for factory sites, which it offers to power tenants on favorable terms. So, no doubt, this spot will become as great a centre of industrial enterprise as the power city which has sprung up during the last ten years at Niagara Falls, N.Y.

The second plant utilizing the waters of Niagara on the Canadian side is the Ontario Power Company, which is authorized to develop 180,000 horse-power, and which has already harnessed five-twelfths of this amount. The intake works of this company are situated at the Dufferin Islands, above the first cascade, from which point the water is conveyed to the power-house at the foot of the Canadian Fall by means of a buried steel conduit eighteen feet in diameter, running nearly the entire

length of the Park. At the lower end of this tube the water is dropped through vertical penstocks to the six great 12,500 horse-power turbines 160 feet below. This company's unit shows a decided advance upon that employed in the pioneer plant, three of the six generators operated by these water-wheels possessing a capacity of 12,000 horse-power each.

The chief buildings of this company occupy a vertical section of the Park, being situated at three different elevations beside the Horseshoe Fall. The entrance to the works is an un-

conspicuous little square structure on the main level of the Park; at the foot of the cliff, 160 feet below, and connected with the entrance by means of an elevator through the solid rock, is the power-house; while on the elevation 110 feet above the Park is the distributing station, which is reached by means of a well-lighted tunnel excavated for 200 feet through the quicksand, and then at its farther end by means of an elevator running up through the hill-side. Thus, the lowest and highest levels command the best obtainable view of the Falls. From the power-house beneath the cliff the spectator may look up at the great wall of water with the jade-green of its crest outlined against the sky; while from the distributing station at the top of the second hill he may look down upon the cataracts and the rapids, catching a glimpse of Brock's monument, which marks the battlefield of Queenston Heights, six miles to the north, or on a clear day viewing the whole upper river and even the smoke of the Buffalo factories sixteen miles away, operated by power from the Falls.

This company has been keenly alive to the responsibilities of its position, and has spent nearly a million dollars in the mere beautifying of its plant and grounds, some of the details being



The Canadian Niagara Power Company's head works, showing the racks that prevent the ice from passing to the intake canal.

the building of new islands with the material excavated from its forebay, and the cutting of its elevator shaft 130 feet through the solid rock, when its grant from the Park Commissioners permitted the running of an exposed lift over the face of the cliff.

The whole plant of the Ontario Power Company shows a goodly list of characteristics peculiar to itself. For one thing these are the first large works operated by men in an entirely distinct building from that in which the machinery controlled is situated, the electrical operators in the "control room" of the distributing station being able to start or stop one of the water-wheels in the power-house and to govern absolutely the various functions of the whole electrical generating apparatus. However, to avoid any uncertainty about the messages that may be sent from one building to another, an instrument known as the telautograph is used, connecting the switch-board in the power-house with that in the distributing-station and electrically transmitting the handwriting of the operator. Then, secondly, the location of its forebay above the first line of rapids enables this company to utilize more of the available energy in the water, its effective head being from 175 to 190 feet, as compared with the 135-foot maximum head of the other plants; that is to say, that for the same amount of water diverted the Ontario Power Company realizes approximately twenty-five per cent more power than either of the other companies. A third peculiarity is its elaborate and entirely original system of screens for the prevention of ice obstruction at its outer forebay. Fourthly, in the installation of its machinery this plant has used short horizontal shafts with few bearings, in order to avoid the multiplicity of supports necessitated by long vertical shafts. Still a fifth interesting feature is its method of relieving sudden shocks throughout the 6,300-foot length of its conduit, due to changes in load. To avoid the danger of "water hammer," the cross section of the pipe at its down-stream end has been enlarged, so that the surplus water can be discharged over a weir directly connecting with the river and thus automatically taking care of any sudden rise in pressure.

The excavation of the forebay was not without geologic and historic interest, for a large portion of the river-bed was laid bare, showing great pot-holes and other notable effects of erosion, while along the shore were unearthed not only a number of bullets, the silent reminders of a bloody warfare waged for three years along this frontier, but also Indian arrow-tips, spear heads and stone axes, the relics of an earlier day when the Attiwandaron or Neutral nation occupied the Niagara Peninsula and allowed the Hurons and Iroquois to pass through on their constant expeditions after each other's scalps.

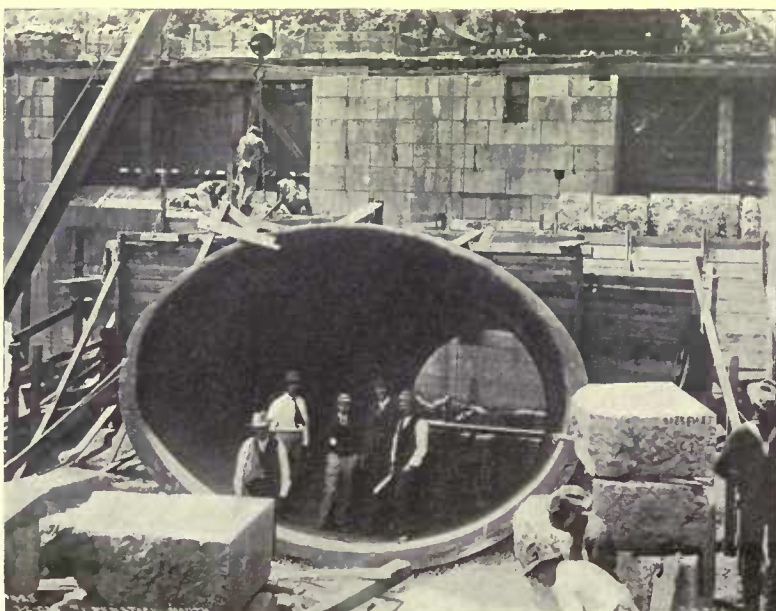
However, much more interesting than these "old unhappy far-off things and battles long ago" is the more benign influence of man's effort shown in the works of the third power plant on this historic ground, namely, the Electrical Development Com-

pany, a purely Canadian corporation, the installation of which has been marked by some of the most daring engineering feats ever attempted.

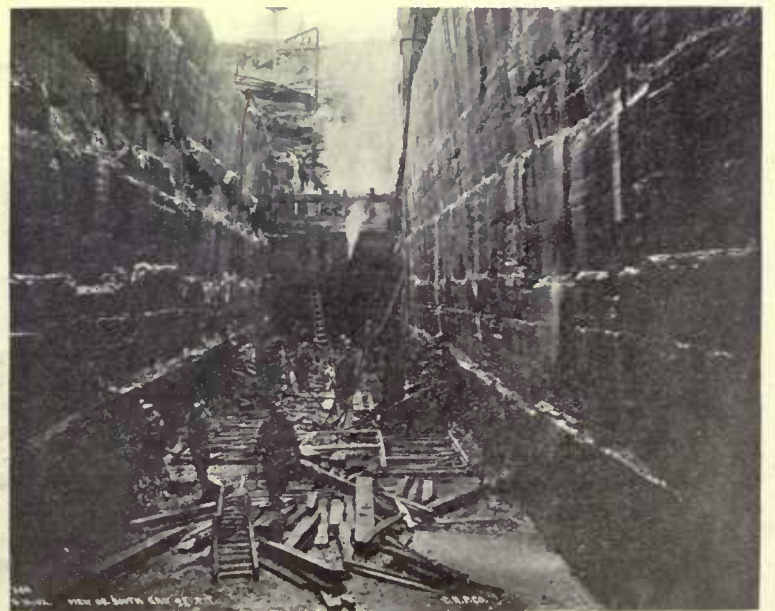
The works of this company are situated at Tempest Point, a spot midway between the intakes of the other two plants and past which the rapids boil and foam as they rush onward at a velocity of twenty-two feet per second. From these rapids the water is diverted directly to the penstocks by means of a forebay thus avoiding the necessity of a canal or conduit. Through these enormous vertical tubes the water is then conveyed to the turbines 144 feet below. These water-wheels have a capacity of 13,000 horse-power each and operate generators representing an individual capacity of 12,500 horse-power. At present only 50,000 horse-power is generated, but the company is empowered by its charter to develop 125,000. Thus, although 2,000,000 cubic feet of water per minute passes into its gathering dam, only 700,000 are at present needed, the overflow being returned to the river. That which does pass to the wheel-pit is afterwards disposed of through a tunnel tail-race running beneath the bed of the river to a portal behind the sheet of water forming the Horseshoe Fall.

In the beginning the building of the cofferdam and the excavation of the tunnel were pronounced by many engineers as impossible tasks. Nor were such stupendous undertakings successfully accomplished without difficulty. The building of the dam involved the sinking of the cribwork in water 26 feet deep where only 18 had been expected. The river bed within the forebay was a particularly bad spot too, necessitating an excavation of several feet. Then it was necessary to build the tail-race under the river in order to prevent it from interfering with the works of the two older companies, and to tunnel beneath the stream it was necessary to sink a shaft 150 feet on the mainland and to make an entrance from the shore. The temporary supporting of the roof and the removal of the excavated material presented the usual problems, but by far the most difficult part of the work was the opening of the portal in the wall behind the cataract, only eight feet above the level of the lower river, where the workmen were deafened by the roar of the waters and drenched and blinded by the spray that enveloped them.

Although the generating station of this company is situated farther up from the Falls than either of the other two, it is, nevertheless, visited by about three hundred tourists a day during the summer season. The building itself is most attractive, being constructed of Indiana limestone in the style of the Italian Renaissance, with the walls of the entrance done in Italian marble. The plans of the company include an additional attraction rivalling the famous boat trip through the Paris sewers, their intention being to build a platform over the waters of the tunnel so that visitors may walk through to the sheet of water behind the Falls.



Section of penstock, Canadian Niagara Power Company, through which the water is diverted from the upper-level to the turbines.



Wheel-pit of the Canadian Niagara Power Company during construction, showing the gigantic nature of the work performed.

OUR COMMERCIAL FISHERIES

BEARING in mind the extent of the fisheries of Canada—and it should be remembered that they are the largest in the world—the great value of their annual production and the large number of people to whom they supply a means of livelihood, it is not surprising that when the House of Commons, a few days ago, had under consideration the appointing of a committee to enquire into the extent of the country's natural resources and the best means of conserving and economically using them, that a number of members representing Maritime constituencies insisted upon a special committee to study exclusively the fisheries of the Dominion. The request was granted, and probably within a year Parliament and the country will be in possession of the information this committee will collect and the conclusions at which it will arrive. In the meantime one must look for statistics respecting our resources of the sea, the lakes and the rivers to the report of the Department of Marine and Fisheries.

The extent of our fisheries is indicated by the following statement in the departmental report recently issued: "The eastern sea coast of the Maritime Provinces from the Bay of



Lobster boats putting out of Charlottetown harbor, P.E.I.

Fundy to the Straits of Belle Isle covers a distance of 5,600 miles, which is more than double that of Great Britain and Ireland. The salt water inshore area, not including minor indentations, covers more than fifteen thousand square miles, without the numerous lakes in Manitoba and other western districts, all stocked with excellent species of food fishes."

Perhaps the extent of our fisheries is most easily indicated by the value of their annual yield, and yet this does not do them justice, because they are now only partially developed and their productiveness could almost indefinitely be increased. Last year the commercial fisheries of Canada yielded fish and fish products to the value of \$25,500,000 a sum exceeding by about one million dollars the value of our annual exportation of dairy products.

