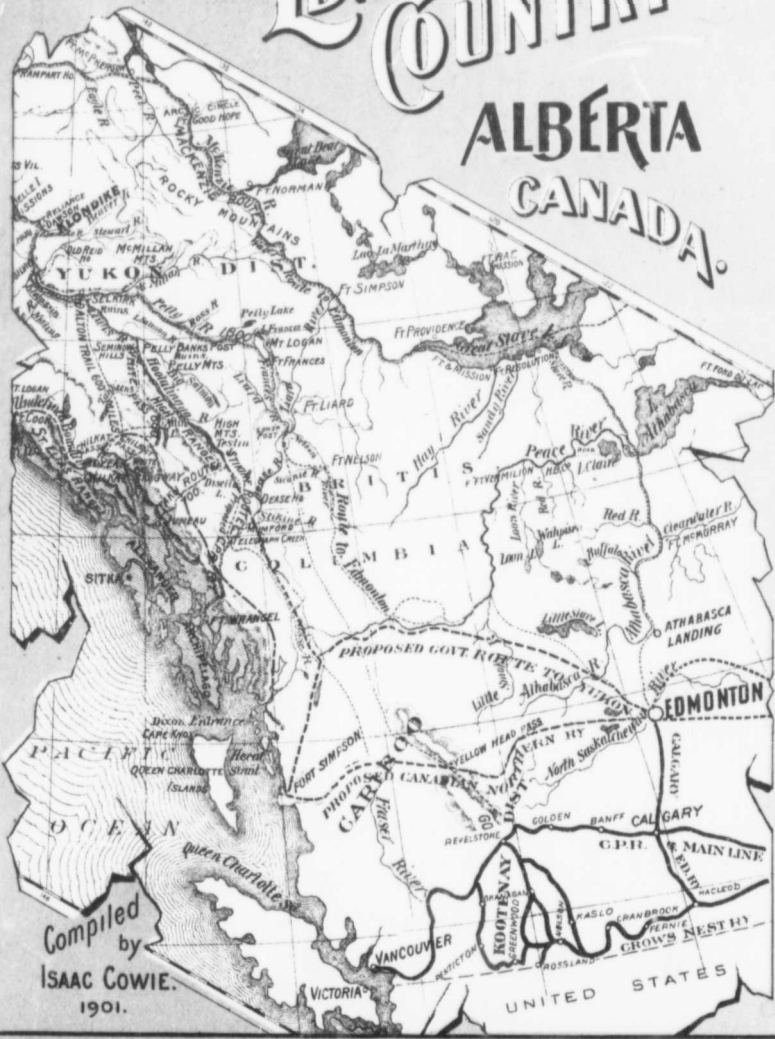


The Agricultural & Mineral Resources

OF THE EDMONTON COUNTRY

ALBERTA CANADA.



Compiled by
ISAAC COWIE.
1901.

Canadian Pacific Railway Company.

Lands in the Edmonton District.

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N hf and SE qr 35	451 acres, 8 00 "

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The Edmonton Country.

SOUTH-WESTERN CANADA.

PART FIRST.

Compiled in 1897 by Isaac Cowie, then President of the Edmonton Board of Trade, and Revised in 1901.

CHAPTER I.

Edmonton's Markets in British Columbia.

In the southwestern corner of the vast Dominion of Canada, lie the gold fields of Kootenay and Cariboo, on the west, and the grass and grain fields of Alberta on the east of the Rocky Mountains. British Columbia is the mineral treasure house of the Dominion, and Alberta is a pasture and a granary at its doors. The wondrous wealth of the Kootenay has within the last two years attracted world-wide attention; and the former fame of golden Cariboo is being rapidly revived owing to the introduction of improved mining methods. The mining developments, population and consequent demand for agricultural products are increasing by leaps and bounds, affording for Alberta produce a home market in the mines within a short railway haul of farm and ranch.

REDUCED FREIGHT RATES.

The Canadian Pacific Railway Co., recognizing the mutual natural dependence on each other of the mining country for supplies and the farming country for a western market, have lately (February, 1897,) so reduced their freight rates (practically 50 per cent.) on produce from Alberta to British Columbia as to render the business of farming in Alberta more prosperous and profitable than in the past to those engaged therein. To enable production to keep pace with this demand, agriculturalists who contemplate emigration are invited to come to Alberta and participate in the new era of increased prosperity which has dawned on the district.

To describe the mixed farming district of Alberta is the purpose of this publication; but, before proceeding to do so, a few facts regarding the Kootenay and Cariboo markets must be given.

The output of the Kootenay mines rose from \$2,240,781 in 1895, to \$4,157,162 in 1896; and during the first two months of 1897 it amounted to \$1,400,000. That of reviving Cariboo increased from \$282,400 in 1895, to \$384,500 in 1896. As these districts are only in the infancy of their development, the output in a few years must become prodigious. Into the district of West Kootenay alone there were imported from the United States (in spite of heavy protective duties, but before the recent general reductions in Canadian Pacific Railway freight rates from Alberta) during the eleven months ending June 30, 1896, the following produce, all of which is producible in Alberta:—

	Quantity.	Value.
Bacon and hams, lbs.....	395,866	\$35,586
Hay, tons	2,085	20,593
Oats, bushels	59,305	15,319
Horses	405	11,688
Potatoes, bushels	24,835	7,857
Flour, barrels	4,500	11,551
Butter, lbs.	40,353	7,564
Fresh vegetables	—	7,065
Eggs, dozens	156,988	19,907
Condensed milk, lbs.....	176,718	16,639
Sheep	3,955	6,968
Fresh meats, lbs.	141,448	6,886
Live hogs, lbs.	203,789	5,925
Lard, lbs.	57,418	3,970
Poultry	—	3,703
Bran and mill feed	—	1,908
Salted meats, lbs.	26,590	1,840
Oatmeal, lbs.	67,777	1,643
Pickles, gallons	2,628	1,131
Fresh mutton, lambs, lbs....	15,533	1,056
Wheat, bushels	2,054	955
Horned cattle	38	668
Barley, bushels	613	688
Cheese, lbs.	4,453	569
Honey, lbs.	5,053	537
Hops, lbs.	1,838	314
Total value	—	\$826,234

Whilst from the Canadian side, from the 1st of January to the 31st of August, 1896, there were imported into the same district:—

	Tons.
Animal products	124
Dairy products, including eggs.....	152
Live stock (about 1,600 head).....	898
Mill products	895

These imports show a continuous increase month by month, quarter by quarter, and year by year.

CANADIAN FARMER PROTECTED.

The Canadian farmer is protected by duties levied on produce coming from the United States by customs duties on oats, 10c. per bushel; barley, 30 per cent.; wheat, 15c. per bushel; bran and mill feed, 20 per cent.; oatmeal, 20 per cent.; wheat flour, 50c. a barrel; potatoes, 15c. per bushel; fresh vegetables, 25 per cent.; eggs, 3c.; butter, 4c.; cheese, 3c.; bacon and hams, 2c.; salted meats, 2c.; fresh mutton, 35 per cent.; other fresh meats, 3c.; lard, 2c.; honey, 3c.; hops, 6c.; condensed milk, 31-4c.; pickles, 35 per cent.; poultry, 20 per cent.; live hogs, 11-2c. per pound; sheep, 20 per cent.; cattle, 20 per cent.; horses, 20 per cent.

The prices of produce fluctuate, but an example of the wholesale prices obtainable at Sandon, a typical mining point in West Kootenay, in September, 1896, is given below:—Feed oats, \$20; potatoes, \$20; timothy hay, \$25; onions, \$40; cabbage, \$30; carrots and turnips, \$25 per ton of 2,000 lbs.; eggs, 16c. to 22c. per dozen; creamery butter, 18c. to 22c.; dairy butter, 17c.; breakfast bacon, 101-4c.; dry salt, 101-2c.; clear side, 8c.; hams, 121-2c. per lb.

The Canadian Pacific Railway freight rates from Edmonton to Sandon on the above products now are:—Grain, vegetables and hay, \$7 per ton in car loads; bacon, butter and eggs, 1 cent per lb. in car loads, and 17-20 cents per lb. in less than car loads.

With the exception of beef and mutton, Alberta does not yet raise enough of the produce suitable for and demanded by the West Kootenay alone, and at the present rate of increase the production will keep far short of the demand.

The nearest natural market for Alberta produce is in the East Kootenay district, which, while possessing its full share of mineral wealth, has not at-

tracted anything like the attention to West Kootenay owing to the lack of railway communication. This long-felt want is about to be supplied by the construction, now in progress, of the Crow's Nest Pass Railway, (*) which will not only unlock the treasures of East Kootenay, but also enormously benefit the West Kootenay as well, and give to the producers of Alberta direct and continuous railway connection with such important centres as Nelson and Rossland, where at present the Alberta producer has to compete with Americans having the advantage of short and direct railway communication between their collecting point at Spokane and these great distributing centres—Nelson and Rossland.

Though the greatest mining development has occurred in the West Kootenay, the excitement has spread all over the Province of British Columbia, which may be well described as a "Sea of Mountains" of gold and silver. Prospects long dormant are being developed and new deposits are being found daily throughout the Province.

In Cariboo great developments in the treatment of gold-bearing gravels are taking place. It is the opinion of competent judges that the Cariboo is naturally a much richer mineral country than the Kootenay. Want of a railway has alone kept back its development. When this line reaches Edmonton, producers will then have, by the Yellow Head Pass, a short and direct communication with Cariboo and the Pacific, on the shores of which an illimitable market will be found for any surplus over the requirements of British Columbia.

CHAPTER II.

Edmonton.

"Edmonton," the original name, and that by which the whole district is still well known, is, for convenience, and except otherwise indicated, used throughout this work to designate that portion of the District of Alberta which now comprises the new local electoral districts of Edmonton, St. Albert, Victoria, Wetaskewin, and Red Deer.

The town of Edmonton, which is about the centre of the district, is in latitude 53 deg. 29 min. north, and longitude 113 deg. 49 min. west. It is, therefore, as

* (Note—Since completed.)

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far south as Dublin in Ireland, Liverpool and York in England, Hamburg in Germany; further south than any part of Scotland, Denmark, Norway or Sweden, and 455 miles further south than St. Petersburg, the capital of Russia.

The western countries of both the old and new world enjoy a great advantage in climate over the more eastern portions, owing to the effects of the Gulf stream in Europe and the Japan current in North America. The isothermal line which passes through New York on the Atlantic coast in latitude 40 deg. north, comes out on the Pacific at Fort Simpson in latitude 54 deg. 30 min., one degree further north than Edmonton. The effect of altitude on climate is well known. Alberta slopes from a high elevation at the international boundary to 3411 feet at Calgary, and down to 2213 at Edmonton. Its low elevation, together with the length of daylight during the period of growth, combined with its fertile soil, renders it one of the richest agricultural portions of the world.

The scenery is of varied beauty. No stern, rugged and awful mountains, nor long, dead monotony of flat, treeless prairie, strain the vision here. Level and rolling prairie, hill and dell, clad in grass and flowers, dotted with groves of aspen, poplar and spruce, delight the eye. Lakes, lakelets and ponds reflect the bright blue skies above, and the deep and magnificent valleys of the great Saskatchewan and other smaller but not less beautiful water courses lend boldness to a landscape of otherwise ideally pastoral prettiness. Now only when in verdure clad is the country lovely, for the white raiments of winter lend to the prospect a new and additional charm of indescribably pure beauty.

Nature, not content with providing those grand agricultural resources, which it is the purpose of this work to describe, has also conferred on the country vast mineral wealth, the possibilities of which are now only beginning to dawn on the minds of the people. Inexhaustible supplies of coal underlie the whole country and crop out on the sides of the valleys.

Gold dust of exceeding fineness, both in size and quality, has for over thirty years been washed out of the sands of the Saskatchewan river for 100 miles above and 200 miles below Edmonton, during low stages of water, by individual miners, using only the primitive

shovel and grizzly. Recently investigations have been made, with the result that some of the newest and best dredging and gold-saving machinery has been put in operation.