In this matter of yield Nova Scotia leads, her fisheries last year having produced a little more than seven and a half million dollars; British Columbia is second with a little over six million dollars to her credit, and New Brunswick third with five million three hun-

dred thousand dollars. As regards the value of the different kinds of fish taken, salmon stands first, the salmon catch having a value of \$5,014,000; lobsters second with a value of \$4,084,000;



A fishing fleet at anchor in Lunenburg harbor, Nova Scotia, on a calm morning.

cod third with \$3,619,000, and herring fourth with \$2,073,756. Then come mackerel, \$981,000; halibut, \$841,000; haddock, \$799,000; and so on down the list, closing with eels, which yielded \$116,000. Large as were these yields there was a decrease of \$780,000 from the returns of the preceding year, the largest falling-off taking place with respect to salmon, herring, mackerel and whitefish.

Of the twenty-five and a half million dollars worth of fish taken last year there were exported almost fourteen million dollars' worth; that is, one-half of our fish are consumed at home and the other half are sold abroad, chiefly in Great Britain and the United States. Our exportation of fish exceeded in value our exportation of all kinds of cured and canned meats by one million dollars.

Not including the persons employed in the lobster canning industry, more than 71,000 men were employed last year in the fisheries of Canada; and their nets, seines, fishing gear and fixtures represented an aggregate capital of nearly fifteen million dollars. In the salmon canneries of the Pacific Coast alone nearly thirteen thousand persons find employment.

The lobster plant, comprising 500 canneries in Eastern Quebec and the Maritime Provinces, is valued at one and a-half million dollars. Nine million cans of preserved lobsters and one million pounds alive or in a fresh state were sold last year.



Unloading salmon for one of the British Columbia canneries. There are fully 35,000 fish in the scene of this picture.



A view of Dufferin Avenue, Brantford.



The Free Public Library of Brantford.

BRANTFORD, PAST AND PRESENT

THE EARLY YEARS OF THE TELEPHONE CITY CONTRASTED WITH ITS BUSTLING LIFE OF TODAY MARKED BY INDUSTRIAL ACTIVITY AND ENTERPRISE



BRANTFORD possesses many grounds on which to base a claim for prominence among the cities of Canada. Perhaps its broadest and most substantial ground is its importance as a manufacturing centre—a place containing many hives of industry affording means of livelihood to thousands of people and producing annually millions of dollars worth of goods to

supply the needs of Canadians in almost every part of the Dominion. And Brantford can also claim distinction because of its well-regulated civic life, the beauty of its location, the comfort and elegance of its homes and the thrift and intelligence of its citizens. Apart from all these the distinction that the people of Brantford most pride themselves in and which they never permit their visitors to forget, is the fact that Brantford "is justly entitled to be called the Telephone City. Here, in the year 1876, Professor Alexander Graham Bell first demonstrated the practicability of his invention." The first telephonic experiments were made at the Bell homestead on Tutela Heights, and in order to commemorate the achievements of the great Canadian inventor it is proposed to erect within the city limits a handsome monument to cost forty thousand dollars.

Brantford is also associated with the career of another man of whom the history of this continent will always make mention and whose memory is here especially preserved both by the name of the city and the beautiful monument which adorns its principal public square—Joseph Brant, or Thayendanega, the Mohawk Chief, who during the War of the American Revolution held a large part

of the Six Nations of the Iroquois loyal to the cause of the Crown.

In concluding the treaty of peace with the United States in 1783, the Commissioners representing Great Britain forgot to make any stipulation on behalf of Britain's Indian allies who had supported the Crown throughout the war, and the country of the Iroquois was included in the territory transferred to the sovereignty of the United States. That Iroquois country comprised what is now the central part of the State of New York. At the outbreak of the war Sir Guy Carleton (afterwards Lord Dorchester) gave a pledge to the Mohawks when they left their native valley to take service with the British, that as soon as the war was at an end they should be restored at the expense of the Government to the condition they were in before the war began, and General Haldimand renewed the pledge of his predecessor. After the close of the war the Mohawks for a time occupied a tract on the American side of the Niagara River. Their brother

Iroquois and allies during the war, the Senecas, offered them land in the valley of the Genesee, but the Mohawks, said Chief Brant, were determined "to sink or swim" with the British, and so they declined homes in the State of New York.

Then the British authorities offered them a tract near the Bay of Quinte, but the Senecas did not wish their brethren to go so far away, and so land situated on Grand River, west of Lake Ontario, was chosen for Brant and his Mohawk braves. As time passed they were joined by bands from the other Iroquois nations, and to-



A view showing the City Hall and public market.

day this Grand River reserve, containing 43,696 acres, has an Indian population of 4,236 souls. Most of them are farmers and all are well advanced in civilization.

Not far from where the Mohawks first located themselves the Grand River, at the season of low water, was fordable, and the place became known as Brant's ford. On April 19th, 1830, the Indians receded to the Government a part of their grant. This town plot was at once surveyed into lots and sold by auction to actual settlers at an upset price of ten pounds a lot "and as much more as the purchaser saw fit to bid." Such was the beginning of the city of Brantford.

In that interesting old history and gazetteer, "Canada—Past, Present and Future," will be found a description of Brantford of sixty years ago. "The town has increased rapidly within the past few years," wrote our author, "having great advantages for shipping produce through the Grand River, and also being situated on the great thoroughfare leading from Hamilton to London.

Brantford now contains about 3,200 inhabitants; has a large town-hall and market-house which cost £2,200; a large public school with about 300 scholars attending, and six churches." The manufactures of the place were as follows: "There are four grist mills, one of which is a large brick building; two foundries doing a large business; a stoneware manufactory, the only one yet in operation in the west of Canada; two tanneries, a planing machine and sash factory, etc."

Such was Brantford at the middle of the last century. The Brantford of to day is a city containing 20,633 inhabitants, and, in proportion to its size, one of the greatest producers of manufactured goods in Canada. According to its civic assessment roll it contains property to the value of \$13,415,960, of which \$11,562,140 represent taxable property, the rate of taxation being 21½ mills on the dollar. Last year there were erected

buildings to the value of a little more than a quarter of a million dollars. The Federal revenue collected at Brantford last year through the post office, the inland revenue office and the custom-house amounted to \$282,000, and goods were imported, both dutiable and free, to the value of about two million dollars.

Brantford is one of the busiest industrial centres of Canada, almost every line of industry being represented there, and as an exporter of manufactured goods it ranks third among the cities of the Dominion. Among other countries, Brantford's manufactures are exported to Australia, Great Britain and Ireland, Russia, France, United States, Germany, Argentina, Holland, Porto Rico, New Zealand, Mexico, Newfoundland, South Africa, Chili and Denmark.

Among the principal lines in which the manufactories of Brantford take a prominent place are engines and boilers, harvesters, ploughs and other agricultural implements, stoves, tools, castings, machinery, carriages, varnish, woollen goods, cement, binder-twine and other similar goods. Last year these manufactories gave employment to 4,644 men, and paid in wages the sum of \$2,141,270.

Brantford is splendidly situated in the matter of cheap power, being able to offer manufacturers and others requiring such, natural gas at very low rates, and, also, cheap electric

power. This latter is obtainable from the Cataract Power Company, which is said to have, at DeCew Falls, one of the cheapest developments on the continent. The city will also be in a position to obtain power from the Hydro-Electric Commission, established by the Ontario Government, should it desire to do so.

Brantford is now on the main line of the Grand Trunk Railway, extending through the entire length of Ontario; the Buffalo-Goderich division also passes through the city, and branch lines extend south to Port Dover on Lake Erie and to Owen Sound on the Georgian Bay. The city also has close connections with the Canadian Pacific and the Michigan Central systems. An electric line gives it separate connection with the towns to the north along the valley of the Grand River.

The city has first-class educational facilities, consisting of a collegiate institute, six public and two separate schools and a manual training institute, in which a practical technical education can be obtained.

The public institutions are numerous and well maintained, among them being the County Court House and public offices, the Ontario Institution for the Blind, situated in a beautiful park at the north end of the city; the John H. Stratford Hospital, a public library costing \$35,000; the Young Men's Christian Association; the Young Women's Christian Association, the Mohawk Institution for the Education of Indian boys and girls, and a number of industrial and charitable institutions.

Brantford contains two public parks—Jubilee Terrace, containing a monument to the memory of the volunteers who fell in South Africa, and Victoria Park, in which stands the beautiful statue of the great chief, Joseph Brant.

The surrounding country

is one of the finest agricultural districts in Canada. The soil is exceedingly fertile, the farms are well tilled, the farmhouses substantial and comfortable and often elegant, and the whole countryside bears evidence of the thrift and industry of its people. For a large part of the produce of this district Brantford offers a steady demand, and the city market, especially on a Saturday, is one of the sights a visitor should not miss.

At Brantford is maintained one of the best educational institutions for Indians in this country—the Mohawk Institute, situated in a bend of the Grand River about a mile and a half from the centre of the city. Last year 115 boys and girls were in attendance. Connected with the institute is a farm of 380 acres, in the cultivation of which the pupils take part. Near the institute is the old church, the first erected in the western part of Canada. The Indians have in their possession a handsome communion service of beaten silver, each piece bearing an inscription stating it to have been given to the Mohawks for the use of their chapel by Queen Anne. The armorial bearings of that Queen, carved and gilt, are also affixed to the walls of the church. The church bell was made in London in 1786, and was, no doubt, procured by Joseph Brant at the time of his visit to England. In the churchyard repose the remains of the great chief, the grave being marked by an imposing monument.



The Brant Memorial in Victoria Park, Brantford.



Gadwall duck, also called grey duck, showing male and female.



The Canada grouse, male, also called the spruce partridge.

SOME CANADIAN BIRDS

(Written for CANADIAN LIFE AND RESOURCES by REV. G. EIFRIG.)