Those best informed on the subject consider that the dredging of the river bed and the adjoining flats and the hydraulic sluicing of the terraces of the valley will yield enormous profits to capital skilfully applied.

THE NORTHERN OUTLET.

To all these gifts of nature—climatic, agricultural and mineral—have been added unique geographical advantages. Whilst the Calgary & Edmonton branch of the Canadian Pacific Company's trans-continental railway is that which now connects the district with the commerce of the world, it is not the only commercial route for the exports of the district. Starting at the end of the Edmonton and Athabasca waggon road (90 miles long) the navigable waters of the great Mackenzie basin flow north for 2,000 miles to the Arctic Ocean. Along this immense route, on which steamboats ply, and its endless tributaries, there exists a large and growing demand for agricultural products in exchange for the rich furs and peltries of this great fur reserve of Canada. Upwards of \$100,000 of these furs are annually marketed in Edmonton, and this sum does not include the much larger collection of the Hudson's Bay Company, whose posts still practically control the trade of that great wilderness. In this Great Beyond, men of science believe in the existence of a continuation of those metalliferous deposits which occur on Lake Superior, Rainy River and Lake of the Woods, and of those of the Canadian-Yukon. No thorough investigation into these latent possibilities has as yet been made, save in the case of the petroleum deposits of the Athabasca, where the Dominion Government has tested a field which may possibly contain the largest supply of rock oil in the world.

THE EASTERN OUTLET.

Besides the northern outlet by water, there is also that to the east down the Saskatchewan by steambot to Lake Winnipeg, from whence the people of Manitoba propose so improving the old row boat route as to be navigable by steamboats to the Atlantic ports of Nelson and Churchill on Hudson's Bay. The Saskatchewan river, running through the Edmonton district, was in the days of

the fur trade the main route for all imports and exports, and, although the fleet of steamboats, which, up to the time the railway tapped the Saskatchewan valley, busily plied on the river, now lie idle, as population and development advance the river will again be utilized more and more. Coal is certain to be shipped that way; and the Edmonton farmer will be afforded the choice of an eastern as well as a western market, whenever Manitoba secures the opening of the Hudson's Bay route, and the Canadian Northern Railway from Lake Superior to Edmonton is completed.

THE WESTERN OUTLET.

Finally to the west the Rocky Mountains open their portals and invite, by the lowest and easiest grade in Alberta, the construction of a railway through the Yellow Head Pass to Cariboo and the Pacific coast beyond. This, again, is an old natural route frequented by the fur traders. It is expected that the Canadian Northern Railway Company will, on reaching Edmonton, immediately continue their line by this route to the Pacific coast.

On account of its agricultural resources and its ready markets therefor; its gold and coal; its climate and beauty; its geographical position, at which so many important natural routes converge, the Edmonton district attracted settlers, who had a continent to choose from, before the advent of railways.

CHAPTER III.

Source of Information.

In 1896 the Edmonton branch of the Western Canada Immigration Association sent a series of printed questions to farmers throughout the district, to which fifty-two replies were received. It being impossible to publish each reply separately, the answers have been compiled, and the results embodied in this work, in which it is attempted to combine these experiences and opinions for the benefit of farmers in other countries who may contemplate emigration. The publication of the names and address, which follow, is an absolute guarantee that the information is honest, disinterested and reliable. Only five out of the fifty-two objected to the publication of their names, fearing the correspondence such publication might entail on them would be too great a tax on their time.

It is proper to say here that, while

facts reduced to figures are easily compiled and arranged, other facts and opinions expressed in words and phrases cannot be given in so condensed a form. Moreover, as the value of the work depends on its faithfully giving the evidence as nearly as possible in each man's own words, so that the intelligent reader may be able to form his own opinion, no apology is required for copious extracts from the replies.

The reader is desired to bear in mind that the replies came from a large tract of country—120 miles long from north to south, and 66 miles wide from east to west; from men of short and long residence; and from new and old settlements, thus giving rise to varied experiences and, what might seem without this explanation, contradictory statements. As a rule, the compiler has found the most favorable testimony given by the older settlers from the older settlements, while that least favorable came from the new settlers (especially bachelors) in new settlements, whilst experimenting towards success.

The reader is also requested to note that the information applies only up to the early spring of 1896—after two dry years. Information including the splendid crop of 1896 would be of a very much more favorable character, especially from the new comers, than that embodied herein. Though the period of change from a community which received high local prices for every production before railway communication was established, to that of one in which prices became reduced to the level of outside markets, plus freight, and finally to one which had a surplus for export which heavy railway freights rendered unprofitable, was a trying one; yet the farmers continued to prosper, as will be shown by their own statements hereafter. Moreover, with reference to these statements, it must be continually borne in mind by the reader that they were made during the hardest times and after two of the driest seasons the district has ever passed through, and before the new era of prosperity which has now (1897) dawned on the country by the reduction of fifty per cent. in freight rates to the ever-increasing markets of Kootenay and Cariboo.

Some questions were not fully replied to by the farmers, and in such cases it has been necessary to go to the best special authorities for the supplementary information required; but the main ob-



C. W. Mathers, Photographer, Edmonton.

VIEW OF SASKATCHEWAN RIVER FROM SOUTH BANK, SHOWING SAW AND GRIST MILLS
AND THE TOWN OF EDMONTON IN THE BACKGROUND

ject has been to let the farmers within the district speak to farmers without the district.

The names, addresses, etc., of the gentlemen to whom the public is indebted

for the information are given below, preceded by the number which is used in referring to any of them individually in quoting any special experience throughout the book.

Reference No.	Name and Post Office Address in Alberta.	Birth Place and Previous Residence.	Years experience of farming in Alberta.	Years experience in Alberta & elsewhere
1	Alex McLay—Horse Hills.....	Scotland—Dakota, U.S.	5	15
2	T. P. Lindley—Stony Plain.....	Wisconsin—U. States	4	20
3	T. G. Hutchings—Poplar Lake.....	Ontario—Ontario	15	15
4	Wm. Storie—Clover Bar.....	Ontario—Ontario	12	12
5	Thos. Hyslop—Clover Bar.....	Scotland—Ontario	2	2
6	Thos. Daly—South Edmonton.....	Ireland—N. W. T.	13	13
7	Wm. Mitchell—Belmont.....	Ontario—Ontario	6	30
8	J. McKernan—South Edmonton.....	Ontario—Ontario	14	14
9	Refused to reply.			
10	Rabbit Hills	Ontario—Ontario	9	9
11	R. McKernan—South Edmonton.....	Ontario—Ontario	19	19
12	W. Cust—St. Albert.....	Ireland—California and B. C.....	19	20
13	St. Albert.....	Ontario—Ontario	8	20
14	E. Brosseau—St. Albert.....	Quebec—British Columbia ..	10	12
15	A. Arcand—St. Albert.....	Quebec—Ontario	16	16
16	Alex. Adamson—Clover Bar.....	Scotland—Ontario	12	16
17	W. H. Howard—S. Edmonton.....	England—Kansas, U.S.	1	14
18	J. H. Graham—Belmont.....	Quebec—Ontario	3	3
19	G. Sutherland—Stony Plain.....	Scotland—N. W. T.	6	6
20	R. Dinwoodie—South Edmonton.....	Scotland—Dakota, U.S.	4	14
21	Ed. Dean—Poplar Lake.....	Ontario—Ontario	2	2
22	F. S. Ellett—Sandy Lake.....	England—England	8	8
23	T. G. Pearce—Clover Bar.....	England—Ontario	4	20
24	E. C. Dawson—South Edmonton.....	England—Nova Scotia	8	40
25	J. Tough—Long Lake.....	Ontario—Ontario	4	25
26	J. Inkster—South Edmonton.....	Manitoba—Manitoba	14	15
27	W. H. Pearce—Beaver Lake.....	United States—United States..	3	3
28	D. B. Wilson—Sturgeon.....	Ontario—Ontario	13	30
29	W. Daly—Clover Bar.....	Ireland—Ireland	13	20
30	J. Harold—Sturgeon	Scotland—Scotland	8	20
31	P. Flynn—St. Albert.....	Ontario—Ontario	8	20
32	D. A. Latimer—Sturgeon.....	Ontario—Ontario	3	3
33	J. McPherson—Stony Plain.....	Ontario—Ontario	14	14
34	C. C. Ellett—Sandy Lake.....	England—England	8	8
35	P. Labrie—Morinville	United States—United States..	6	15
36	J. McDiarmid—Poplar Lake.....	Scotland—Scotland	3	3
37	J. Borgwaret—Horse Hills.....	Germany—Nova Scotia.....	5	7
38	J. Kirkness—Belmont	Scotland—N. W. T.	15	15
39	J. Northcote—S. Edmonton.....	England—England	2	20
40	Carl Madu—Stony Plain.....	Poland—Manitoba	4	20
41	M. Emberston—Ft. Saskatchewan.....	United States—Idaho	3	20
42	—S. Edmonton	England—England	2	2
43	—Sturgeon	Ontario—Manitoba	4	12
44	J. B. Adamson—Clover Bar.....	Scotland—Scotland	7	7
45	A. W. Hunt—Beaver Lake.....	Iowa—Nebraska	3	25
46	H. N. Quebec—St. Saskatchewan.....	Ontario—Ontario	4	27
47	W. S. Edmiston—Clover Bar.....	Scotland—Scotland	9	9
48	Rev. C. H. Andras—Wetaskiwin.....	England—England	2	2
49	F. E. Wilkins—Red Deer.....	Illinois, U.S.—Illinois, U.S.	7	7
50	M. M. Johnston—Stony Plain.....	Ireland—United States	3	20
51	N. J. Jevning—Beaver Lake.....	Norway—Minnesota	2	20
52	J. S. Gross—Morinville.....	Wisconsin—South Dakota	2	25
53	P. B. Anderson—Beaver Lake.....	Norway—Minnesota, U.S.	2	12

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Their ages were from 26 to 67; average age, 43. Forty-five are married, one a widower, and six single. Their families consist of 100 male and 87 female children.

Their religion:—1 none, 1 Christian, 3 Lutherans, 7 Roman Catholics, and 40 Protestants.

Their previous occupations were:—23 farmers, 1 rancher, 1 clergyman and professor of agriculture—(48), 1 clerk, 1 mechanical engineer, 1 cabinetmaker, 1 shoemaker, 1 analytical chemist, 3 carpenters, 3 laborers, 1 none previous, 2 shepherds, 1 gold miner, 1 fruit grower, and 1 civil engineer.

Their present occupations are:—All farmers, except one (24), who is a land surveyor, while three others combine the business of farming with the duties of a clergyman, an architect, and a merchant, respectively.

The places of birth were:—15 Ontario, 10 Scotland, 9 England, 4 Ireland, 2 Quebec, 1 Manitoba, 7 United States, 2 Norway, 1 Russia, and 1 Germany.

Their residences immediately previous to settling in Alberta were:—20 Ontario, 13 United States, 6 Manitoba and N. W. T., 4 England, 4 Scotland, 2 British Columbia, 2 Nova Scotia, and 1 Ireland.

The settlements and number of people heard from therein were:—Sturgeon 4, Morinville 2, Fort Saskatchewan 1, Lewisville 1, Horse Hills 2, Stony Plain 5, Poplar Lake 3, Clover Bar 7, South Edmonton 9, Belmont 3, Rabbit Hill 1, St. Albert 5, Sandy Lake 2, Long Lake 1, Beaver Lake 4, Wetaskiwin 1, and Red Deer 1. Owing to the wide range of country covered—120 miles north and south by 66 miles east and west—their experiences are varied.

The date of settlement ranges from 1875 to 1895.

The average time they have been engaged in farming is 14-2 years, of which an average of 8-4 years represents their experience in Alberta.

CHAPTER IV.

Climate—What the Farmers Say.

What is your opinion of the climate
GENERALLY?

Forty-five replied to the question. The replies were:—25, good; 3, excellent; 1, unsurpassed; 1, unequalled; 1, fair; 1, temperate; 1, well pleased; 1, pleasant to most people; 1, on the whole good; 1,

best in Canada; 1, very healthy; 2, healthy; 1, good and healthy for man and beast; 1, entirely healthful, especially for those with lung and throat affections; 1, healthful, bracing air, plenty of sunshine, no bad storms such as tornados and blizzards; 1, taken as a whole, I don't know a better climate for man and beast, and I have known all Europe, part of Asia, and much of America; 1, very changeable; 1, cold. Seven made no reply.

SPRING ?

Eleven did not answer. Forty-one replied:—17, good; 1, perfect; 1, nice; 1, temperate; 1, excellent; 1, generally good for seeding; 4, very favorable; 1, windy, otherwise all right; 4, late; 1, backward and windy; 1, cold and backward; 1, cold nights, 1, rather cool; 2, dry and cold; 1, dry; 1, rather dry; 1, variable; 1, changeable; 1, usually dry, but melted snow supplies moisture to the soil; 1, rather cold and dry generally; 1, backward.

SUMMER ?

Nine did not reply. Forty-three answered:—27, good; 1, nice; 1, pleasant; 2, excellent; 1, temperate; 1, hot and showery; 1, bright; 1, bright and warm, sometimes too dry; 1, variable; 1, short; 1, none; 1, cool and pleasant, with hot, dry spell in July; 1, cool and damp; 1, cool, with frequent showers; 1, warm days, cool nights; 1, showers begin in June and continue through the summer.

AUTUMN ?

Forty-three replied:—23, good; 1, unequalled; 2, excellent; 1, beautiful; 1, very pleasant; 1, dry and invigorating; 1, nice and clear; 1, temperate; 1, early; 1, short; 1, fine warm days, but cool nights; 1, generally very fine; 1, nice and pleasant till 15th November; 1, very pleasant during October and first part of November.

WINTER ?

Forty-one replied:—26, good; 1, cold and pleasant; 1, best in Canada; 1, pleasant; 1, no blizzards, cold with mild spells; 1, cold and clear; 1, long and cold; 3, cold; 1, rough; 1, cold, but no storms to speak of; 1, mild and fine to first January, cold and windy to February, balance fine and mild; 1, quite cold some days; 1, long, with very cold spells; 1, dry, variable as to snow fall, like the best of our English winters,

with a short drop to Arctic cold in January.

How does the climate compare with that of your former home? To this the replies are all favorable except three.

To the question—"Do you consider it healthy for man and beast?" all replied:—28, yes; 6, very; 1, generally speaking; 1, fairly; 1, the very best; 1, certainly very healthy; 3, "I do"; 1, yes, healthy enough; 1, exceedingly so; 1, most decidedly; 1, I am sure of it by practical experience (16 years); there is no better climate for health and growth of animals; 1, no more healthy country could be found and none where a man can enjoy life and health so fully; 1, yes, very healthy indeed; 1, yes, I came here from Scotland with weak lungs, and have been completely cured; 1, yes, exceedingly so for those with throat troubles and lung weakness; 1, very healthy, if well sheltered; 1, yes, but man or beast will get sick in any country.

At what dates do the various farming operations commence throughout the year?

Seeding from 15th of March to 20th of May. Average date, 15th of April.

Haying, from 15th of July to 1st of August. Average date, 25th of July.

Harvest, from 5th of August to 25th of Sept. Average date, 20th of August.

Is there sufficient rainfall?

Fifty-two replied:—17, yes; 1, plenty, except in 1895; 1, 45 inches; 1, as much as in any other farming country; 1, fairly sufficient; 1, yes, but not always when most required; 1, yes, except one year in nineteen; 1, yes, just sufficient to make crops grow; 10 replied in the words, "Generally, usually, most years, as a rule, and on an average"; 1, as a rule, occasionally too dry and sometimes too wet; 1, fair, but not too much; 1, in June there is, not in July generally; 1, this spring, 1896; 1, plenty this spring, 1896, insufficient last year; 1, some years droughty; 1, not enough; 1, generally, but not for last year or two; 1, yes, but last two seasons dry; 1, some years, especially formerly; 1, of late years scarcely enough on high lands; 1, some years there is not; 1, not at all times.

What is the snow fall?

Answers:—About right. Always good sleighing. From 10 to 26 inches. Average, 18 inches.

Does hail cause any damage?

Out of 52 answers:—18, no, never been hurt; 12, not much, not of any account, seldom, very seldom, rarely; 1, twice in 8 years; 1, not for 8 or 10 years; 1, once in 10 years; 1, once in 8 years; 1, in 1893, some; 1, some; 1, occasionally, same as in the east.

Is your district subject to frosts?

Thirty-nine replied:—11, no; 1, not generally; 1, not of late; 8, a little, and slightly; 8, sometimes; and 10, principally in the newer settlements, yes.

If so, give dates:—Spring? End of April to middle of May; but not injurious. Summer? From 10th to 15th of August, most damage is done, when frost does occur, and then generally in low lying and damp situations only. Autumn? Commence about the 20th of September.

How often in your experience has frost been destructive to crops? To this the following replies were received:—

Reference No.	Years Residence	Reply.
1	5	—Once slight on late sowing.
1	4	—Considerable in 1895.
3	15	—In 15 years only one lost 4 acres of wheat.
4	12	—Never had a total failure, though I have had wheat damaged.
5	6	—In two years out of 6, a little damaged.
6	13	—It depends on locality; some places not very often; other low places often.
7	6	—Never on my homestead.
8	14	—Twice.
10	16	—Twice.
11	19	—None in my time.
12	19	—I have never had a total failure.
13	8	—Three years.
14	10	—Once partially, but made flour out of wheat.
15	16	—Never had a total failure.
16	12	—I have never had a complete failure, but sometimes wheat unfit for milling.
17	1	—When crops are put in late.
18	3	—Ever since I came here.
19	6	—Twice.
20	4	—In 1895, partial to late sown grain.
21	2	—Once to late crops.
22	8	—Once.

Reference No.	Years Residence	Reply.
23	4	Have not lost a bushel of grain myself, but others have every year on low lying ground.
24	8	Twice.
25	4	Wheat in 1892 and 1895 in some localities.
25	14	Once.
27	3	Never lost a crop of any description.
28	13	Never total.
29	13	I can't complain.
30	8	Thrice slightly affected.
31	8	Once.
32	3	Never.
33	14	In 1895, seriously; slightly twice or thrice previously.
34	8	Once.
35	6	Every year.
36	3	Never in my locality (Poplar Lake).
37	5	Once slightly.
38	15	Frosts do not often do much damage to crops on high land in this district.
39	4	Once in some low parts.
40	4	None with me.
41	3	Once.
42	2	Once.
43	4	Once.
44	7	Crops put in late generally catch frost.
45	3	Two partial, none total.
46	4	Some places on low ground. Worst fall of 1895.
47	9	Never complete.
48	2	In 1895, but such frost had not occurred for eight years.
49	7	One year in three, but not general.
50	3	Once.
51	2	Once.
52	2	None.
53	2	August, 1895.

(Note.—It will be seen, by referring to the number of years' experience, and also to the residences of those replying, that new settlers and new districts have been enormously more subject to damage than older settlers in old settlements. The general average of the foregoing shows that frost is destructive once in seven years; whereas, in the experience of those who have resided in the country for eight years and upwards, the average is once in every twelve years.)

Is there plenty of sunshine here?

To this question all reply emphatically

yes; except No. 35, who says:—"Not very often."

Any wind storms? A few of short duration. Never as bad as elsewhere.

Any blizzards? None.

Any cyclones? None.

Any thunderstorms? Occasionally, but never as bad as elsewhere.

Any loss by lightning? Very rarely does the slightest damage.

Please give any particulars about climate not given before.

Reference No.	Years Residence	Reply.
1	5	Spring a little late; but heat and long days in summer give rapid growth.
5	6	Frozen grain in fall is caused by lack of moisture in spring.
10	16	Weather predictions founded on experience elsewhere fail to connect here.
6	13	Climate getting drier. Am raising good crops now on land which was slough, with three feet of water in 1883.
15	16	Climate suits me.
16	12	Summer and autumn days warm and sunny, with cool nights.
20	4	Altogether good—the worst time is between the melting of the snow and the first growth of grass.
22	8	In winter cold and fairly warm spells alternate every 2 weeks.
23	4	Having travelled in Canada from sea to sea, and wintered in Washington on the Pacific coast, I prefer this climate to any I have seen.
24	8	All the year round the air is bracing and clear. Remarkable growth.
27	3	Consider the climate first-class, especially for consumption or any lung trouble.
34	8	Winter generally cold, with fortnightly alterations of warm spells.
35	6	(Morinville). The nights are so chilly as to cause wheat to smut.
37	5	If the weather in May was like that of June and July, the country could not be beaten under the sun.

Reference No.	Years Residence	Reply.
43	4—	Too showery in August to allow the grain to ripen rapidly enough.
44	7—	Summer hot, but not unbearably so. In winter a cold spell seldom lasts long. The coldest spell last winter (1895-6) lasted two weeks, and we considered it a very long cold spell.
45	—	The hardest and earliest varieties of everything necessary.
46	4—	The climate is as good as any part of Canada I have lived in.
47	9—	Very healthy for those with chest complaints of all kinds.
49	7—	The long period of sunlight causes very rapid growth. Seasons variable, some hot, without summer frosts; others cold and frosty.
51	2—	Changeable from wet to dry, from warm to cold.

CHAPTER V.

Description of Farms.

The settlements heard from extend from township 38, on the south, to township 55, on the north, inclusive; and from range 18, west of 4th meridian, on the east, to range 2, west of the 5th meridian, on the west, according to the Dominion Lands System of Survey.

The greater number of the farmers—and these give the most favorable accounts of the country—live in the Saskatchewan and Sturgeon River valleys.

Out of a total acreage of 12,610 held, rather less than 75 per cent. was procured from the government by homestead, pre-emption and scrip; and a little over 25 per cent. was acquired by purchase from others than the government.

The averages of the answers give the following:—Size of farm, 259 acres, on which there were 15 acres of new breaking, 35 acres under crop, and 143 fenced, generally with rails and occasionally wire. The character of the average farm is described as 63 acres of clear prairie, 45 acres brushy and scrubby prairie (easily cleared of young trees and shrubs), 10 acres wild hay land, 12

acres timber, 13-8 acres waste, rough ground 1 acre, swamp 21-4 acres, with about 1 acre of water to each farm.

Water of excellent quality is supplied in 11 cases by river, in 12 by creeks, in 3 by lakes, in 8 by ponds, in 16 by springs, and in 59 by wells of an average depth of 24 feet. Owing to the generally undulating character of the country—two-thirds of the land being described as rolling and one-third level—there is very good natural drainage, and there is nowhere any possibility of floods.

The soil varies from sandy loam to black loam, principally the latter, and in depth ranges from 6 inches to 4 feet, average 21 inches. The sub-soil is marly clay of great depth and fertility.

Shelters, windbreaks and snow-collectors are provided for by timber, also fit for buildings, fencing and fuel, and consisting of aspen, balsam, poplar, willow, white spruce, white birch and larch or tamarac. Of these, aspen is most plentiful, the others diminishing in frequency of occurrence in the order named.

Buildings.—Over four-fifths of the dwellings are constructed of logs—the remaining one-fifth of frame—that is, sawn timber. The average sizes are dwellings 19 feet 6 inches by 22 feet 9 inches, 11-2 stories high, containing three rooms, to which is generally added a one-roomed, one-storied kitchen, 12 feet 6 inches by 17 feet 6 inches in size.

Granaries.—Thirty-six of log and six of frame are reported, each 1 story high and 19 feet by 22 feet 6 inches in size.

The stables are generally of logs, one story and 21 feet 4 inches by 25 feet 6 inches in size.

The cow-shed is mostly built of logs, 1 story, 29 feet by 26 feet.

The hen-houses of the usual log construction, 13x16 feet.

The ages of these buildings are from one to nine years. Average, 4 3-4 years.

CHAPTER VI.

Live Stock.