HE bird-life of Canada is exceedingly varied and widespread. A glance at the map will suffice to make this apparent. When one considers the large extent of the Dominion, its geographical position as the northern half of North America, its multiplicity of various physical features, it at once becomes clear that the *avis fauna* of our country must be extremely large and diversified. Here is a country almost as large as Europe, extending from latitude 42 to 80, or even to the North Pole, and from the 56th to the 141st degree of west longitude; an immense extent of sea coast, which the many islands render almost endless. These coasts and islands afford good breeding places to innumerable hosts of sea and shore birds on account of inaccessibility either by reason of their precipitous nature or of their being far removed from the haunts and highways of men. There are also an exceedingly great number of large and small inland lakes, extensive chains of hills and high mountains, of wooded tracts and immense plains and prairies, of rivers and valleys, of swamps and bogs as well as cultivated lands. All this tends to make Canada a home for a large and varied bird-life. Canada's northern parts, the "Barren Lands," and the shores of the Arctic, contain the only breeding places of quite a number of birds; for example, the rock and willow ptarmigans, the golden and black-billed plovers, the snowy hawk and Richardson's owls, the trumpeter and whistling swans, the ivory, glaucous, great black-backed and Bonaparte's gulls, some of the loons, guillemots, puffins and murrelets. Of course, some of these birds also breed in the northernmost parts of the eastern continent, but so far as the western hemisphere is concerned, Canada possesses the only breeding-grounds of a great many species. In fact, Canada holds one of the remaining few great bird paradises in the world. It is true, and it makes one feel sad to relate it, the great eastern bird paradise along the coast of Labrador that made the explorers and naturalists of a century ago dumb with amazement, then enthusiastic and eloquent, when they beheld

the immense masses and varieties of snowy and other water and shore birds, has been so greatly depleted by the wanton destruction and egg-robbing practised by the fishermen that many islands and coasts, formerly alive with beautiful birds, are now desolate, and quite a number of species have come dangerously near to extinction. In that manner the great auk (*Plautus impennis*), formerly so abundant on some of our islands off the eastern coast, has been entirely wiped out, the last one having been seen alive in 1852. They were flightless and thus could not escape when sailors or fishermen landed on their breeding-grounds (the last breeding-ground was Funk Island) and slaughtered right and left, even in the breeding season, till now not one is left. Likewise an entirely different bird, the Eskimo curlew, has by indiscriminate slaughter in the last few years, become nearly if not quite extinct. It is pathetic to read the description the great naturalist, Audubon, gives of the eggers of Labrador, of how they would land on an island, shoot the breeding birds right and left, trample with their big boots in fiendish glee on

the plentiful eggs and young, and, intoxicated by rum, repeat the same performance on the next island. This was in 1833; but it is being kept up to this day. Messrs. Townsend and Allen, two naturalists of Boston, Mass., who were in Labrador as late as 1907, also give harrowing details of the careless and ceaseless destruction even now going on there. Here, for instance, is what they say: "We were told that one hundred and twenty-five ducks, chiefly elders, were picked up at one place near Cape Charles



The great blue heron.

last spring after a volley of five guns. Twenty-five more were picked up the next morning. The fishermen with whom we talked made no concealment of the fact that they took all the eggs and killed all the birds that they could." No doubt the Dominion Government will find ways and means to afford better protection to many of the great breeding-places and bird colonies on our eastern shores and islands. This can be done by making light-house keepers and other officials bird protectors for certain colonies in their locality, in addition to their other duties. If only

the Newfoundland Government could be influenced to do likewise! What a shortsighted policy this wanton destruction of useful and beautiful birds is! Where will succeeding generations get ducks, etc., and their eggs, if the birds are maliciously exterminated now?

But in our great prairie region from Manitoba to the foot of the Rockies and northward to the Mackenzie region, we have and hold a bird paradise unexcelled, not even approached anywhere else in the world. Here in the innumerable sloughs, swamps, ponds and lakes is a region sparsely populated, where water, shore and upland birds have a chance to propagate their kind for centuries unmolested by man, under the most favorable conditions. In those northern wilds may be seen, in season, flocks almost countless in extent of wild ducks, geese, swans, gulls, terns, pelicans, phalaropes, sandpipers, the graceful avocets, grebes, coots, sharp-tailed and pinnated grouse, etc., that which may be seen there is almost incredible; and it becomes the duty of our generation to see to it that the shameful performance of the destruction of the buffalo is not repeated on the birds in this paradise of the feathered tribe.

Have we any of the birds here that are found in England? Yes, quite a number, but most of these are uncommon and sea



Wood duck.

Drawn for Canadian Life and Resources by Edward G. White.

birds. Among the common or ordinary birds there is really only the bank swallow or sand martin that is common to both countries. Besides, our two kinglets and brown creeper are almost identical with the corresponding English birds. Then there is, of course, the altogether too common English sparrow, which, however was not native here, but has been introduced. This has become more or less of a nuisance here in several ways, so that we would forget it if it would not force its notice upon one. Several rare migrants in England, such as the Bohemian waxwing, the pine grosbeak and the snowflake, are resident in the northern or western parts of our country. Among the ducks there is more correspondence, as in the shoveller, pin-tail, mallard, golden-eye, eider, red-breasted merganser and others. Our most beautiful duck, the wood-duck, is, however, not found in England. It is a typical American bird. It is a vision of loveliness. It seems as if nature wanted to outdo itself when it bestowed color and color pattern on this bird. The finely crested head, the back and tail are iridescent with a sheen of bronze, green, purple and blue; the sharp contrast between the pure white and the darker parts, the rich purple breast, spotted with

white, the delicate tracery and pencilling on the flank feathers that close over the wings make its attire truly gorgeous. The



High set nest of wood-duck.

scientific name, *Aix sponsa*, that is, bridal duck, is therefore well chosen. Sad to say this beautiful bird is also on the vanishing list. In many places where it was formerly common it is now rare or absent. Many are banged down by hunters with no more hesitation than when they bang down the common ducks that are less conspicuous for beauty. It seems almost a sacrilege to pluck and waste so much beauty. Stringent measures should be taken to protect this bird from extinction. All shooting of it should be forbidden for a number of years, as has been done in parts of the United States. The immediate result of such prohibition has been highly gratifying.

Then there are the circum-polar species of birds, i.e., such as breed in the territory adjoining the Arctic seas all around the North Pole, which come to us in the southern part of the Dominion in winter and are also more or less regular visitants in England. The only difference is that in all these cases we hold all the breeding-places for all such species in the western hemisphere, since they cannot go far enough north for their nesting to be out of our domain. Such birds are the red-throated, black-throated and yellow-billed loon; the puffin, guillemot and murre; the herring and great black-backed gulls; the kittiwake and gannet or solan goose; the last four, however, also breeding in England. Among birds of prey there are at least the osprey or fish-hawk and the golden eagle, found here and in Britain. Naturally, in all these orders and families there are a great many kinds that are specifically American or Canadian. There is, for instance, our loon or great northern diver, a splendid bird, a familiar figure on most large and small lakes all over the Dominion and an ornament of them.



Nest of partridge (ruffed grouse.)

OUR HISTORY IN STATUES AND MONUMENTS

XXVII.



IN 1870 the Canadian West, so far as accessibility was concerned, was more remote from Eastern Canada than Eastern Canada is to-day from South Africa. To-day a traveller can take train at the commercial metropolis of Canada and after a journey of two days made in perfect comfort be set down in the commercial metropolis of the West. Thirty-nine years ago there stretched between

the western end of the Ottawa Valley and the prairies of Manitoba a wilderness to be traversed in winter by aid of snowshoe or dog-train and in summer by following the tortuous windings of the waterways and by tramping over the rough portages. Such were the conditions that confronted the little army that in the summer of 1870 Canada sent to the West to take possession of the country, to restore order and bring to a close the regime of that shadow of a government that a handful of adventurers had presumed to set up on the banks of the Red River. That little force was commanded by Colonel, now Viscount Wolseley, who in after years and by well-deserved promotions rose to be the Commander-in-Chief of the British army. It took Colonel Wolseley and his force thirteen weeks and a half to go from Collingwood on the Georgian Bay to Fort Garry, where Winnipeg now stands—almost twice as long as it took the Canadian contingent to sail from Quebec to Cape

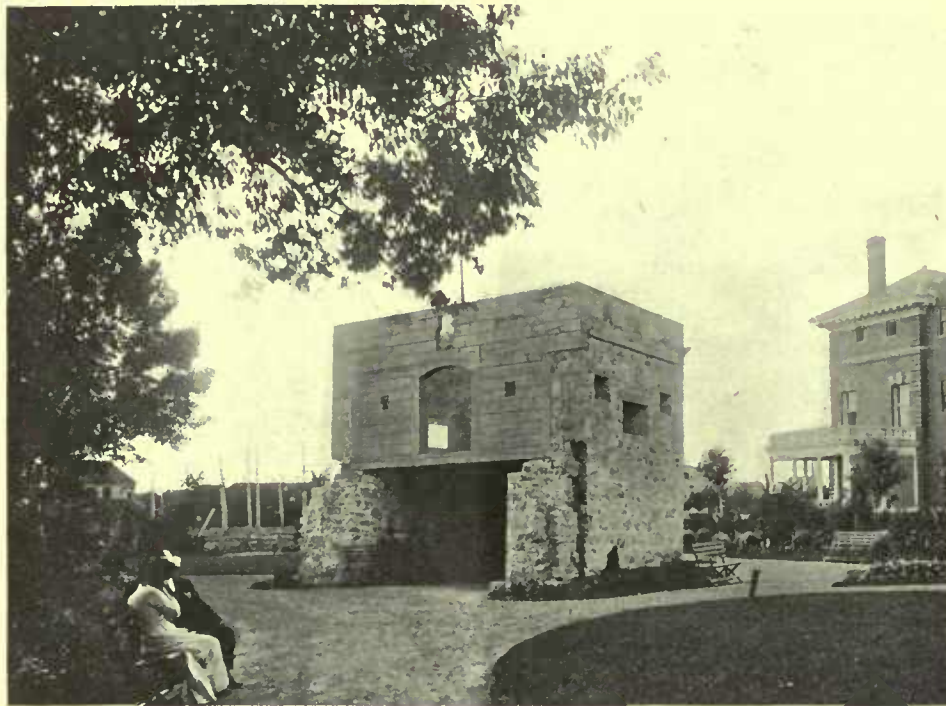
Town. Considered from two different points of view the Red River Expedition of 1870 was a memorable event in our history. It marked the great western expansion of the Dominion, which extended Canadian territory to the Rocky Mountains and paved the way for the union with British Columbia, thereby making the Pacific Ocean our western boundary.

The expedition was also the first test of the newly-formed Dominion to maintain law and order in its most distant parts. It showed that Canada's arm was as long as her territory was extensive and that the power of the Federal Government was real and effectual.

Perhaps the Province of Manitoba—in fact the whole West of the prairies—may be regarded as a monument to the Red River Expedition of 1870 and as a secondary monument stands one of the gates of old Fort Garry, which played so large a part in the early history of the West. It was there that Riel set up his self-constituted government in the autumn of 1869, and it was the objective point of the force that Wolseley led to the West in the following summer.

Fort William was the base of Colonel Wolseley's expedition and early in the spring of 1870 men and supplies were carried there by steamers from Collingwood, Ont.

"On the 21st May," writes Alexander Begg in his History of the North-West, "Colonel Wolseley and staff, with a portion of the 60th Rifles, left Collingwood, and on the 25th arrived at the camp near Fort William, which he named Prince Arthur's Landing, in honor of the Duke of Connaught. . . . The season being rainy, the road became very bad, and so much difficulty was experienced that Colonel Wolseley determined to send boats by the Kaministiquia River. . . . The boats, which had been greatly damaged on the passage up the Kaministiquia, were repaired, and on the 16th July the first brigade left McNeill's Landing on Shebandowan Lake, and on the 4th August the advanced detachment arrived at Fort Francis, on Rainy River. The whole force at this time consisted of 1,431 men, of whom 92 were officers, 1,051 non-commissioned officers and men, 274 voyageurs and 14 guides, and these, during the progress of the expedition, were sometimes spread out in parties a distance of over 150 miles. On the 21st August the 60th Rifles, the Artillery and Engineers had all arrived at Fort Alexander, where the expedition was joined by Mr. Donald A. Smith (Lord Strathcona), who accompanied it to Fort Garry, and, the Canadian volunteers being behind, a start was made on that day down the river to Lake Winnipeg, and on the 22nd the mouth of the Red River was reached. At this time there was some uncertainty whether Riel would offer resistance to the troops, and Colonel Wolseley had to be prepared for any emergency. On leaving the Stone Fort, therefore, a



A view of old Fort Garry's main gate, still standing in one of the streets of Winnipeg.

company was sent by land in advance of the troops, who remained in the boats, with orders to stop any persons going in the direction of Fort Garry, so that intelligence of the arrival of the troops might be prevented from reaching Riel's ears. About 8 o'clock on the morning of the 23rd August, 1870, Col. Wolseley, with the 60th Rifles, Artillery and Engineers, arrived at Point Douglas, and there the men disembarked, and, forming in companies, marched upon Fort Garry, a line of skirmishers being thrown out in advance.