Average number per farm:—Horses, 6; cattle, 24; sheep 12; pigs, 23; and hens, 33. The largest number reported by one man was:—Turkeys, 13; ducks, 16; geese, 5; but the majority keep none, and thus the rather amusing average of each would be 1-2 turkeys, 1 duck, and 1-2 geese. Neither do the majority

keep sheep—the highest reported being 120. Though some of the new settlers use draft oxen, they have been reported under the general heading of cattle.

The period during which our cattle are housed during winter depends entirely on the season, the kind of cattle, and individual practice. During a severe winter, milking cows and calves are housed as long as from the 1st of November to the 1st of April, while during a milder winter the period is only during January and February. The average time appears to be from the 15th of December to the 15th of March. The heifers and steers are very rarely housed, as a rule wintering in open sheds and around the stacks of straw, on which they are almost entirely fed. In fact, they feed and take care of themselves otherwise, if supplied with water. Cows, calves and stabled horses are fed on hay, little of which is given to any of the other cattle, except occasionally towards spring.

In consequence of the abundance of straw and wild hay, and the few animals of the herd requiring to be entirely housed, the unanimous testimony (except that of two chronic grumblers) in reply to the question, "How does live stock pay?" is "Well, very well, and best of anything." "Cattle can be raised for next to nothing, and horses for nothing." But, although some never give their stock any shelter or food other than the straw stacks provide, and many consider they thrive better outdoors, yet individuals whose experience entitles their opinions to the best consideration, think it pays to give good care to good stock, and declare with such the best beef in the world can be produced in this district.

During the winter, horses, born in the country and not required for constant work, live and thrive round the straw stacks, and even better running at large on the prairies—finding good and convenient shelter when necessary in adjoining belts of timber.

Sheep, pigs and poultry are also reported to pay well. During spring, summer and autumn the country is, of course, a paradise for all kinds of stock.

The most profitable and saleable breeds? The majority recommended heavy draft breeds of horses, Clydes and Percherons, being first favorites; natives, crossed with any heavy breed, next; and the Suffolk Punch and Mor-

gans are also mentioned. Several recommended roadsters also.

Amongst cattle, Shorthorns take first rank, being recommended by all. Polled-Angus come next, then Holsteins, Jerseys and Herefords, in the order named.

Leicesters, Cotswolds, Shropshire, Southdown, Merino and Cheviot sheep are recommended.

Among pigs the Berkshire breed receives 34 recommendations, the Poland China, 37; Suffolk 2, Yorkshire 2, and Chester White 1.

Diseases of animals.—There are no diseases natural to the country, and animals are most remarkably healthy. As in other countries, the horse is more liable to disease than any of the other farm animals. A most remarkable freedom from disease has been experienced, only a case or two of hoof rot and distemper among horses; one case of hollow horn and two of black leg among cattle, and two cases of catarrh among sheep being reported, while pigs appear to be entirely free of disease.

DAIRYING.

How is the district adapted to dairying? After what has been said above, it almost goes without saying that the district is pre-eminently adapted for dairying. Men who are unwilling to accord justice to the country in other respects vie with its most enthusiastic admirers in singing its praises as an ideally perfect dairying district. To a wide range of the best of wild pasture are added an abundant water supply and shading and sheltering groves of trees. The replies, therefore, range in expressiveness from "Well" to "The finest in the world." During the summer season the averages are for each cow:—4 1-2 gallons of milk per day, 6 1-2 lbs. of butter per week.

The only drawback has been the want of well-managed creameries and skimming stations throughout the country. This is now remedied by the government having recently taken over the management of the creamery business; and under its staff of skilled experts a still more brilliant success will distinguish their efforts in this natural dairying district than that attained in other less suitable places where, under their direction, this most profitable branch of farming has attained unvarying prosperity.

The estimated average weekly cash receipts from the sale of dairy products are \$2.76; from eggs, \$1.61, and from fowls, 98c., representing a total of \$5.35 to the thrifty housewife. This nice little average income is not shared by the unhappy bachelor farmer; again illustrating the fact that the first requisite of successful farming is in the farmer possessing a good wife.

The average prices of this class of products are stated to have been, up to the spring of 1896:—Eggs, 14c. per dozen; butter, 16 1-2c. per lb.; cheese, 11 1-2c. per lb.; dressed meats, beef, 5 1-5c. per lb.; pork, 4 3-4c. per lb.; mutton, 6 3-4c. per lb.; poultry, 9c. per lb.

CHAPTER VII.

Crop Statistics.

WHEAT.

To the question, "What is the best kind of wheat for the district?" 17 reply Red Fife, 4 Ladoga, 2 Campbell's White Chaff, and 1 Azoff.

The date of sowing ranges from 15th of April to 10th of May, the average being the 24th of April. It is recommended that wheat be sown as early as possible.

The dates of reaping given are from 12th of August to 20th of September; average, 28th of August.

The yields per acre are as follows:—Lowest, 10 bushels on breaking; highest, 50 bushels on new land. The average for 1895 being 27 1-2 bushels per acre, of an average weight of 60 1-2 lbs. to the bushel—the weight ranging from a lowest of 50 lbs. of frosted Campbell's White Chaff to a highest of 66 lbs. of Colorado.

Two-thirds of this crop was off new land, and one-third off old land.

The prices at which this produce sold were from 35 cents for wheat damaged by frost, to 65 cents per bushel; average, 51 cents. Some was sold as high as \$1.00 per bushel for seed.

Out of 36 replies, 2 report smut; 1, damaged by spring frost; 6, damaged by summer frost, and 3, damaged in stook by fall frost. But, as 1895 was an exceptionally bad season for frost, these figures must be taken to represent that exceptionally bad season only. For instance, the average yield of former years is found by board of trade statistics to

have been 39 bushels instead of only 27 1-2 to the acre.

The farmers remark on the cultivation of wheat, that new land is the best for wheat generally, but it matures earlier on old land. On new land the straw grows so rankly that there is danger of the crop not ripening in time to escape fall frost. The best practice seems to be to summer fallow every fourth year; manure and plough deep early in fall; sow as early as possible, using a press drill, disc harrow and roller. Good crops may be taken off the same land without manure for three years in succession. To prepare wild land break the sod from the middle of June to middle of July.

It is proper to record here that, in order to satisfy themselves on the grade of wheat raised in 1896, the Edmonton board of trade had twelve samples of the average quality of Red Fife wheat, not selected, but taken at random, graded by the Dominion inspector of grain at Winnipeg. Out of these twelve samples, 1 was extra Manitoba hard, 8 were No. 1 hard, 2 were No. 2 hard (one being "green," the other frosted), and 1 was No. 2 Northern, being soft. All were exceptionally heavy and much over the average weight of the grades in which they are placed.

Some of these same samples, along with some fall wheat (which has repeatedly been proven successful in the district) and Ladoga, were also sent to Professor Saunders, the director of the experimental farms, Ottawa. He pronounced them all very good and above the average of wheat generally; the Red Fife weighing from 64 to 65 lbs. per bushel, the fall wheat 65 1-2 lbs. per bushel, and the Ladoga 65 lbs. per bushel. He adds that these samples indicated that the climate of the district is exceedingly favorable to the thorough maturing of grain; and, although, as before mentioned, the samples were not selected as the best procurable, he yet considered them fit to send as exhibits to the Imperial Institute, London, and the Stockholm exhibition.

OATS.

White Banner oats are principally recommended; but other varieties are cultivated.

The dates of sowing are from the 20th of April to the 20th of May, the average being the 4th of May.



C. W. Mathers, Photographer, Edmonton.

WHEAT GROWING, STURGEON RIVER.

The dates of reaping are from the 17th of August to the 20th of September; average date, 2nd of September.

The yield and weight ranged from 35 to 86 bushels per acre, and from 32 to 44 lbs. per bushel, the average being 59 bushels and 33.1-3 lbs. These figures refer to the crop of 1895. A yield of 100 bushels and over per acre has frequently occurred in other years. Both milling and feed oats of the best quality are regarded as a safe and sure crop. The highest yields are from new land; but when land is summer fallowed, quite as good results are obtained.

The prices for which this crop sold were from 12 1-2 cents to 30 cents per bushel; average, 22 cents.

BARLEY.

Most of this is of the six-rowed variety. Two-rowed is also cultivated successfully.

The dates of sowing are from the 1st of May to the 15th of June; average date 17th of May.

The dates of ripening were:—Earliest black barley, (sown on 4th May, reaped on 25th July); latest six-rowed, (sown on 20th May, reaped on 20th September). The average date is 21st August.

The yield per acre and weights per bushel are from 20 to 57 1-2 bushels, average 38 1-2 bushels per acre, and from 52 to 68 pounds, average 49 pounds per bushel. In this case again new land generally gives the largest yield, although the lowest yield (20 bushels) was off new land.

The prices realized were from 19 cents to 35 cents per bushel; average, 22.1-2 cents.

This is regarded as a certain crop; yields of 60 bushels to the acre, also a volunteer crop of 30 bushels to the acre, have been recorded.

RYE.

One man reports a yield of 50 bushels per acre, which he sold at 60 cents per bushel.

The cultivation of this grain, of flax, and of peas, for which the country is well adapted, has not been gone into to any extent.

POTATOES.

The leading variety cultivated is the Early Rose, 15 farmers reporting thereon, whilst three mention Beauty of Heb-

ron, 2 Early Ohio and the Morning Star, whilst the White Elephant, Rose of Hebron, Early Puritan and Dossy Boss Tweed varieties are each once mentioned.

The dates of sowing given are from 5th of May to 1st June; average date, 13th May.

The dates of harvesting from 10th September to 10th October; average, 14th September.

An exceptional case of Early Rose, sown on 5th April, gave a yield of 500 bushels per acre, which was the highest return, the lowest being 75 bushels. The average is 300 bushels.

The prices from 12 1-2c. to 46c.; average, 22c. per bushel.

Potatoes intended for export should be of a firm, dry and mealy variety of good keepers, raised on old or sandy land. Large, soft and waxy potatoes are not in demand in British Columbia markets.

TURNIPS.

Only a few appear to cultivate these as a field crop. These report sowing from 2nd of May to 4th of June, harvesting from 3rd of September to 16th of October, and a yield of from 100 to 600 bushels; average, 340 bushels per acre. Price obtained, 17 1-2 cents per bushel.

HAY.

Wild hay is generally abundant. A few, however, in the older and more thickly populated settlements are beginning to complain of the distance at which it is obtainable. The varieties are numerous, vetches, peavine, red-top, blue joint and slough grass being chiefly mentioned. Haying begins about 25th July; the average yield of wild hay per acre is reported to be two tons; and its average price at the nearest market is \$4.00 per ton. Eighty-five per cent. of the replies are in favor of wild hay as compared with cultivated grasses. They declare peavine to equal clover, and red-top and blue joint to be as good as timothy. For fattening cattle the wild hay is found very good. Some think the cultivated hay is comparatively better for horses than for cattle.

Timothy does well, especially on low lands, and white clover is successfully raised also.



C. W. Mathers, Photographer, Edmonton.

OATS GROWING, BELMONT.

GARDEN VEGETABLES.

All the common garden vegetables grow to a perfection seldom witnessed outside of the district.

Tomatoes and pumpkins, with proper care, grow well. Melons are also raised.

CHAPTER VIII.

Fruits, Trees and Flowers.

Wild fruits are plentiful. Strawberries, raspberries, gooseberries, blueberries, cranberries, black currants and red and black cherries afford a variety of fruit of splendid flavor. No housewife is without an abundant supply of these preserves.

Wild hops grow luxuriantly, also hazel nuts.

The cultivated varieties of strawberries, raspberries, blackberries and gooseberries thrive. So does garden rhubarb.

TREES.

Little success has yet been attained by the few who have tried imported apple, cherry and plum trees; failure being attributed to various causes, of which want of shade and shelter and protection against rabbits and mice are the chief.

Imported box elder, the ash-leaved maple, Russian willows, white ash and wild plum are reported as doing well. Professor Macoun, the botanist of the geological survey of Canada, in his latest report, ascribes failure in tree-raising on the prairies, not to cold, but to want of nourishment, and exposure to biting winds. He recommends their being grown from seed, supplied artificially with moisture for two years, and that the grass and hedges be allowed to grow around them as snow collectors. He concludes:—"Where snow accumulates and protects the roots these trees will live and thrive."