On nearing the Fort, some of the mounted men were sent ahead to reconnoitre, and on these reporting the place to be empty, and the gates wide open, Col. Wolseley marched in with his troops, the Union Jack was hoisted, a royal salute fired, and three cheers given for the Queen, in which a number of the residents of the settlement who were present joined. Thus the 'errand of peace' was accomplished, and the gallant handful of men, after an arduous and dangerous journey of 600 miles, had the satisfaction of knowing that, without firing a shot or losing a life, they had finished the task entrusted to them, and peace

was once more restored in the country. Riel and a few of his immediate followers had fled from the fort only about a quarter of an hour before the arrival of the troops and not a soul was left to represent the Provisional Government. The position of Col. Wolseley was a most difficult one at this time. The purchase money had been paid over to the Hudson Bay Company; the territory had been duly transferred to Canada, and Hon. Adams G. Archibald had been appointed Lieutenant-Governor, but had not arrived. As a military commander, he had no civil authority, and to have proclaimed martial law might have led to disastrous effects. He therefore held that the Hudson Bay Company was the only civil authority until Governor Archibald arrived, and Mr. Donald A. Smith was therefore called upon to administer affairs, by which course, and by exacting the strictest discipline among the troops, much trouble was avoided.

On the 27th August the Ontario Volunteers began to arrive, followed soon after by those of the Quebec Battalion, and on the 3rd September the last of the 60th Rifles, Artillery and Engineers left on their return home.

On the 2nd September, Lieut.-Governor Archibald arrived, and a royal salute was fired in his honor, and on the 6th he held a levee at Fort Garry, in the house which had been occupied by Governor McTavish, and which afterwards was known as Government House. Colonel Wolseley now took his departure, and the Ontario Rifles moved into quarters at Fort Garry, the Quebec Battalion being stationed at the Stone Fort, the command of the whole volunteer force devolving on Lieut.-Colonel Jarvis, of the Ontarios."

The gateway of Fort Garry still stands, a monument to the success of that "errand of peace."

NOTES OF THE EMPIRE

"Canada and the Empire is our politics."

THE discovery of oil in Southern Nigeria (West Africa) is an event of Imperial importance. The oil fields extend over an area of more than 200 square miles. The time is coming when the naval and mercantile fleets of the world will be run entirely by oil. And this fact, even in times of peace, makes it highly essential that the British Empire should possess its own oil fields. But the importance of this is infinitely greater in time of war, as it is to Southern Nigeria that Great Britain will look for her fuel supplies when hostilities or declarations of neutrality by other Powers may close her other sources of supply. That is what oil in Southern Nigeria means to West Africa and the world, and this discovery probably marks the opening up of an era of prosperity for the West Coast which will prove one of the most remarkable that have occurred in the history of any of the dependencies of the Empire.

BRITISH Nigeria has, hitherto, been one of the least-known parts of the Empire, but it should have a special interest for Canadians, as one of our distinguished countrymen—Sir Percy Girouard—is the Governor of Northern Nigeria. Some idea of the rate at which this part of the British Empire is progressing may be gathered from the following figures as to the revenue of Southern Nigeria where the oil fields have been discovered. The revenue of that territory stood at £292,184 in 1896, whereas last year it reached just under a million and a half pounds sterling. That is to say, the revenue has multiplied itself by five in eleven years, while the expenditure, which has also been increasing, was last year some £242,000 on the right side of the revenue. Since 1900 the imports have risen from £1,735,000 to £3,839,000, while the exports during a similar period have risen from £1,886,000 to £5,863,000.

HITHERTO, the principal exports have been the products of the palm (kernels and oil), rubber, cotton, cottonseed, cocoa, mahogany, maize, skins and hides; and of these palm oil and palm kernels represent 75 per cent of the total export trade. That trade last year amounted to just under four

million pounds sterling. There is no natural limit to the palm oil industry. Mahogany to the value of £70,000 was exported last year. The obstacles to progress in Southern Nigeria have been: First, the climate; second, the want of communications; and, third, want of fuel. With regard to the first of these, the conditions of living have been very much improved of late years. With regard to the second point, the railway has already worked wonders, and with the present extensions, which have now traversed the whole of Southern Nigeria, will shortly put this country in communication with that wonderful territory of which Kano is the centre. In the construction of this railway Sir Percy Girouard has played a prominent part. It is the third obstacle, the want of fuel, that these new oil discoveries are to overcome. In a country like Canada it is difficult to understand the meaning of want of fuel. Here, when coal goes up a dollar a ton, there is a very great outcry, but in countries where there is no coal and no adequate substitute for it, the industrial conditions are severely handicapped and sometimes rendered impossible.



Sir Edward Grey, the able young Foreign Secretary of His Majesty's Government.

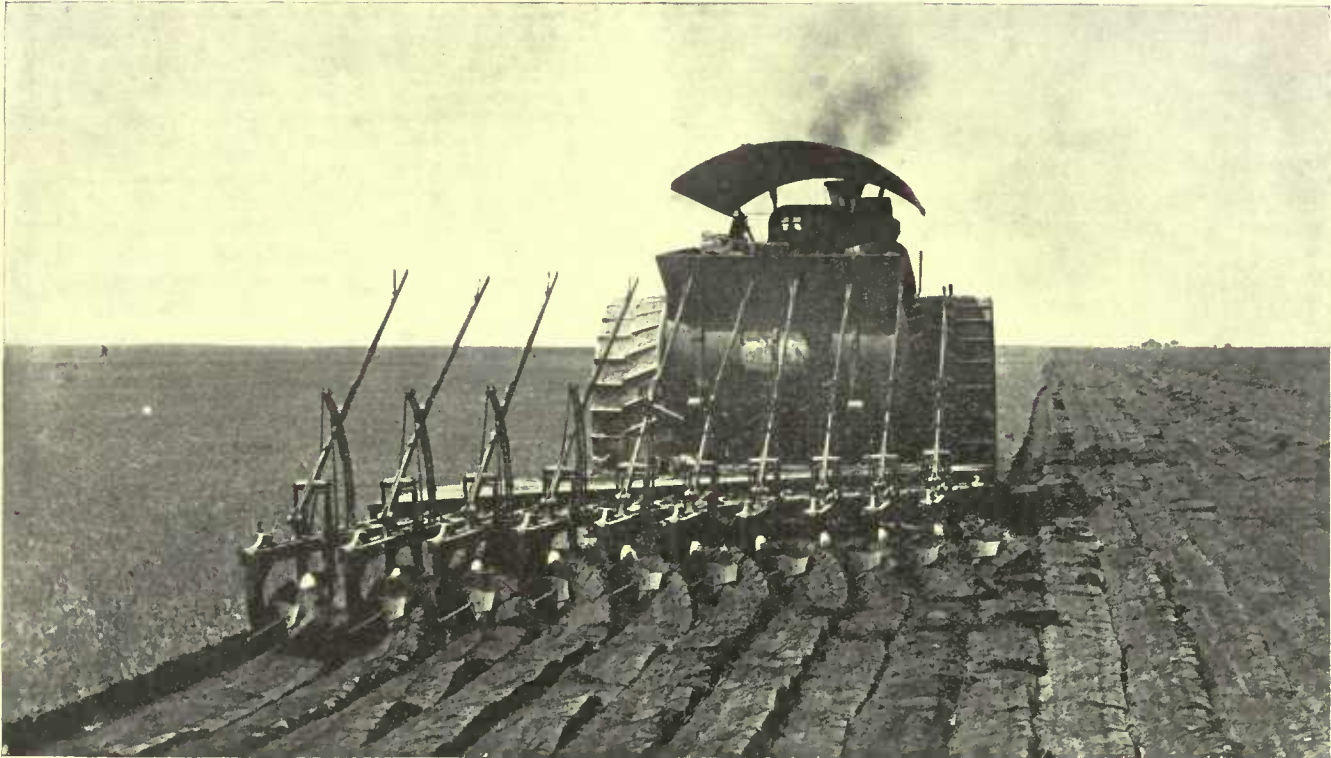
WHILST the railway only consisted of a short line near the coast, the coal problem was not a serious one. But now that there is an ever-increasing line, stretching hundreds of miles into the heart of Africa, the question of fuel is an extremely important one. Wood, which is the only natural fuel, is by no means an adequate substitute for coal, and every foot of the line which is traversed on wood fuel is a weak point in our industrial economy. The possession of oil does away with this difficulty altogether. There is now an ideal substitute for coal, which will cheapen the cost of running the railways and the factories,

and which will act as a strong incentive to increase the railways and factories throughout the territory. Thus the existence of oil can only be of the utmost benefit to the internal progress of Southern Nigeria.

IN a recent number of *The National Review* appears a brief article dealing with "Canada and the British Navy," which deserves the most careful consideration. It is written by

Captain Clive Phillips Wolley, whose writings are widely known and whose knowledge of naval affairs, both in their technical aspect and in their international relation, has been freely placed at the service of his countrymen. Captain Wolley is the President of the Victoria and Esquimalt branch of the Navy League; but it is a pamphlet which has reached him from the Imperial Maritime League which forms the text of his article. "The charge in the pamphlet," writes Captain Wolley, "seems to be that the present Government has reduced our little Army at home by 18,653 officers and men, the Militia by 23,340 officers and men and the Volunteers by 73,726 non-commissioned officers and men; that our horse and field artillery have been rendered

useless by want of horses, and our Navy reduced to a standard which is not, even numerically, that which, upon the best authority, is considered necessary to maintain our supremacy at sea." Taking the facts as they stand, Captain Wolley believes that the time has come for the Dominion to take her part in providing naval defence, and he quotes strong evidence in support of his conviction. Canada, it seems, has the will—she is uncertain as to the way. Nor do the British Government attempt to make any suggestions whatever. In the meantime, as Captain Wolley observes, "Upon naval union and commercial union hang the fate of the Empire; if we are not strong enough to obtain these we are not strong enough to live."



A steam plough breaking the sod on a farm in Southern Alberta, near Lethbridge, in May, 1908. Capacity, 30 acres a day.