FLOWERS.

The whole country is one large wild flower garden during the summer. The common names of a few are given, such as roses, lillies, violets, daisies, convolvulus and orchids.

The gardens of the town of Edmonton are a revelation of floral beauty, and indoors house plants of all kinds flourish in perfection.

CHAPTER IX.

Pests, Weeds, Fires.

ANIMAL PESTS.

The only wild animal which causes much loss to the farmer is the coyote (a small species of wolf), which kills sheep and occasionally poultry—showing a preference for lamb and turkey. These pests will, however, be rapidly exterminated, a bounty having been placed on their heads.

The gopher (ground squirrel) pest of certain other parts of the prairie country is practically unknown here. Rabbits, during their periodical seasons of plenty, are a nuisance occasionally, and destroy garden stuff. Hawks sometimes kill poultry; and a few complain of moles and cut worms in their garden.

The ubiquitous mosquito, which is retreating before the advance of settlement, in old settlements and in dry seasons and places gives little trouble; but in the new districts, especially during wet weather, this irritating insect is a troublesome pest during the summer. Gnats and horse flies are also annoying in some localities.

WEEDS.

There are no very noxious weeds reported. Wild buckwheat, lambs-quarter, pigweed, sunflowers and wild oats are mentioned. The Canadian thistle has not obtained a footing here.

FIRES.

Prairie and bush fires in the spring and autumn, the result too often of wanton carelessness, are much too common and destructive to timber. For the prevention of these the farmers make a number of practical suggestions, such as ploughing, fireguards, severely punishing offenders, increasing the force of Northwest mounted police, and especially the organization under the law of statute labor and fire districts.

CHAPTER X.

Labor.

Only six out of the fifty-two farmers say there is any demand for farm laborers, except in the spring and harvest. The average wages are stated to be \$1.00 a day, \$18.00 a month, and \$150 a year, with board.

Female servants are in higher demand, and the average wages appear to be \$9 per month. In towns good servant girls need not long be out of a place; and there are bachelor farmers throughout the whole country in need of wives.

The following gentlemen answer in the affirmative to the question—"Would you be willing to receive and board a farm pupil who is willing and able to work?" T. G. Hutchings, James McKernan, Robt. McKernan, Wm. Cust, Alexander Adamson, Richard Dinwoodie, D. B. Wilson, Pat Flynn, John A. McPherson, James McDiarmid, John Northcote, H. N. Quebec, and J. S. Gross. The wages to be allowed such pupil to be according to his usefulness, from \$5 to \$15 per month.

(Note.—Owing to the increased prosperity of the districts and larger crops, farmers are now requiring more help than formerly.)

CHAPTER XI.

Roads, Schools, Churches, Law and Order.

During winter the snow and ice make the most perfect and direct sleigh roads, over which enormous loads are drawn with ease to market. By far the most traffic from farm to market and from hay meadow to farm yard is done in winter. This season, too, is taken advantage of in securing from the woods timber for building, fuel and fencing. These winter roads are the best imaginable, whether for traffic or pleasure. One driving behind a good Canadian trotter, with his merry sleigh bells, wrapped in warm, comfortable furs, in the bright and brilliant atmosphere of Alberta, has an exhilarating experience alone worth coming to Canada to enjoy. On the disappearance of snow, the gaps, which the farmers throw down in their fences to permit direct sleigh roads to pass through their fields, are again filled up, and summer travellers must then follow the road allowances. The old main roads and trails, winding and following the best and easiest ground, are as a rule good highways, formed by nature and merely the wear and tear of hoof and wheel. But in settled districts, where fences are necessary and rigid adherence to the straight surveyed road allowances between sections is compulsory, nature requires some assistance in road-making wherever the path over the prairie enters in its direct course

woods and water. For such spots the government appropriation for road and bridge-making is supplemented, in some parts, by the organization of statute labor districts, so that during dry seasons on the whole the summer roads are good. But in wet seasons, where the settlement is new, the population sparse, the bush thick, and the government aid small, there is great need of improvement.

The Saskatchewan river, which runs through the district, is likely to become of more use for local traffic, and in the near future it is expected to be alive with dredges and tugs engaged in gold-mining operations.

The average distances of the farms from which replies came are:—From railway stations, 12 miles; from post-offices, 3-4 miles; from schools, 2-3 miles; from places of worship, 2 miles.

SCHOOLS.

One of the highest recommendations of the country is its admirable system of free public education. A very large proportion of the Territorial funds is spent in providing schools, not only to populous, but more especially to sparsely populated settlements. The proportion furnished by the localities in which rural schools are situated, is very small, the tax therefor being about \$5 annually for each 160-acre farm.

This rate for schools, with another small amount payable in money or its equivalent in labor under the statute labor and fire district ordinance, constitute the sole direct taxation levied in the country.

CHURCHES.

Religious privileges are fully and freely enjoyed by all denominations. The Presbyterian, Episcopalian, Methodist, Baptist and the Lutheran churches are ably represented by resident and travelling clergymen. The Roman Catholic church is of old standing and well organized throughout the district, the headquarters of the diocese being situated in the town of St. Albert.

LAW AND ORDER.

The inestimable privileges of British law and order are here enjoyed to the fullest extent. Life and property are quite as safe here as in any rural community in Great Britain itself. The mere presence of the red-coated constable of the admirable Northwest

Mounted Police force reduces any stray ruffian who may drift into the country to the condition of a law-abiding member of a free community. The aboriginal hunting Indians are now being transformed into farmers, herdsmen and mechanics on their own reserves, where they are treated kindly and wisely as wards of the government of a Christian country, which recognizes its duties as the keeper of our red-skinned brethren.

CHAPTER XII.

Amusements, Sports and Game.

During the busy spring, summer and autumn farmers have little time to devote to social gatherings and amusements. The winter affords more leisure and better opportunities for such enjoyments. One bachelor farmer's reply to the question, "How do you amuse yourself in summer and winter?" read thus:—"In summer, on work days, work in fields; on Sundays, wash my shirt and bake bread. In winter haul rails and talk about my neighbors."

The new settler has little time for amusements which would take him long away from his farm in summer and stock in winter. Reading seems in this case to be the chief recreation.

Those who have got over the initial difficulties of newly settling amuse themselves in every variety of way according to taste. In summer, picnics, horse racing, riding, driving, bicycling, shooting, boating, canoeing, fishing, football, cricket, lacrosse, baseball, golf, lawn tennis and croquet are all mentioned; also duck shooting in spring and deer hunting in fall. Dances, concerts, amateur theatricals, literary, debating, and other societies' meetings, card parties and other indoor amusements are enjoyed in winter; when trapping, sleighing, tobogganing, snowshoeing, skating, ice-boating, curling, hockey and other outdoor sports suitable to the climate are keenly gone into. The fine, stalwart and athletic native Canadian does not suffer by any means in comparison with his British-born fellow-subject. The Canadian has inherited all the old British love of outdoor exercise and manly sports, and added to the latter recreations peculiarly adapted to his own country and most fully enjoyed therein. That northern nation whose manifest destiny is to dominate the American continent is being reared and

developed on the playgrounds and the hunting and snowfields of Canada.

GAME.

In so large and sparsely peopled a country, in parts remote from farms, game is naturally to be found either rare or plentiful according to locality, season and circumstances. The quantity of game varies exceedingly, one year a species may be plentiful, next season totally disappear. For instance, the hare (generally called rabbit in this country) increases prodigiously in numbers and disappears periodically every few years. The lynx is also a notable example of this periodic ebb and flow in numbers; but all game is more or less subject to this mysterious law. The most plentiful are ducks of many varieties, the grouse (generally called prairie chicken), and the hare, known as the rabbit. To these add, in lesser numbers, geese, swans, loons, pelicans, cranes, partridge, snipe, plover; moose, red, black-tailed and other deer; and of the furry tribe, too many of the small variety of wolf called coyote, a few skunks and foxes, an occasional black or brown bear and timber wolf; some badgers, ermines, lynx, muskrats, martins, minks, fishers, otters and Wolverines.

There are sturgeon, catfish and trout in the Saskatchewan river; pike, pickerel, carp and gold eyes occur in that and other streams and lakes. In several lakes, such as Pigeon, St. Anne and Lac la Biche, the beautiful and nutritious whitefish abound.

Thus the keen sportsman finds many opportunities of hunting, shooting, fishing and trapping, and there are ample facilities for indulging, especially near town, in every kind of manly outdoor games. During dry seasons the smooth, firm natural roads and trails are good for bicycling.

Various societies and clubs for the pursuit of sport exist, including gun clubs and rifle associations.

A remarkable amount of musical talent prevails. The towns of Edmonton, Strathcona, Fort Saskatchewan and St. Albert each possesses a brass band; and the composite band of the Salvation Army enlivens the streets of Edmonton with music every evening.

CHATTER XIII.

Districts, Lands and Languages Therein.

LANDS.

Particulars as to vacant lands can best be obtained from the local agents of the Dominion Government, of the railway companies, of the Hudson's Bay, and other land companies, as well as by applying to the parties whose advertisements of lands for sale appear in the end of this hand-book.

The average prices of lands for sale in 1897 were:—

Wild lands belonging to the government and the Canadian Pacific Railway Co., \$3 per acre.

Wild lands belonging to other corporations and private parties, \$4.25 per acre.

Improved lands belonging to private owners, \$7.25 per acre.

The reader will, of course, recollect that one-half of the land in each township is given as free homesteads to actual settlers; and the particulars of the vacant free grant lands are to be had of the resident Dominion lands agents.

LANGUAGES.

It may be well to state here the prevailing nationalities in the different settlements heard from.

Morinville is French; St. Albert, French, Scotch and Irish Catholics; and near Fort Saskatchewan there are a number of French. The name Stony Plain covers a large district, in which there are English-speaking, French, German, Austrian and Russian colonies.

Besides English-speaking people, there are many Scandinavians and Germans around Wetaskiwin and Lewisville. There are considerable colonies of Germans in the vicinity of South Edmonton, Rabbit Hills and Fort Saskatchewan, although the majority in these settlements speak English. Norwegians occupy settlements east of Fort Saskatchewan and in the vicinity of Beaver Lake.

Clover Bar, and perhaps Horse Hills, might be called Scotch settlements, and these, with Belmont, Poplar Lake, Sturgeon, Sandy Lake and Red Deer, are almost entirely inhabited by people whose language is English.

The Gaelic language is spoken in the Scotch Gaelic settlement at Glengarry, in the St. Albert district.

Besides these European languages, the native Cree and Assiniboine tongues are in use by the Indians and many of their descendants of mixed origin.

Notwithstanding the diverse mother tongues in private use, English is the common language of business, and is eagerly acquired by foreigners, and more especially by their children at school.

CHAPTER XIV.

The Financial Question.

DOES FARMING PAY?

In reply to this crucial question, the under-noted figures give the average results of 7 3-4 years' farming:—

	Value on taking possession.	Value in 1897.
Land	\$ 664	\$1,964
Buildings	34	478
Fences	7	141
Implements	55	404
Produce on hand	15	178
Live stock of all kinds ...	254	938
	<hr/>	<hr/>
	\$1,029	\$4,103
		<hr/>
		\$1,029
		<hr/>

Gain in 7 1-4 years.....\$3,074

Being an average increase of nearly \$400 a year.

The next question was:—"Can a man make money at farming?" To which, in addition to the above figures, forty farmers say "Yes," without qualification, and the other six respondents say, "Yes, if freight rates were lower." These rates have since been reduced to a very satisfactory basis.

On the question of the comparative profitability of the different departments of farming, opinions are equally divided between "stock and dairying" and "mixed farming."

TAXATION.

The average rate of taxation for schools is six mills on the dollar (which means 3-5 of one per cent. of the assessed value of the land), the usual amount being \$5; and for roads and fire protection, \$2.75, for each 160 acres. There are no other local and direct taxes.

CAPITAL REQUIRED.