NOTES OF THE WEST

IN no part of the West have more wonderful changes been seen than in Southern Alberta. Its vast expanse of slightly undulating, treeless prairie was the favorite haunt of the buffalo. When the American whiskey-traders at Fort Whoop-up were defying the law behind their fortified stockade and growing rich by trading a bottle of vile "fire-water" to the Blackfeet and Cree Indians for ten or twenty buffalo robes—so numerous were the buffalo that a North-West Mounted Police officer, in a description of the westward march of the force to put an end to the lawlessness that prevailed, tells how he was kept awake for hours one night by the noise of a countless herd of these monsters passing near to the police camp. Disease and indiscriminate slaughter exterminated them in five or six years after the police came out, and in the early eighties it was discovered that the sweet bunch grass that the buffalo loved was splendid food for cattle. So Southern Alberta became a great ranching country. Herds of cattle thrived where the buffalo had grown fat. The spread of settlement, however, was already gradually encroaching upon the ranching country when the visit of a party of Mormons from the Salt Lake City district changed the future of Southern Alberta. Professor Card and his party were so struck by the resemblance of the country to the arid regions which they had made fertile by irrigation in the South that irrigation was decided upon. A

company was formed—now part of the Alberta Railway and Irrigation Co.—and in a few years the whole aspect of the country was changed. Water alone was needed to grow immense crops on these sun-dried prairies, and water was now forthcoming in plenty. The virgin soil gave forth fruit abundantly. To-day Southern Alberta is one of the most prosperous districts in the entire West. It has proved to be an ideal fall wheat country. Lethbridge, which is the centre of the district, has grown amazingly and its proximity to the great mining camps in the Rocky Mountains gives a ready market for its produce. There are many British and American settlers in this region and we give a picture of farming operations on a large estate which was purchased some three years ago by a syndicate of British capitalists. One million five hundred thousand bushels of wheat were grown in the Lethbridge district last year. The C. P. R. are building an immense bridge across the Belly River at Lethbridge, which is part of a scheme to shorten the route through the Crow's Nest Pass, which, it is rumored, will, in the near future, owing to its low gradients, be made the main thoroughfare for freight traffic to and from the coast.

The reply of the Premiers of Manitoba, Saskatchewan and Alberta, to the demands of the Western Grain Growers' Association in favor of publicly

owned elevators was issued recently. While admitting a desire to comply with what in many respects they concede to be reasonable demands for a Government monopoly in the distribution of grain, the Premiers assert that the provision of the British North America Act does not grant the Provinces sufficient authority. If the Act is amended accordingly the Premiers will be glad again to enter into negotiations with the association with a view of perfecting the system.

The problem of electrifying the lines of the Canadian Pacific Railway is one that is nowadays considerably exercising the minds of the heads of that company.

The proposal is to make a start by electrifying the mountain lines, utilizing for this purpose the prodigality of water power running to waste on the eastern slope of the Rockies. Freezing causes a great diminution of this power in the winter, and the question is whether what is left would prove sufficient to operate the main line during the winter season.

On the Crow's Nest line this trouble of freezing is not experienced, because of the milder climate. It is on this line that the start is to be made. The line is to be reconstructed as soon as possible, and it is probable that this will soon be followed by electrification. Experiments to this end are now being carried out at Bonnington Falls, on the Kootenai

ney River, where there is immense power. The officials of the company are also studying the electric system already in operation in the United States.

Rev. Dr. Chown, of the department of temperance and moral reform, of the Methodist Church passed through Calgary recently on his way to Edmonton. He has just come from British Columbia. He says that Prince Rupert is the most moral frontier city that has ever been established on this continent.

The Department of Agriculture of the Province of Saskatchewan has issued a bulletin stating that 105,589,643 bushels of wheat, oats, barley and flax were grown in 1908 in Saskatchewan. The wheat yield was 50,654,629 bushels, almost double that of 1907, which was only 27,691,601. Oats jumped from 23,324,903 bushels in 1907 to 48,379,838 bushels in 1908.

Mr. Howard Douglas, Commissioner of Dominion Parks, in Winnipeg recently gave an interview respecting the progress of the parks, speaking particularly of the herd of buffalo kept there. He said that the 340 buffalo brought by the government from Pablo ranch in Montana to Elk Island park, near Lamont, 40 miles east of Edmonton, were doing extremely well. Not a single adult had been lost during the last 12 months. Sixty of the calves born had lived, so that at present the number at Elk island was 400. A few calves had died, but that was directly due to the strenuous rounding-up of the animals and their shipment to the park. The transference in October, 1907, had occupied six weeks and during that time considerable strain had been put upon the animals. In consequence many calves had been born in the depth of winter, a thing which was not likely to occur again.

The remainder of the Pablo herd, 300 in number, Mr. Douglas expected would be shipped about the end of April or the beginning of May next. Arrangements had been made and everything was in shape for the coralling of the buffalo on the Flathead reserve in Montana. He had no doubt at all that the next attempt to transfer the animals would be successful. The plan proposed by Pablo would, he thought, be effective. Pablo's plan was to haul the buffalo one by one to the station instead of their taking the chance of getting away as they did last year.

On that occasion they had rounded up 50 and all but 10 had escaped. Pablo had built 58 wagon-cages into which the buffalo would be loaded singly. Fifty teams would be requisitioned and Pablo calculated that he could take out 25 buffalo a day, thus keeping 25 teams going to the station and 25 returning therefrom. In that way the 300 would be taken out in a fortnight. Their destination was Buffalo park on the G.T.P., 120 miles east of Edmonton on the Battle river. The Government park there

consisted of 110,000 acres, the whole of which was fenced in. As soon as the Pablo buffalo were unloaded at Buffalo Park it was the Government's intention to utilize the N.P. cars with the cages and troughs for taking some 350 of the Elk Island park buffalo also to Buffalo park, thus leaving about 50 animals at Elk island. The Montana cowboys would be engaged to transfer about 75 of the buffalo now at Rocky Mountain park, Banff to Buffalo park as the accommodation at Banff was too small for the number there at the moment. About 25 buffalo would be left at Banff, while at Buffalo park the government would have a fine herd of about 700 animals. Cross fences had been built at Buffalo park for the purpose of interbreeding between the Canadian and Montana buffalo. The park, said Mr. Douglas, was within half a mile of Wainwright, the first divisional point east of Edmonton on the G. T. P., and the point from which it was proposed to run a Calgary branch.

With regard to the new Jasper park, on the G.T. P., on the boundary line of Alberta and British Columbia, Mr. Douglas stated that nothing had been done yet and that it was hardly likely that anything would be done till next year. They were, however, arranging for fireguards around the park in order to prevent any trouble with possible squatters. The other Dominion parks are the Rocky Mountain park, Yoho, Glacier, Buffalo and Elk Island.

Unless all signs are misleading another metropolis is springing up on the prairies of Western Canada. A year ago there was a spot on the lines of construction of the Grand Trunk Pacific without a name or any special significance. But on that spot has sprung up Melville, the operating centre for nearly 1,000 miles of the Grand Trunk Pacific system, and already its population numbers over 1,200 people, with fully modern houses, stores and hotels. In six months its population will have doubled and by the end of the present year it is confidently expected 4,000 people will be living in the future distributing point of Western Canada. Its future as a great city is assured, for it is the centre of one of the richest farming districts of Saskatchewan. By a branch line to be constructed this spring, it will be connected with Regina, the capital of the Province, while another branch will stretch northward to Hudson's Bay, for the Grand Trunk Pacific have selected Melville as the junction city for its Hudson's Bay line, the operating centre for nearly 1,000 miles of main line and some 1,000 miles of branch lines. Eastern manufacturers are already beginning to recognise the importance of Melville as a distributing centre and during the coming spring several huge warehouses will be erected as well as additional divisional shops for the railway system.

From Melville to Europe, *via* the Hudson's Bay, the route is fully 1,000 miles shorter than by all-rail

route to Montreal, and the cheaper water rates will be the means of the bulk of the exports of Western Canada going out of Canada *via* Melville. American cities west of Chicago will also derive a considerable reduction in rates by shipping their exports *via* the Bay and each ton of this freight will be shipped through Melville. Today Melville boasts of daily trains, but within two years branches will be stretching out in all directions, reaching for passengers and freight and distributing supplies.

Apart from rushing main line construction in the North this year the Grand Trunk Pacific is about to formulate plans for building branch lines in British Columbia on a scale of magnitude never dreamt of by the public. Nothing less than the invasions of the Crow's Nest Pass coal district in east Kootenay is contemplated. This project constitutes one of the principal objects of the mission of D'Arcy Tate, assistant solicitor of the Grand Trunk Pacific Railway, who was recently in Vancouver. Necessary authority to build into east Kootenay will be sought at the forthcoming session of the British Columbia legislature. Formal application has been made. The east Kootenay branch line will be an extension of the proposed Grand Trunk Pacific branch lines in Alberta, construction of which, it is announced, will be started early this spring.

"It is the intention of the Grand Trunk Pacific to rush the construction of the main line across British Columbia with all speed," said Mr. Tate. "The hundred miles section east from Prince Rupert will be completed some time in August of this year, and it is likely a new contract for an additional hundred miles of main line from Copper river up the Skeena and beyond Hazelton will be awarded soon.

"Tenders for the construction of an additional 120 miles of main line on the prairies west of Wolf river are now under consideration. The expediency of starting work this spring on sections in the Cariboo district or pushing construction from the Pacific and from the prairies, thus enabling us to forward material and supplies by rail as the tracks are laid, is also now receiving attention, and an announcement of a decision may be expected shortly.

"Vancouver occupies a prominent position in the general plans of the company, and so far as I am aware the linking of our main line with this city by a band of steel will be undertaken as soon as possible."

S. Martineau, Hudson Bay trader at Cold lake, 90 miles north of Onion lake, Sask., reports the killing of a white moose by a Chippewa Indian. The animal was a bull and of enormous size. The Indian has skinned the moose but has the hide whole, with the head and horns attached, and the four legs, so that it can readily be mounted.



Headgates on the Galt Canal near Lethbridge, showing how the flow of water is controlled.



Camp of Blackfoot Indians on their reserve, Alberta.



The Main street of Togo on Sports Day.



An unusual sight in the streets of Togo.

THE TOGO OF THE WEST

ONE may have difficulty in finding Togo on the map, unless the map is a very recent one, because Togo is only five years old. It is, therefore, still in its infancy, but it is a very lusty infant and it is growing every day. This little Western Canadian town, with the formidable Japanese name, is situated on the main line of the Canadian Northern Railway that connects Winnipeg and Edmonton, and it is about 258 miles west of Winnipeg, just within the border of the Province of Saskatchewan. It is the centre of a fine farming country, and the two steel bridges across the Assiniboine River, one to the south and the other to the west, open to the trade of Togo a large section

of country. The two elevators tell one at a glance that wheat is already being shipped. Togo is already doing considerable business, as its stores and shops and hotels indicate. Homesteads can still be obtained in the Togo district, consisting either of unbroken land or improved farms. The district is picturesque and park-like in appearance, and it is well supplied with water, found at a depth of from 16 to 40 feet. An abundance of tamarac and spruce for fuel and building purposes can be obtained in the Duck Mountain district to the north, where employment for a large number of men and teams can be found each winter.

Togo contains three churches and a good public school.



Indians delivering wheat at Regina, Sask.

OF the 110,205 Indians in Canada, only 7,466 have their homes in the great Prairie Province of Saskatchewan. Those in the Southern part of the Province, especially in the older wheat belt, are making considerable progress in agriculture. According to the latest report of the Department of Indian affairs, the Redmen of Saskatchewan last year had a little more than 9,000 acres under crops; they raised 150,572 bushels of grain and roots and 36,000 tons of hay, their crops having a value of \$136,023.