The farmers go on to say that a capital of \$960, in addition to the price of

land, if he buy it, is required by a settler to commence farming with a fair prospect of success. This amount equals about £200 sterling, the pound sterling being worth four dollars and eighty-six cents in Canadian currency.

The implements, etc., needed to start with, and their prices, are:—Team of horses, \$125; harness, \$32; waggon, \$80; sleigh, \$25; plow, \$28; seeder, \$85; harrows, \$20; disc harrow, \$35; reaper and binder, \$155; mower and rake, \$95; roller, \$10; other implements and tools, \$50. Total, \$740.

LIVE STOCK.

The farmers generally recommend a beginner to procure all the stock which he can afford to buy, and which he has means of accommodating and feeding. Some mention a definite number, the average being 2 oxen or 3 horses, 4 cows, 3 pigs, 4 sheep and 21 fowls. The average prices (May, 1897), of these would be:—Team of oxen, \$80 to \$120; cows, \$20 to \$35; sows, \$8 to \$18; ewes, \$3 to \$5; hens, 20c. to 50c.; ducks, 50c. to 75c.; geese, 75c. to \$1.50; and turkeys, 75c. to \$1. The prices vary according to size, condition, breed, season of the year, and other circumstances.

COST OF CROPPING.

The average cost, by contract or hired labor, of the under-mentioned operations is:—

Breaking new land, per acre.....	\$3.35
Backsetting same, per acre.....	1.95
Total	\$5.30
Reaping grain, per acre.....	77 3-4c.
Thrashing wheat, per bushel	3 c.
Thrashing oats, per bushel.....	21-2c.
Thrashing barley, per bushel.....	21-4c.

GRISTING.

The average distance to a grist mill is nine miles; and the question, "What is the rate charged for gristing?" elicited a number of replies voicing the usual complaints of the farmers against the millers, and showing that the average levy for gristing, when custom work is done, to be one-quarter toll or 12 1-4c. per bushel.

TIMBER.

The supply of timber fit for log buildings is generally abundant, the kinds of wood mentioned being poplar, spruce and tamarac. The price of sawn lum-

ber is about \$13.50 per thousand feet, board measurement. The price of doors, windows, shingles for roofing, and of different kinds of lumber are given in the retail price list at the end. Native Canadians can be got to put up good comfortable log houses quickly and at small cost, say from \$100 upwards. The first house generally serves as the kitchen of the dwelling of later date.

RETAIL STORE PRICES.

The prices of food, clothing and other supplies usually required by immigrants are given at the end of this hand-book. By studying these the intending settler will be able to judge for himself the advisability of either bringing out such articles or of purchasing them after his arrival in the country.

CHAPTER XV.

General information.

TIME TO ARRIVE.

As to the best time of the year for the immigrant to arrive in the country, most of the farmers recommend him to come in the spring. Those contemplating the purchase of improved farms should come in time to select them and in time to put in a crop. Probably the summer and autumn would be the better time to select land, when the crops and natural growth would show its capabilities. New land should be broken in June, and backset later in the season to prepare for the next year's crop. Every immigrant should suit his own circumstances and time his arrival accordingly, taking care, if possible, to come at the time which would enable him to most quickly get to work. As a guide, however, the replies received to the question as to the best time of year to come here are given: One recommends 1st of February; one, 1st March; six, 1st to 15th April; ten, 1st to 30th May; nineteen say spring; seven, 1st to 15th June; one, 1st July; one, 1st of August, and two, fall.

CAUSES OF SUCCESS OR FAILURE.

The question, "What are the chief causes of the failure of those who have not been successful?" elicited a number of replies, all going to show that failure is not to be attributed to the country, but to the lack of experience, business habits, energy, sobriety, perseverance, and sufficient capital on the part of the

settler. The selection of poor land and the misfortune of losing the first crop, on which the new settler without money solely depended, are also mentioned. There is a general expression of opinion that there is no reason why any man should fail here, but his inability to succeed anywhere else; and that no one who has really made an effort to work intelligently has failed.

Farmers with sufficient means to keep them until the farm begins to yield profitable returns need have no fear of failure.

Mr. McLay, of Horse Hills, says:—"I consider this country the backbone of Canada. We have the finest soil, good water, coal in unlimited quantity, timber, gold, a healthy climate, the best system of schools in the world. People coming here have no experiments to make, as in farming it has been tested for the last eighty years." (This long period, of course, refers to the Hudson's Bay Company, who always had a farm at Edmonton). Continuing, Mr. McLay recommends going into mixed farming and thoroughly cultivating the soil.

Mr. T. G. Hutchings, of Poplar Lake, says:—"After nineteen years' experience, I do say the country itself is all right."

Mr. Harold remarks:—"What this country needs is good energetic men with capital enough to buy good land, machinery and stock, and get their farms in good shape. Then there is no danger of failing." Though it is immensely easier for such men as Mr. Harold mentions to succeed, and the advice to come to this district can be unhesitatingly given them; yet as the chief causes of success or failure lie in the man himself, one possessing the other necessary attributes of success need not allow the lack of as much money as is elsewhere stated to be desirable to start with, to deter him from coming and trying his fortune in a district where it is probable that—owing to expected developments in gold mining—there will be considerably more demand than hitherto for farm labor and produce.

APPENDIX TO PART FIRST.

110 Visiting U.S. Farmers Corroborate the Testimony of 52 Edmonton Farmers.

The following extracts have been compiled from letters and reports of the

110 United States farmer delegates, which have been printed in full in a pamphlet, entitled "Western Canada Delegates' Report, 1900," by the Minister of Interior, Ottawa, Canada:—

PAMPHLETS DO NOT OVER PRAISE COUNTRY.

Mr. Pollard says:—"In none of your literature are the advantages of Western Canada overdrawn. All you told me of the country hardly does it justice, for I found it all you represented, and more, too."

Mr. Brown says:—"The reports sent out regarding the country were not exaggerated."

Mr. Rattray and party say:—"The country is simply more than we dreamed of. The printed matter sent out by the government does not half tell of the grand country in Alberta."

Mr. Schmidt and party say:—"We all thought that, if the country was half as good as stated, we would be satisfied; the country is much better than we thought of in Illinois."

Mr. McAllum says:—"The country far exceeds my utmost expectations. I found Western Canada to be all that the government and official publications claimed for it."

Mr. Bowen says:—"Though I had some pamphlets about land in Canada, I was surprised at the fine show of grain and grasses. Such fine farms for the cost of going there. I only wish I had known about it sooner."

Mr. Myers says:—"I found it altogether far better than I expected to, as the Queen of Sheba said when she visited King David, 'The half has not been told me.'"

Mr. Graham says:—"I thought perhaps the immigration pamphlet was printed to boom the country; but I found the country better than they stated."

Messrs. McCallum and Barnes say:—"The Edmonton district is all that it is represented to be."

Mr. Hower says:—"The country is as good as you read in the pamphlets, and better in my idea."

Messrs. Barley and Burrige say:—"The country far exceeds what is claimed for it in the government and C.P.R. pamphlets."

Mr. Darling writes:—"I was induced to visit Western Canada for the purpose of satisfying myself and my friends

whether the reports made in pamphlets were correct. I have decided to move there, taken up a homestead, purchased stock, and written to my family and some relatives to come."

CLIMATE.

"Mild and healthful. Delightful. We asked about the winter and they all say they don't mind it any more than we do in Iowa or Ontario. All the States people I saw had rather live here than in some more southern States. A very mild climate in the summer, and a very healthy one. All seem well pleased with climate. A climate milder than Minnesota and more equable. Warmer than we expected. We left Ada in the midst of a blizzard; at Edmonton a few days later (8th Dec., 1898) we found people on the streets still wearing their summer clothing. Our horses run out all winter and come out fat in spring; our cattle can do the same, but I consider it inhuman to let our cattle run out in storms. Cattle fed on the prairie all winter are in good condition in the spring. I have seen cattle that had run out all winter and were in first-class condition for market; in fact, much better than the cattle which are slaughtered for use of Chicago people. Wherever I went the children looked healthy, with bright eyes and red, glowing cheeks. No place for a doctor this. A delightful climate. As for healthfulness, they hardly know what sickness is in that country. Fevers and biliousness I never saw there. A healthy climate, cool nights and refreshing breezes during the day. I fed all my stock last winter without gloves or mitts on my hands. I do not find this part any colder than in Iowa. A good country for throat and lung troubles. He believes that the pure air of Western Canada will give him new life."

LIVE STOCK.

"Cattle in fine condition; not a single poor animal, June 10th. Cattle are easily grown and bring splendid prices; also all kinds of fowls. As good for dairying and ranching as for grain. Swine do well; there is no disease among them. The cattle on the range grass of the prairie. Splendid cattle, beat anything I ever saw; fat, fully matured and ripened on the nutritious hogs and sheep, all in good condition.

April 20th, 1898—Cattle all fat, wintering on straw. Sheep, pigs and poultry

thrive, and horned cattle are mainly carried through on straw, requiring no shelter in winter save the straw stacks on which they feed. Sheep, I never saw the equal in any of our Western States. The stock is fine and fat, and is exported to the English market without being fed grain. Cattle are able to get their own living the year round, need little, if any, shelter, and grow fat even in the winter. The stock is splendid, and I think it as good a country as can be for stock raising. We can have good beef every month of the year without feeding grain. The grass keeps all kinds of stock fat. The finest cattle we ever saw are there—grass cannot be beat for raising horses, cattle and sheep."

CROPS.

"Oats, wheat and potatoes beat anything I have seen. I visited Alberta during the threshing season, 1898, and saw such grain and yields as were simply marvellous. More wheat or oats can be raised off one acre than can be raised off three in any State in the Union. As for crops, we never saw anything that can compete with them. The wheat and oat yield is something enormous. He has lived there 19 years and never had a crop failure, and never raised less than 30 bushels of wheat to the acre, and some years got 50 bushels. We have never (in six years) had a crop failure. We talked with at least 50 different farmers, some from Ontario, North Dakota, Minnesota, Michigan and Montana, and they all told the same story, that wheat averaged 30 to 50 bushels per acre, oats from 70 to 100 bushels, barley from 50 to 70 bushels, and potatoes from 400 to 800 bushels. I have been shown the very finest wheat, oats and barley that I ever saw, not even excepting Lincolnshire, England, which country was famed for growing some of the best grain in the country. I have had interviews with farmers from England, Ireland, Scotland, and also the States, and they one and all tell me that this district is the finest they ever struck. A magnificent country, abounding in splendid crops and fine cattle. In a drive of forty miles in a roundabout country trip from Edmonton to Fort Saskatchewan and return, we really failed to see a poor piece of grain, while bountiful crops were seen on every side. We took a drive to St. Albert and vicinity, and splendid crops were in evidence everywhere; the picture could hardly be overdrawn."

AVERAGE YIELDS AND PRICES.

Averages Compiled from	WHEAT		OATS		BARLEY		POTATOES	
	Bush per Acre	Price per Bush	Bush per Acre	Price per Bush	Bush per Acre	Price per Bush	Bush per Acre	Price per Bush
U. S. Delegates' Reports, } 1900.....	40½	.81	81	.40	56½		444	
Cowie's Pamphlet, Crop } of 1895.....	27½	.51	59	.22	88½	.22½	300	.22
Edmonton Board of Trade } Statistics, up to 1895. }	39							
	107	1.32	140	.62	95 1/6	.22½	744	.22
General Average.....	35½	.66	70	.31	47½	.22½	372	.22

VEGETABLES.

"At Edmonton a gardener informed us that he cleared from \$800 to \$1,000 annually from the sale of roots, vegetables, flowers and plants. We here state that we never before saw such a growth of vegetables at that season of the year. He said he raised 750 bushels of onions to the acre. Beets were growing as large as your arm, turnips as large as one's head, and cabbages as large as a patent-pail. Following are prices Mr. Ross gave us as receiving for his produce:—Per bushel, beets 50c., carrots 40c.; onions \$1.25; turnips, \$5 per ton; cabbage, 4c. each; green corn, 25c. per doz.; tomatoes, \$1.25 per bushel; potatoes, 25c. to 30c.; cauliflower, \$1 per doz.; cucumbers, 15c. per doz.; strawberries, 25c. per box; squash, 4c. per lb.; and other produce in proportion.