The reports from the southern agencies are, as a rule, encouraging, many showing that the Indians are turning to the

soil for means of livelihood; for instance, in describing the Assiniboine Agency the report states: "I was greatly pleased to find that the area under crop was almost double what it was the year before. The band had about 600 acres of wheat and 200 acres of oats. The Indians of this agency are beginning to farm on a large scale, and if they continue to do as well as they have in the last two years, there will be some good-sized farmers among them. One man had 155 acres in crop, and another 125 acres, and several had 70 acres each. There was a decided improvement in the way the land had been farmed."

Technical Industry in Canada

(Contributed by F. B. BABINGTON of Ottawa.)

AS a new country Canada naturally for a time obtained her technical help elsewhere, employing Englishmen, Germans and Americans. However, that stage of her existence is gradually passing away, largely on account of her protective tariff, under which many industries have found it expedient to establish branches in Canada, which do not import but actually manufacture here. This entails employment of labor, and naturally preference is given to men on the spot. As the need arose more technical help became necessary.

Now Canada through her Universities and Technical Schools—which are second to none—can certainly provide graduates to supply her needs; but such graduates, no matter how capable, lack one essential, namely, practical knowledge. The Old Country, being the great manufacturing centre, has great advantages for a practical man when he leaves his school or university. But the salaries paid there to skilled men are small—hardly over the living wage—owing to the supply being in excess of the demand. Consequently the graduates in the Old Country must look to the larger Empire beyond the seas for a field of employment offering, as it does, greater opportunities to the practical man. But there he must find a vacancy or a demand for his services, and he must be the man for the “job,” for otherwise he will be woefully disappointed. Corporations and business men care nothing about university degrees; they want to see dollars and cents.

Men intending to settle in Canada should not “go it blind,” but should correspond through the Immigration Department or the Department of Trade and Commerce, with the managers of manufactories of whose work the technical man has a practical knowledge, pointing out that by means of his skill and experience he can effect an economy in the manufacturer’s process of production. He must make it clear that in his first year he can save the firm his salary and make a clear gain in the second. In the third year he can dictate his own terms or seek new fields.

Such a man must also be prepared to take things as *they are* and use the resources available, although he may not find a foundry or machine-shop at his elbow. Such a man will “make good,” and the necessity for such a man is yearly becoming more pressing.

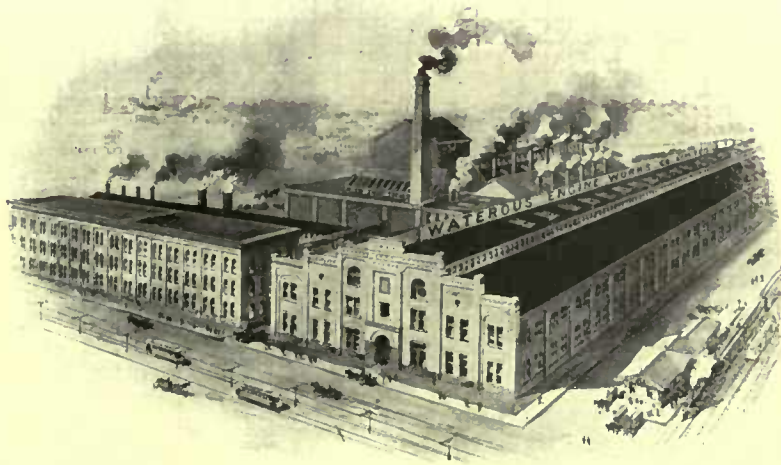
Ten years ago most of the industries here employing technical skill were run by rule of thumb. As competition became keener economy had to be practised by utilizing what previously had been considered a waste-product, and now it often happens that the so-called waste-product is an important commercial article.

Technical men coming here should be careful not to offend by claiming extraordinary knowledge. The only knowledge they will have, possessing any real value, will be their practical knowledge in their own specialty. Their assistants will be Canadians, their equals in theoretical knowledge, and, in my experience, more practical than the average Old Country student. Unless I am mistaken, the newcomers will in a few years become Canadians themselves by adoption.

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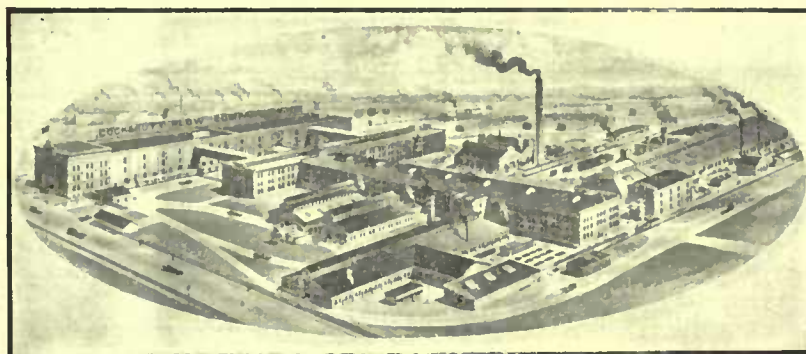


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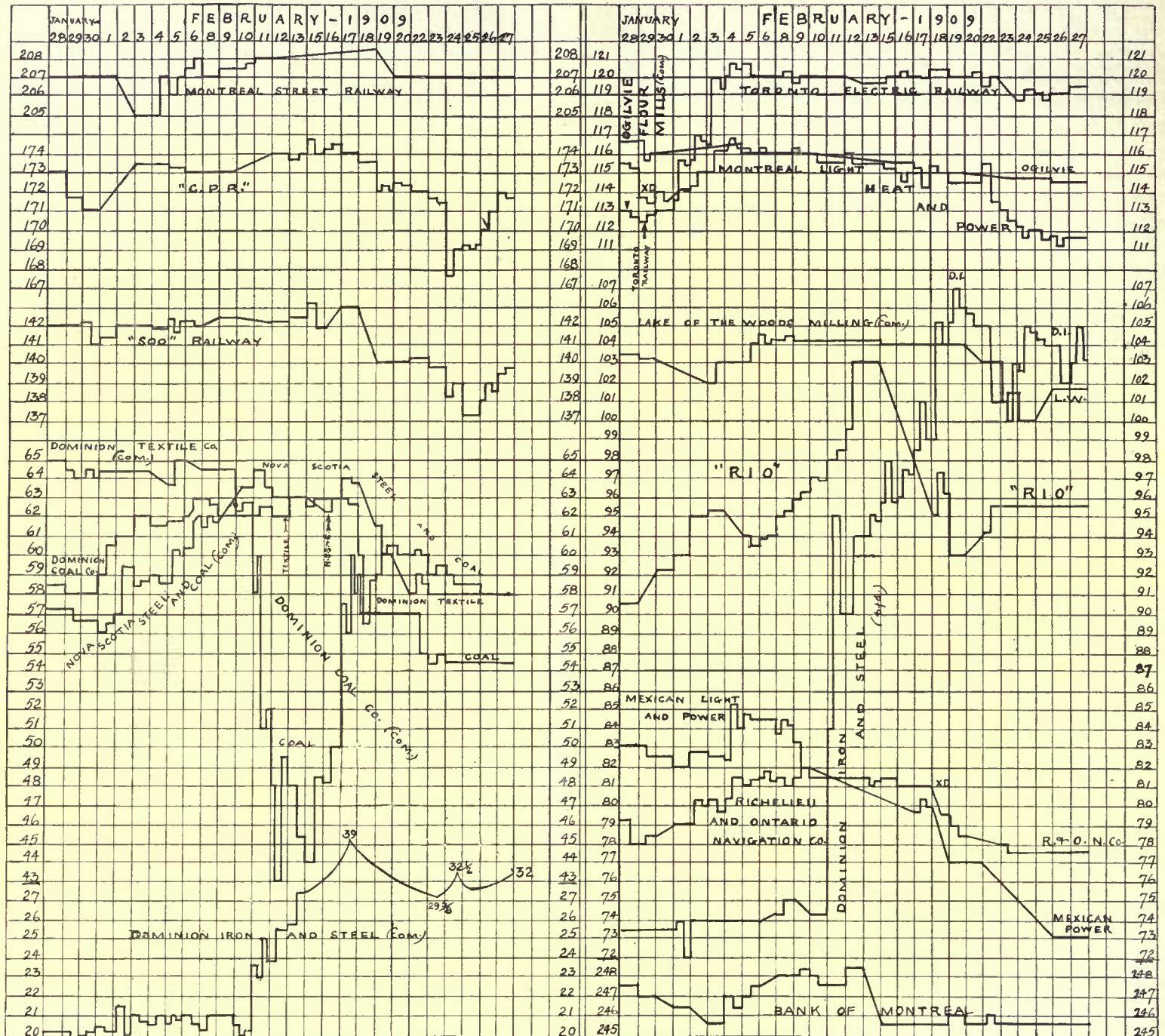
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THE TREND OF THE MARKETS

DURING FEBRUARY

A DAILY RECORD OF THE FLUCTUATIONS DURING THE MONTH



Compiled exclusively for CANADIAN LIFE AND RESOURCES

An encouraging outlook.

A study of the quotations for the active Canadian securities for February, up to the end of the third week, shows that, apart from a few stocks which were affected by special circumstances, the changes have not been important. But, though no general movement has occurred up to the date of writing, there appears to be a well-grounded opinion that the developments in the Steel-Coal question and the final removal of that unhappy dispute would result in stimulating a considerable increase of public interest in the market and perhaps produce a general boom.

At any rate the cable dispatches of the Thursday morning on which the Steel victory was made public were at once followed by a heavy increase in the trading. Naturally the various securities of the Steel Co. were eagerly sought. Popular sympathy has seemed to favor that company throughout the dispute—perhaps because Steel common was more widely held than Coal common—and the judgment was accordingly a popular one.

The Steel-Coal judgment.

Holders of steel preferred were set down as benefiting most directly from the outcome. Their increased prospects of getting part or all of their long deferred dividends boomed the preferred some 17 points at once, and the gain was afterwards increased.

With regard to Steel common the persistently heavy buying since the decision, on a rising scale, naturally caused reports that Mr. Ross and his friends were after a majority. It is clear to everyone that his position and

that of the Coal Co. would be vastly improved through the acquisition of a powerful interest in the Steel Co. Just what is the actual position in this respect will probably not transpire for some time.

Coal common stock, after an initial sensational drop, scored an equally sensational recovery. There is no question but that the general financial situation has been materially bettered by the evident desire of the two parties to reach an agreement that will permit both enterprises to pursue a useful and prosperous career. Before the decision it was thought that one or other would be crippled, perhaps ruined, as an outcome of the struggle. The clearing away of this depressing reflection constitutes a natural and legitimate cause for the cheerfulness of the general market.

Power and Traction stocks.

The dispute over the Mexican Power Co. also seems to be developing in a reassuring manner. Though Sir George Drummond and his party failed in their efforts to secure the retention of the old board, which had interested itself so keenly in safeguarding the minority stockholders, the indications are that their fight was not without avail. The personnel of the new board and the promises made upon its taking office seem to show that the minority interests will not be sacrificed. On this score also the general market feels decidedly better.

Additional cheerfulness was imparted by the promise of 7 per cent dividends made by the Toronto Railway directors at the annual meeting. As this had been partly discounted in January when the stock rose from 108 to

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113, the response in the market was not so great as would otherwise have happened. However, a further rise to 120 was scored.