Off his farm in Clover Bar, Arthur Grey last year sold five barrels of ripe tomatoes. He produces pumpkins, cauliflower, vegetable marrow, and all vegetables do exceedingly well with him."

SOIL.

"The soil everywhere is a rich black vegetable loam, from 1 to 2, and even in some places 6 feet in depth, resting on clay. There is not in any of the States any finer soil than this."

"As good as any land that ever lay

outdoors. Dark loam, very heavy and rich. This is the best farming land I have ever seen, and it cannot be surpassed for grazing purposes. No better land can be found anywhere. It is black loam, with clay sub-soil, no gravel or stones. Land A 1, unsurpassed anywhere. The soil is a black loam from 2 to 4 feet deep, and a clay sub-soil. The land is all good. Very deep, black loam. One field we saw had been in wheat twelve years in succession. The worst country I saw in Alberta is better than the best we have in Ohio. The land is the richest I ever saw."

WATER.

"Good water. Well watered. Water of fine quality and got at from 10 to 40 feet. The water is good. Plenty of water, as fine as possible to obtain anywhere in the world."

TAXES.

"There is no personal tax of any kind, only a small road tax of one day's work, or \$2 in cash, for roads, and a school tax of about \$5.00 per quarter section."

GENERAL ADVANTAGES.

"I saw everywhere I went a black, loamy soil, immense crops, sunshiny weather, well-condition, fine, powerful horses, new modelled machinery, neat farm houses, gigantic grain elevators,

well-filled school houses, pure water, a healthy climate, well-clad farmers, busy housewives, bright children, waving seas of barley, a contented people, and happy homes."

"A grand country for the poor man, and a good one for the rich. The man with money can find good paying investments, and the man without can soon get a good start."

"A great country of many resources and productions, and a climate that is healthy and agreeable."

"A country in the infancy of its greatness."

FINANCIAL.

"Mr. Miller, who came here 17 years ago, never missed a crop and is now well off. I found that the farmers were making lots of money. I think it the best country for a man, rich or poor, to make money I ever saw. Mr. Carscadden has been 16 years here. He came without any capital. He has 400 acres of land, 80 cattle, 10 horses, good farm equipment, good comfortable buildings, owes not a dollar, and has money in the bank. He has had no failures in 16 years; has grown 11 consecutive crops on same land without rest."

"We were shown other farms; all excellent places, good crops and buildings and equipment, and all getting rich."

"Mr. D. E. Bates has been two years in Alberta. He said:—I have seen more money here in one year than I earned in twenty in Michigan. I would not take 1,000 acres as a gift in Michigan and go back there to live, and give up the chances of myself and my sons in this great country"

"Mr. McDuffie, of Red Deer, arrived with \$300 ten years ago; now he would not take \$3,000 for his farm, and has money in the bank."

"Mr. Crookshank, of Red Deer, aged 58, who came to the country five years ago with nothing but a wife and children, made more in these five years than in all the rest of his life put together."

"I did not meet a single farmer who was not contented and prospering. Most of these same men went in there with very little."

"The markets are excellent owing to the nearness of the mining country.

The prices could not be obtained in Minnesota to-day."

"Mr. A. Simons, of Clover Bar, came here five years ago without a dollar; to-day he has a fine farm he refuses \$3,000 for."

Settlers' Testimony Addressed to the Canadian Pacific Railway Co.

Agricola, Alberta, May 15th, 1900.

As I have been requested as a farmer of Alberta to give my opinion as to how I like the climate and country, and also how I prospered in it, I must say I am well satisfied with the country and climate, and also with the way I have prospered in it.

I emigrated from Parry Sound seven years ago this coming fifteenth day of April. When I landed in Edmonton all I possessed was one stove, one bedstead, a wife and two small children, and the sum of seven dollars and fifty cents in cash. I now own 160 acres of land, three span of horses, ten head of cattle, eighteen hogs, two waggons, one set of sleighs, one binder, two plows, one set of harness, one hay rake. Last season I raised 1,000 bushels of wheat, 200 of barley, and 400 of oats, which were good samples.

My opinion is that this is a good country, with plenty of good hay and water; school-houses, post-offices and churches about six miles apart, and markets about eighteen miles apart, provided with splendid roads.

WILLIAM H. ATKINSON.

Leduc, December 3rd, 1900.

I came here on April the 3rd, 1898, and located a place. I had no means, but I got along all right. I have seen the finest crops grown that I ever saw anywhere. I have seen oats that yielded 80, wheat 50, and potatoes 300 bushels per acre. I am well satisfied with the country, and the district of Northern Alberta.

GEORGE FOUNTAIN.

Beaumont, Nov. 19th, 1900.

I left North Dakota seven years ago and settled in Alberta, took a homestead and bought a C.P.R. quarter sec-

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VEGETABLES EXHIBIT AT EDMONTON AGRICULTURAL SOCIETY'S MEETING.

tion in Township 50, Range 24, in the Clearwater Settlement. I am well pleased with this country. I came to this country with no capital and very few settler's effects, and now I am in a comfortable position, having eighty acres broken and under cultivation. I have six head of horses, sixteen head of cattle, and all kinds of farm implements. I think the country is hard to beat for mixed farming. I would advise any parties from other parts of the world, who are not in good circumstances, to move to this country and secure for themselves a home, as there is lots of room for hustlers. My crop this year yielded 3,000 bushels off 65 acres.

J. O. WOOD,
Beaumont P.O., Alberta.

Wetaskiwin, Alta., 1st Dec., 1900.

I arrived in Wetaskiwin, Alta., on November 10th, 1899, from Iowa. I purchased a farm, for which I paid \$1,000. I put it into crop this year, with the result that I had over 2,000 bushels of grain. I sold over \$200 worth of hay; in other words, I made enough to pay for this farm the first year. Where can any settler do better? I am well satisfied with the country, and believe it to be a good country for a poor man to start in.

DOMINICK HALADIK.

Wetaskiwin, Alta., 2nd Dec., 1900.

I came to this country from Quebec in the year 1891, and entered on a homestead in 1892. I have farmed ever since, and I consider it a good country to farm in. I have raised 40 bushels of wheat to the acre, over 60 bushels of barley and 60 to 70 bushels of good oats. I intend to stay with this country; it is good enough for me, and the best country under the sun for a poor man. Came here dead broke, and have to-day 55 head of cattle, three horses, and all farm machinery now, and over \$1,000 in the bank. When I arrived I was just \$30 in debt, and borrowed money to come.

BOSWELL THEREAUX.

Delegates' Reports.

To the Canadian Pacific Railway Co:—

I, the undersigned, a delegate from Kansas, to submit a report of a trip I

made from Kansas to Alberta to visit that part of Western Canada in view of locating myself and the people I represent, take pleasure in stating that I am satisfied with my visit. The country is as represented by the literature and by agents. I visited all along the C. & E. Ry., and finally decided to settle at Carstairs, where I bought for myself and friends three-quarters of a section. I have no doubt that many other families from Kansas will follow my example after I have explained to them what I have seen, and will move into Western Canada next year.

E. B. BASTIN,
Hillsdale P.O., Kansas.

Winnipeg, 30th October, 1900.

We, the undersigned, delegates from Kansas, Missouri and Oklahoma Territory, have just returned from the Edmonton country. We are more than satisfied with what we have seen. The oat yield in this country is very good, averaging from 50 to 75 bushels to the acre, the quality excellent. The straw and grass growth is wonderful, from five to seven feet in length. Samples of timothy and brome grass were seen the same length, and the crop was very encouraging and heavy. The vegetable crop leaves nothing to be desired—potatoes yielding as high as 600 bushels to the acre, cabbage and all other varieties likewise. The soil is a rich black loam with clay sub-soil, varying from 3 to 7 feet in depth. We are satisfied from what we have seen ourselves in the country, cattle and produce, that this district cannot be beaten for farming. While at Dried Meat Lake, east of Wetaskiwin, our host sold 25 head of three-year-old steers for one thousand dollars, and besides had 170 head of cattle left. He had only been four years in the country, and was only too evidently prospering. The weather we have experienced was a surprise to us; The glass registered 60 degrees above zero and ploughing was going on all along the line of travel. The trip which we looked forward to as somewhat of a hardship was very enjoyable. Game, ducks and chickens were very numerous, we ourselves killing at least fifty chickens on our trip. The cattle are certainly far superior to what we have in Oklahoma and Kansas—three-year-olds

here being quite equal to four-year-olds with us—all of the cattle on the prairie being fat enough for beef.

GILFORD BUSSARD,
Renfrew, Q.T.

A. H. HOFFMAN,
Andale, Sedgwick, Kansas.

C. R. HOLBINGE,
Rhinehart, Kansas.

C. MERLETT,
Detroit, Kansas.

P. McFERREN,
Moonlight, Kansas.

GEO. MOURIER,
Abilene, Kansas.

J. OLLHOFF,
Navarre, Kansas.

From a letter to the "GUELPH
MERCURY."

Dr. Whitelaw on Climate.

I trust I may be pardoned if I refer again to the winter climate of Northern Alberta, which I consider the finest in Canada. A reference to the report of the government meteorological office here, published in the Edmonton Bulletin, sup-

plies one with the following facts:— From November 1st, 1900, to March 24, 1901, there were 44 days only in which the thermometer reached a point zero or under. The lowest recorded temperature was 29 degrees below zero, the average of the lowest point reached during the 44 days referred to being 11 degrees below. The total snow fall for December was 6.5 inches; all of which subsequently disappeared; for January, 4.6 inches; for February, nil; for March, not recorded in report, about 6 inches on March 17th, which entirely disappeared in less than a week. The first two and a half weeks of March were absolutely summer-like, and even the ladies had begun to use their bicycles on the streets, when the snow fall of March 17th stopped them for a season. Today (the 24th) the streets are again smooth and bicycles are again in use. During the whole winter we have had only one slight rain fall, which was a decided novelty to us; no winds, blizzards or snow drifts, and even the lowest recorded recorded temperature of 29 degrees below zero is easier borne in this dry, still, crisp air than a zero temperature, accompanied by the damp, penetrating breezes of Eastern Canada.

PART SECOND.

(WRITTEN IN 1897.)

Sources of Information.

Whilst the agricultural information in the first part has been compiled from facts furnished by farmers; the intelligence contained in the second part, for the benefit of others as well as farmers, has been specially written or else collected by the compiler of the handbook from the sources indicated in dealing with the subject.

CHAPTER I.

Business Openings.

Besides the inducements which the district offers to agriculturalists, there are many excellent openings for the skillful investment of capital in other pursuits. Next to men, the country needs money

for its development, that hand in hand with its agricultural progress, other sources of profit may be utilized.

The majority of the farmers consider that an excellent opening exists in Edmonton for a custom grist mill and a small woollen factory. A few think a tannery is required; and one believes a flax mill would pay. Mr. Hutchings supposes that the manufacture of condensed milk, beet sugar, potato starch, wood pulp and paper would be profitable; and, besides, emphasizes the need of a custom grist mill, a small woollen factory and a cold storage warehouse at Edmonton. Mr. Dinwoodie says a small foundry would be a useful institution which would profitably grow up with the country.

It is stated that there are good prospects for general stores in the Stony

Plain, Spruce Grove, Riviere Qui Barre, Morinville, Beaver Lake, Sturgeon River and Clover Bar settlements. A blacksmith is also wanted in the Sturgeon settlement.

As will be seen by the descriptions of the different towns, almost all usual lines of business and trade are represented, so that immigrants would find no difficulty in procuring any of the necessities and most of the luxuries of life in these business centres.

Besides the openings for business suggested by the farmers, others may be here mentioned:—

Grain elevators will be required in the town of Edmonton immediately on the completion of the railway extension. (Now in progress, June, 1901.)

It is probable that a well-organized fishing company would be found more profitable than the trade as at present conducted.