Canadian Pacific has been quiet, and, much to the disappointment of the bulls in it, has shown no tendency to indulge "in fireworks." For a while it rather showed a disposition to sag. This was afterwards satisfactorily explained through the announcement that some \$3,900,000 of ordinary stock had been marketed in London. The traffic returns continue to be favorable, and with a little further improvement during the spring a good report will be possible for the fiscal year ending June 30th.

The Latin-American issues, apart from Mexican Power, which eased off on cessation of competitive buying, have been strong. Rio advanced some 11 points.

Other sections of the market have been quiet, but will, of course, participate actively if the expected forward movement materializes.

In Toronto the interest in the Cobalt stocks continues steady and Montreal also is putting through a larger number of transactions. Doubtless a little later the mining speculation may receive a fillip from the exploitation of companies formed to operate in the newly-discovered Gowganda district.

That this section of the market is not without its disappointments is shown by the supposed-to-be temporary stopping of dividends by the Silver Queen Co. of Cobalt. It is thought, however, that this episode will be more than counterbalanced by prospective dividend increases.

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The Land I Like the Best

WHEN the glu-glu on de medder 'e was sing 'es little song,
An' de black-bird on de tree-top 'e was call de whole day long
When the partridge she'll be jumpin' an' was run away an' hide,
An' you'll hear de bull-frog callin' to de fella' noderside,
Oh dat's de tam I'm watchin' an I'll listen every-thing,
All the bird an' bush an' flower dey be tole me,
Dat's de Spring.

By'-in-bye up on de mountain me I'll tak me pole wan day
An' I'll rig me up dat feesh-line good an' strong for catch doré,
Den before de daylight wake up I'll be walk seex mile or more,
An' wid David Alex Beauchamp we'll be catchin' feesh galore,
On de swamp we'll see de young deer, and de modder by 'es side,
Drink de water on de cole spring, for she's hot,
Dat's Summer tam.

When de squito an' de black fly bite you hard behin' de ear,
An' beeg tunder storm be comin', spoil yer trip an' make you swear,
Fer de trout dere bitiu' bully, an' you'll not be ab'e to stay
Cos dat tunder man was scare you, an' den fly dere so hungrée.
Oh dat's de tam you're lonesome, fer de bush she smells so fine,
An' your heart feels sore fer leavin' cause dats de good
Ole Summer tam.

But de bes' of all, I lak me, dat's de tam de work's all done,
When de fall she's come along, an' me ole dog 'e smells de gun,
So I'll go h'off before daylight on dat swamp close by de lak',
Lie down dere an' watch for blue-bill, till I'll got de stomach-ache,
Fer dey scare so queek an' lively an' dere flying up so high,
Dat you feel jus' lak wan school-boy, shooting peas,
Off on de sky.

Me I don' know noder countree, ef you'll travel all aroun',
What can beat dis lan' we got here sure, I don't tink can be foun',
On de winter, on de summer, on de fall an' on de spring,
Keep your gun an' line all ready for you sure can catch something.

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With 5 full page illustrations and 20 initial letter designs by Charles W. Jefferys, and cover design in three colors by the same artist. 454 pages. Crown, 8vo., cloth. Toronto, 1906. \$1.25.

The story of "Wacousta" is founded upon incidents connected with the attempt on Fort Detroit by the famous Indian chief Pontiac in the year 1763.

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The Naming of Our New Towns.

IN a recent issue we made reference to a feature of life in Canada which does not receive the attention and the care it should. This is the naming of new towns and railway depots. There is nothing so dreary and dispiriting in a journey through the United States as the names of some of the towns passed. They possess neither local meaning nor anything suggestive of the settlements which they designate. The same haphazard and illiterate method of naming new centres of life is being, in some cases, followed in Canada. Now, there is little excuse for this. In most parts of Canada the indigenous inhabitants, the Indians, gave names to rivers, lakes, mountains and other prominent features of the landscape which were at once euphonious and full of meaning. What could be more sonorous and expressive than *Saskatchewan*, or more musical than *Winnipeg* or more apt than *Assiniboine*. Such words carry us back to the first inhabitants of the country that we know of. They are historic. And as we have said, they are also full of meaning. We would urge upon our railway men and others responsible for the naming of our new towns, that they should restrain their very natural desire to perpetuate their own connection with the building of the railways which are opening up our new territories and look about for some name which has local appropriateness and significance in it. In pursuance of this worthy object, let them, wherever possible select an Indian name. Where this is not available, pick an incident connected with the earliest known history of the place. Examples of such are *Moosejaw*, *Pincher Creek*, *Stand-off*, etc. And if there is no history to help them, then name the new place from its nature or surroundings as was done in the case of *Swift Current*, *High River*, *Bare Hills*, *Stony Creek*, etc. We sincerely hope that in giving names to the depots on the new lines of the Grand Trunk Pacific in British Columbia, Quebec and Ontario some such ideas may be followed. The northern parts of these provinces through which the railway will pass are full of Indians and in most cases their beautiful words can be adapted for our use. It will be very incongruous to find the names of our English railway men scattered about these typically Indian regions.

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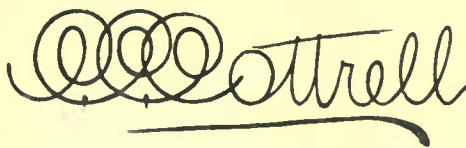
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The Hare of Eastern Canada.

THE following description of the hare of Eastern Canada commonly known as the rabbit, is taken from *the Educational Review* of St. John, N.B., and was written by Mr. W.H. Moore of Scotch Lake, N.B. Mr. Moore writes:

"The hare (*Lepus Sylvaticus*) like the weasel is probably descended through several evolutionary periods from parents that must have experienced great climatic changes, or some other wonderful processes. One is led to this conclusion because these animals change the colour of their fur with the change of the seasons, white in winter and brownish in summer, so that their colour corresponds and blends with their surroundings. The hare is most harmless and inoffensive, so far as weapons of offence and defence are concerned. They however do some damage to the crops of the agriculturist. To some extent they feed upon and trample down clovers and oats; but it is only when they eat the bark from fruit trees that they are regarded as really destructive. Their food consists of grasses and like tender plants in summer, but in winter they have to depend upon the twigs, buds and barks of many varieties of shrubs and trees. Their diet in summer has to be supplemented, it would appear, by such material as gravel. This has always been to me a mystery.

The young are reared during the summer months, and it is quite probable that two or three litters may be produced by one female in a single season. From two to five young comprise a litter. These are cared for by the female for a few weeks and then are left to shift for themselves.

They soon learn many tricks which serve as a means of protection to themselves and others that may be near when danger threatens. On different occasions when a hare has been startled while feeding they have been known to thump upon the ground with their hind feet for the first few jumps as they retreated to cover. When they have been known to make these thumps it was a sure sign that another hare was near and within hearing of this danger signal, which seems to be their only method of audible communication to their fellows. Their cry of distress or fear is a shrill squeak.

The hares are largely nocturnal in their movements, and when not feeding or sporting with their own kind, they sit in some well protected spot, where their colours blend well with surrounding objects. If undisturbed the same "form," the name given to the place or nest where hares sit, is occupied for years. In one instance which has come under observation, the same "form" was occupied, evidently by the same animal, for two years, at the end of that time the occupant was gathered into the banquet-hall of a great horned owl.

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To Subscribers

Since our magazine appeared in its new form we have received many requests from readers for complete sets of back numbers for 1908. We can still fill a few orders at 10c. per copy if sent in promptly.

The "form" has never been occupied since that time; so we may conclude the same animal had its favourite place of rest in that spot for two years. When captured by the owl it was feeding upon twigs of a yellow birch within a few yards of its home.

To be a place of safety the "form" of the hare must be selected with some ingenuity. The number of its enemies is so great that many precautions to ensure safety must be considered. There should be sufficient cover overhead to serve as protection against the keen eyes of the hawks and owls. They must select a place where they can guard their back tracks, to observe any carnivorous animals that may be following them, and at the proper time slip noiselessly from their hiding-place and flee with great speed from the impending danger. If pursued by a fox or lynx their powers of speed are taxed to the utmost. It is only when they have a chance to dodge about in thick cover that they can escape these enemies."

Australia and Imperial Defence.

THE feeling that the self-governing colonies must take a share in the burden of imperial defence is strong in Australia.

The Federal Cabinet has just decided, out of the money granted by last year's vote, to order immediately two torpedo-boat destroyers of the "river" class of the latest approved type. As these will be the first destroyers obtained for Australia, they will serve as models for similar vessels, which it is intended to build locally.

A sum of money is to be allotted for the construction of a building-yard in Australia, in which the first work to be undertaken will be the building of another destroyer.

The need for Canada to take upon herself the defence of her own shores daily grows more apparent. Why do our ministers delay in carrying out the wishes of the people of this nation?

Silver in Gow Ganda

THE property owned and controlled by "Silvers Limited" consists of 174 acres situated on the west shore of Gow Ganda Lake, and includes the famous "ARMSTRONG" fraction, the history of which is said to be known to every man in the north country. Ten men invested \$20 each and "grubstaked" BOB ARMSTRONG, who though the country was staked in every direction, "stumbled" on this fraction and recorded it as Claim 1991. Down its centre is a silver vein from which one nugget weighing 30 pounds was taken. The property was sold for \$100,000, and each member of the Syndicate received \$10,000, for an original risk of \$20.

Arthur A. Cole, the noted Mining Engineer and Geological Expert, in his report says in part, particularly with reference to the "ARMSTRONG" claim, "The country rock on this claim is mostly diabase, in which practically all the valuable discoveries without exception have been made in this district. One vein was uncovered for about 200 feet. It was 6 inches wide and one vertical face three feet high was 2½ inches thick and very rich in native silver."

Since the date of Mr. Cole's report the 200 ft. vein has been uncovered another 100 ft. and at a depth of seven feet the "VERTICAL FACE" referred to had widened to six inches.



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Twenty-six Resident; seventy-six Day Pupils
at present in attendance.

Large Staff of Graduates.

Headmaster

REV. G. P. WOOLLCOMBE, M.A. (Oxon)

Canadian Writers

IN a recent issue of the *Sphere* Mr. Clement K. Shorter writes: "I often think that Canadian writers come off considerably worse in the way of public reputation than those from any other portion of the English-speaking world. American writers reach to speedy fame if they be possessed of interesting qualities. There are a thousand mediums for making their achievements known. From New York to San Francisco they are 'boomed' exceedingly, and it matters little if their names are all but unknown in this country. Among the sixty millions of inhabitants of the United States there is a larger percentage of readers than among the thirty millions of our islands.

Now and again an American author does not receive his deserts with us although that is not our fault. There are many men and women in England who are always anxious to recognise good work—at least in prose. Quite recently, for example, I have discovered a new writer whose books go into many editions on the other side of the Atlantic.

I desire at the moment to say a word in praise of Miss Helen Clergue, who I understand has for many years resided in a remote part of Canada although she owes her intense interest in French literature to the circumstance that she has French blood in her veins. Some of her work I have known for a long time. I particularly value a book entitled *George Selwyn: Life and Letters*, which she prepared some years back in association with Mr. E. S. Roscoe.

At the moment I have before me an admirable volume by Miss Clergue entitled *The Salon*. This is certainly a delightful book. Here are pictures of Madame du Deffand, Madame d'Epainay, Julie de Lespinasse, and Madame Geoffrin, studies of those well-known leaders of the French salon that are full of life and colour, of insight, and of sympathy. The charm of Miss Clergue's book is the introduction recording the evolution of the salon.

Owing to the rapid increase in the export business of the Page Wire Fence Company, of Walkerville, Ont., since the introduction of its "Empire" white fencing for railway, farm and ranch use, it has been thought best to have the foreign business handled by a company of a name similar to that of the fencing, and to this end The Empire Fence Export Company, Limited, has been formed. It is owned and controlled by the same interests that control the old company. The head office and factory will be at Walkerville, Ont.

He Bought Her a 1900 Washer

One of Our Readers Tells How
Her Husband Learned

WHAT WASHDAY MEANS TO A WOMAN

DEAR EDITOR,—Most men have no realization of what "wash-day" means to a woman. My husband is one of the best men that ever lived, but he laughed when I asked him one day to get me a 1900 Gravity Washer. I told him it would wash a tubful of clothes in six minutes. "Why, wife," said he, "a washing machine is a luxury. And, besides, there's no better exercise than rubbing clothes on a washboard. It's good for the back. I think we had better wait till we get the farm paid for before fooling away money on such new-fangled things as washing machines."

That settled it. I gave up the idea and kept right on washing in the same old way. I confess I felt hurt, but I knew John had no notion how hard it was to do the washing for a family of five—three of them little tots. I am not very strong, and the washing with all my other work, finally got the better of me. I had quite a sick spell, and after things had gone at sixes and sevens for nearly two weeks, I suggested to John that he had better do the washing. We couldn't hire a girl for love or money and the situation was desperate.

So one morning he started in. My! what a commotion there was in the kitchen. From my bedroom I occasionally caught glimpses of poor John struggling with that mountain of dirty clothes.

If ever a man had all the "exercise" he wanted, my husband was that man! Couldn't help feeling sorry for him, and yet it made me laugh, for I remembered how he made fun of me when I hinted so strongly for a 1900 Gravity Washer. When he finally got the clothes done and on the line he was just about "all in."

That evening John came to my room and said, kind of sheepishly: "What's the name of the firm that makes those Washers you were telling me about?" I looked up their advertisement and found the following address:

The secret of the easy operation of the 1900 Washer is in the peculiar "S" shaped links, which no other washer can have; then it has no iron to come in contact with the clothes and also has a removable tub, which is a great convenience.

L. R. N. BACH, Manager,
The 1900 Washer Co.,
357 Yonge St., Toronto, Canada.

That's all he said, but he lost no time in sending for their Free Washer Book. The book came in due time, and with it an offer to send the 1900 Gravity Washer on thirty days' free trial. My husband jumped at the chance to try the Washer without having to spend a cent. "We'll have four weeks' use of the Washer anyway, even if we don't decide to keep it," he said. So he told the company to send on the Washer.

It was sent promptly, all charges paid, and the 1900 Washer Company offered to let us pay for it in little easy payments. The next week I felt well enough to use it. It is the nicest Washer I ever saw, and it almost runs itself. Takes only six minutes to wash a tubful, and the garments come out spotlessly clean.

We were all delighted with the Washer, and wrote to the company that we would keep it and accept their easy payment terms of 50 cents a week. We paid for it without ever missing the money, and wouldn't part with the Washer for five times its cost.

If women knew what a wonderful help the 1900 Gravity Washer is, not one would be without it. It saves work and worry and doctors' bills. Takes away all the dread of wash-day. I feel like a different woman since I have quit the use of the washboard. If any woman's husband objects to buying one of these labor-saving machines, let him do just one big washing by hand-rubbing on the old-fashioned washboard, and he will be only too glad to get you a 1900 Gravity Washer.

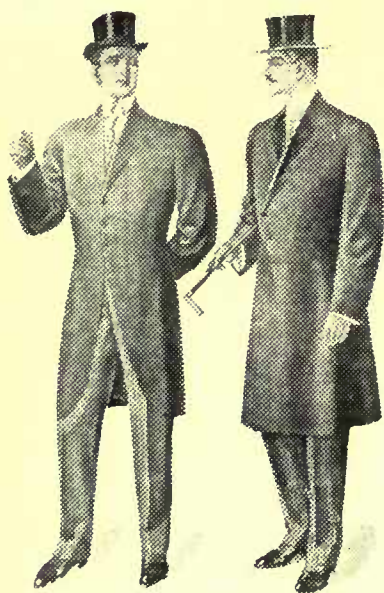
Anybody can get one on free trial by first writing for the Washer Book.

Don't be talked into buying any other machine—there are many imitations, but none "just as good" as the 1900 Gravity Washer.

Excuse me for writing such a long letter, but I hope, Mr. Editor, you will print it for the benefit of the women readers of your valuable paper.

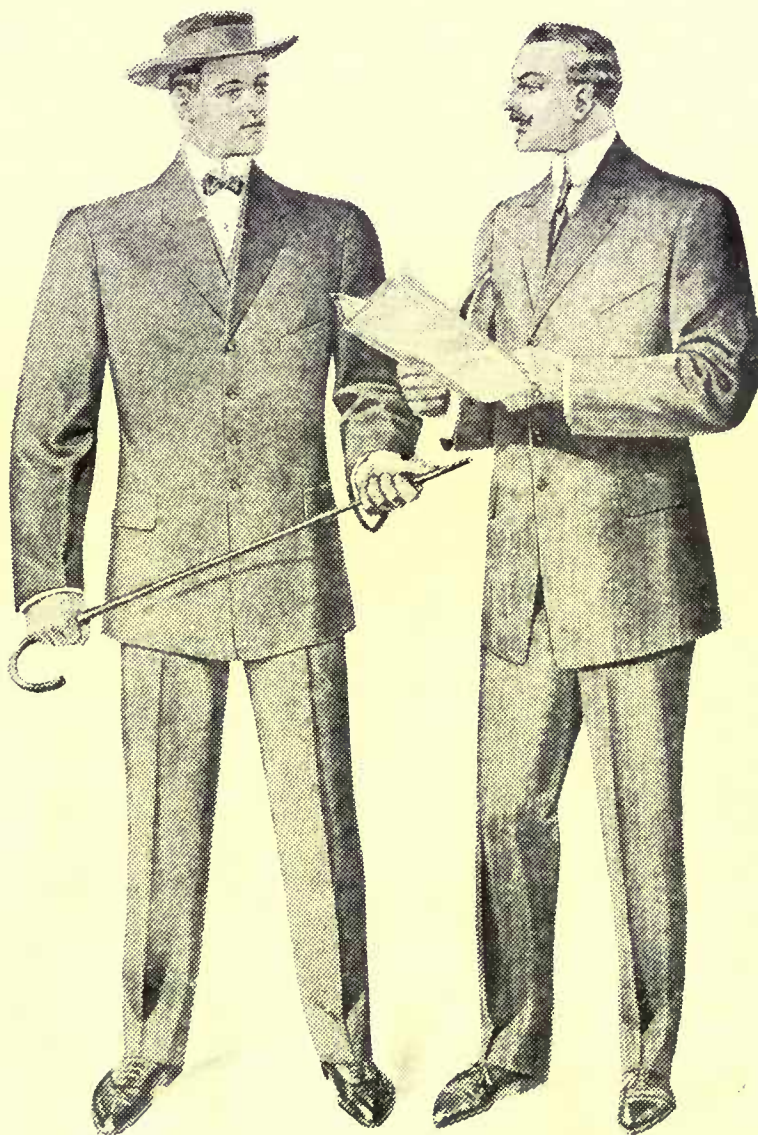
Sincerely yours,
MRS. J. H. SMITH.





The Plus Mark

+



Trade Mark
and price in the pocket
of every Coat.

200 Semi-ready Stores
in Canada.

Merchants desiring sole right
to sell Semi-ready Clothes
should write at once.

¶ Semi-ready Tailoring offers you all the advantages of the made-to-measure Clothes plus (+) the fact that you can know just how it will suit you when it is made up. You can't know this in the web of cloth.

¶ Plus again +. Up to the moment that it is exactly right the Semi-ready tailor can add to and subtract from the garment, and make corrections until he and his customer are both satisfied. He can build up the sunk-in spots, straighten a stoop, accentuate chest, diminish corpulency—for our physique type system is founded on the proportions of anatomy, and he has the secret of the true art in the craftsmanship.

¶ Semi-ready Suits can be finished in two hours—and the man who has to wear them feels that his suit has been designed and made for him.

¶ When the Suit is sent home it is shaped right, and the right shape stays, for it is wrought into the garment by men tailors who have grown expert.

¶ That is why Semi-ready Garments are not only satisfactory at the outset, but up to the last days the garments are in use. 'Tis why we can put a real guarantee in the pocket of every Suit we make.

¶ And the cost. If the way of to-day saves you \$5 to \$15, wouldn't you just as soon join the throng who know now.

This is the Modern Custom Tailoring—
for we study your every interest in every way.

Semi-ready Tailoring

492 Guy Street, Montreal



JJ GOULD et

"Why the rubber wasn't played."

Until you have heard Amberol Records, you have not heard the Edison Phonograph at its Best

Edison Amberol Records have made the Edison Phonograph a more fascinating entertainer than it was before. They have added richness and sweetness to its tone, increased its repertoire of songs and music, and enabled it to give to more people more of the kind of music they enjoy.

Consider the increased enjoyment of a record that plays or sings four minutes—without the necessity of changing records—twice as long as the regular Edison Record; and longer than any other record made.

Amberol Records open an entirely new field of music for Edison Phonograph owners. They offer music which by reason of its length cannot be secured on any other record. They offer not only a wider range of music, but a higher grade and a better rendition of songs, instrumental pieces, and operatic selections than has up to this time been possible.

The tone of the Amberol Records is matchless. The new composition of the Record which permits the placing of twice the number of threads to the inch is such that Amberol Records have a clearer, richer tone and more delicate interpretation than that of any other Edison Records, which means that they are superior to all Records.

There are new selections every month for the Amberol Records as well as for the regular Edison Records.

Go to your dealer and hear the Edison Phonograph play an Amberol Record.

Every Edison Phonograph in existence, except the Gem, can easily be equipped to play Amberol Records without in any way interfering with the playing of the regular Edison Records. Your dealer has the attachment and can equip your Phonograph with it. All new machines are equipped to play both kinds of Records.

One of the greatest pleasures which the Edison Phonograph affords is making records at home. The Edison is the only type of machine with which this can be done.

Ask your dealer or write to us for illustrated catalogue of Edison Phonographs, also catalogue containing complete list of Edison Records, old and new.



NATIONAL PHONOGRAPH COMPANY, 119 Lakeside Ave., Orange, N.J.

New York, 10 Fifth Ave.; London, Victoria Road, Willesden; Sydney, N.S.W., 340 Kent Street; Mexican National Phonograph Company, 4a Tacuba, 33 (antes Sta. Clara, 20 1-2), Apartado 2117, Mexico, D. F. Mexico; Buenos Aires, Via-monte 515; Berlin, Sud Ufer, 24-25; Paris, 42 Rue de Paradis.