The lumbering trade has been for years of considerable importance. The Saskatchewan, from the foothills of the Rockies to where it reaches Edmonton, drains a well-wooded country, from which is obtained the wood manufactured at the saw mills of D. R. Fraser, and Walter and Humberstone at Edmonton. Portable saw mills and steam threshers travel about in the different settlements; and along with the stationary mills supply the present demand.

The fur trade called the town of Edmonton into existence long before the construction of railways, and, although its relative importance as compared with other industries is not now so great, its positive importance is increasing yearly. Besides the Hudson's Bay Company, which has establishments all over the country, the firm of McDougall & Secord does a very large business in the Athabasca, Peace and Mackenzie River districts. Larue & Picard also have outposts in Peace River district; and the hardware firm of Ross Brothers have recently added a fur trading branch to their business. As better roads and means of transportation from the vast fur countries to their geographical business centre at Edmonton become available, this highly important natural trade will more fully develop. Already its proportions may be judged from the fact that over \$100,000 worth of furs are annually shipped by private buyers direct to London; and its importance in giving

employment to freighters and boatmen, and in affording a local market for farm produce, is very great.

Apart from the possibilities above indicated for the profitable employment of capital, men having money to lend can obtain on security of property of continually increasing value good rates of interest.

There is probably no country in the world where so many excellent opportunities exist for the skilful employment of small capital.

For the information of those bringing money to the country attention is called here to the advertisements of the chartered banks doing business in the district. Canada has good reason to be proud of her admirable and secure banking system, which is largely modeled on that of Scotland. Money may be sent to the district through these banks and therein lodged on deposit receipt, bearing 3 per cent. interest, with absolute safety.

CHAPTER II.

Climate and Sanitary Condition.

BY H. C. WILSON, M.D.

To intending settlers the question of the climate of their proposed new home and its effects on health, is of as great importance as the productiveness of the soil or the richness of its mineral wealth. Health is one thing essentially necessary to success, and a capital of more than money value.

Generally speaking, the change from an old settled country to a new one, the climate of which is very different, has for a time at least an injurious effect upon the health. In case of persons coming to the Edmonton district from any other country or other parts of Canada, the reverse has been and still is the rule. For over a century the Hudson's Bay Company recruited its staff of officers and other employees from Britain and Eastern Canada; and, although these men led a life of constant exposure, passing many months of both summer and winter without the shelter of a house or even a tent, they did not suffer in health. On the contrary, many of these pioneers are still living, having attained to ages of seventy, eighty, and even ninety; and their children are not surpassed in vigor and strength in any part of the world.

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Dr. E. A. Parks, in his classical and standard work on hygiene, says:—"With regard to the effect on the Anglo-Saxon and Celtic races of going to live in a climate with a lower mean temperature and greater variations than their own, we have the experience of Canada. * * * In all these, if food is good and plentiful, health is not only sustained, but is perhaps improved, * * * but certain it is that the European not only enjoys health, but produces a progeny as vigorous, if not more so, than that of the parent race." Again I quote from the same work in reference to the healthfulness of the various stations for British troops:—"These numbers show what is indeed apparent in all the records, that Canada is a very healthy station. The amount of phthisis has always been smaller than in home service, and regiments proceeding from London to Canada have had on two occasions a marked diminution in phthisical diseases. The comparatively small amount of phthisis is remarkable, as the troops have at times been very much crowded in barracks."

These remarks, while entirely true of Canada as a whole, would appropriately and truly apply to Edmonton as compared with Eastern Canada, not only as to phthisis, but also as to malarial and typhoid fevers, cholera, dysentery, cholera infantum, and other dangerous diseases.

The first necessity for a healthy climate is a sufficient supply of wholesome water. When this is not obtainable, all the above-mentioned diseases may and do occur as a direct result; as also dyspepsia, diarrhoea, yellow fever, diseases of skin and bones, calculi (gravel), gottre, intestinal parasites (tapeworm), etc. The water supply in Edmonton is abundant and wholesome in every particular from a sanitary point of view, and the above diseases are not prevalent.

The air is clear, pure and aseptic, containing a large proportion of ozone—the natural air purifier. As to the soil in reference to its influence on health, it is only necessary to state that it does not breed the miasma or malaria which is the cause of ague in its many forms; nor, owing to the altitude and low mean temperature, can malaria ever exist in the district.

The climate is not only invigorating to adults, whether in full health or otherwise, but seems to have a special influence in developing strong and healthy

children. This is most marked in summer, when in the East thousands of infants die annually from diseases of the stomach and bowels (cholera infantum, dysentery, etc.), while here a death from any of these causes is a very rare occurrence, and this in spite of the fact that fully nine-tenths of the infants are bottle-fed and receive but a small proportion of the care and coddling that the infants of the East receive and require. Writing on this subject in 1890, Dr. McInnis, with a record of five years, and myself of eight years' local practice, we stated "that diarrhoea, dysentery and other affections of the bowels are of a very rare occurrence. Not a single death has ever occurred from these diseases during our sojourn here, and we have not heard of a death from these causes before that time." These remarks apply to infants and children, as well as to adults. In Toronto eight per cent. of all deaths are due to these affections. In Ottawa the deaths from these diseases stand first in number in the returns; in Montreal, second; in Toronto, third. No better climate for children than that of Alberta is to be found in America."—(From a pamphlet issued by the Edmonton Board of Trade, 1890). Seven years additional experience has, if anything, strengthened my views as above, and I can now say that the climate is the best to be found in America.

Cases of consumption, asthma, all chest and throat diseases, rheumatism, ague, and many other diseases, are always greatly benefited and very often cured by a residence here. Typhoid fever is not prevalent; in fact, we are almost exempt from it.

In the town of Edmonton is a first-class, well-equipped hospital, instituted and managed by the Grey Nuns or Sisters of Charity, which is open to persons of all religions. There those who have not the means to pay for medical service are treated free by the medical men of Edmonton, and the same care, attention, nursing and attendance is given as to private patients. This has proved a great benefit to many scores of settlers from the surrounding country.

The space allotted to me is too limited to permit me to go into more details. After a residence in Edmonton of fifteen years, my experience is that this is a good climate for every class of persons except medical men—it is too healthy.

CHAPTER III.

Climatic and Meteorological Observations.

(By Isaac Cowie.)

Knowing from a personal experience of upwards of thirty years that the climate of the Canadian prairies is preferable in almost every respect to that of Great Britain, and that neither would my many fellow old country men nor I exchange that of our new home for that of our native land, it has always been a matter of regret that so many old country people should be deterred from coming to Canada by a mistaken idea of the severity of its climate. This false idea is due to various causes, amongst which a few may be mentioned.

The greatest deterrent of emigration to Canada is that very reliable instrument, the thermometer, which frequently registers a degree of cold in which human life could not exist in the damp climate of Britain. The tremendous difference between the heat-conducting power of a damp and a dry atmosphere cannot be realized by old country people who have never left their native land. Dry air is the most efficacious non-conductor of heat, and the Canadian, living in, and surrounded by, such atmosphere, is well protected against extreme cold or intense heat.

Misrepresentation by jealous rivals for immigration is another potent cause. And most unscrupulous misrepresentations are used, tending to show Canada to be a cold, bleak region, impossible of contented life, a place associated with Siberian exile and penalties, a remote region where the graces and amenities of civilization are unknown. Replying to such a slander, the "Brooklyn Eagle" says in a recent article: "In climate, Ireland has the advantage of the Gulf stream, but it has not the clear, strong, bracing air of the prairies, nor is its soil so deep and rich and workable. In the winter the cold is sharp, but it has not the damp, searching rheumatic chill of the coast. Though new, the towns have all the characteristics of western towns on our side of the line, saving only their roughness. The people are industrious and average sober and intelligent. They follow modern methods in their agriculture, they support daily papers, their cities have the same police and fire systems, the same telephones, hotels and theatres, the same pavements as ours, and the prosperity of the

country is probably not less than our own land. Villages are increasing, manufactures growing * * * and all the conditions are such as invite settlement. In the ample room, under cloudless skies, with vast ranges awaiting the plow and scythe and sickle, in quick touch through the railroad with the rest of the world, * * * the men and women who take up homes in the farming belt to the north of us should be prosperous and happy."

The only other source of these false impressions of our climate of which mention will be made herein is the continual misrepresentation of Canada by means of wintry views and descriptions. From these pictures no doubt many Britons have naturally derived the impression that there is only one season in Canada—everlasting winter, with eternal snow; and that the inhabitants go about their every-day avocations perpetually wrapped up in furs. Even the summer dress of Canadians is burlesqued and misrepresented by the vanity of youths, who, newly arrived in the country, send home photographs in which they appear in the warlike array of dime novel desperadoes.

Whilst Canadians rejoice in the beautiful snow of their bright, sparkling winter, and know it to be one of the greatest blessings of nature to their country, more especially in affording such splendid roads during a season which in some other countries is characterized by slush and mud and downpours of rain and sleet; yet are they also fortunate inhabitants of a country which for eight months in the year can boast of a spring, summer and autumn time of weather unexcelled by any and enjoyed by few other lands. If during these seasons, when radiant with flowers and in verdure clad, Canada were depicted in Europe to so large an extent as she has been as the asylum of exiled youths, who wear mid snow and ice the habiliments of an Esquimaux, people across the Atlantic would have a truer idea of the country and climate.

During the winter season the benign influence of the Chinook winds from the Pacific is felt with little interruption. Whilst Edmonton in winter is subject to this warm air current from the west, in which places further east do not participate, the district shares in the benefits common to all Central Canada, derived from the aerial stream which during summer flows north from the

Gulf of Mexico, bringing with it the heat and moisture needed by the fertile soil of the prairies for the production of the magnificent and wonderful crops of the whole region. The higher northern latitude is also compensated for by the great length of day during the growing period.

CHAPTER IV.

Edmonton's Great Beyond.

Though Edmonton, situated 1,000 miles somewhat north of west of Winnipeg, may appear, to one unacquainted with the vastness of continental Canada, to be away at the extremity of possible civilized settlement, it is yet only at the threshold of the gateway to a territory of immense extent and enormous potential value. The Mackenzie River enters the Arctic Sea about 2,000 miles due north of the town of Edmonton, after draining through numerous tributaries entering it from east, west and south, a colossal area covering 1,260,000 square miles, consisting of that part of the Dominion lying north of the Saskatchewan watershed, east of the Rocky Mountains and west of Hudson's Bay, and comprising the Great Mackenzie Basin.

From the report of the special committee appointed by the Senate of Canada to enquire into the resources of the region, named by them therein "Canada's Great Reserve," the extracts herein indicated by quotation marks are made. The Mackenzie and its affluents form a network of waterways, "while its total lacustrine area probably exceeds that of the Eastern Canadian and American chain of great lakes." "There is river navigation of about 2,750 miles, of which 1,390 miles are suitable for sternwheel steamers, which, with their barges, may carry 300 tons, the remaining 1,360 miles being deep enough for light draught sea-going steamers." "With suitable steam craft this river and lake navigation (in all 6,500 miles) may be connected with Victoria and Vancouver by way of the mouth of the Mackenzie, the Arctic Ocean and Behring Straits and Sea; and it is now connected on the south by 90 miles of waggon road between Athabasca Landing and Edmonton, with navigable water in the Saskatchewan River."

(Note.—See the Chesterfield Inlet route to Great Slave Lake in Part Third.)

ARABLE AND PASTORAL LANDS.

"Within the scope of the committee's enquiries there is a possible area of 656,000 miles fitted for the growth of potatoes, 407,000 square miles suitable for wheat." "There is a pastoral area of 860,000 square miles, 26,000 miles of which is open prairie, with occasional groves, the remainder being more or less wooded; 274,000 square miles, including the prairie, may be considered arable land."

"Throughout this arable and pastoral area latitude bears no direct relation to summer isotherms, the spring flowers and buds of deciduous trees appearing as early north of Great Slave Lake as at Winnipeg, St. Paul and Minneapolis, Kingston or Ottawa, and earlier along the Peace, Liard and some minor western affluents of the great Mackenzie basin, where the climate resembles that of Western Ontario."

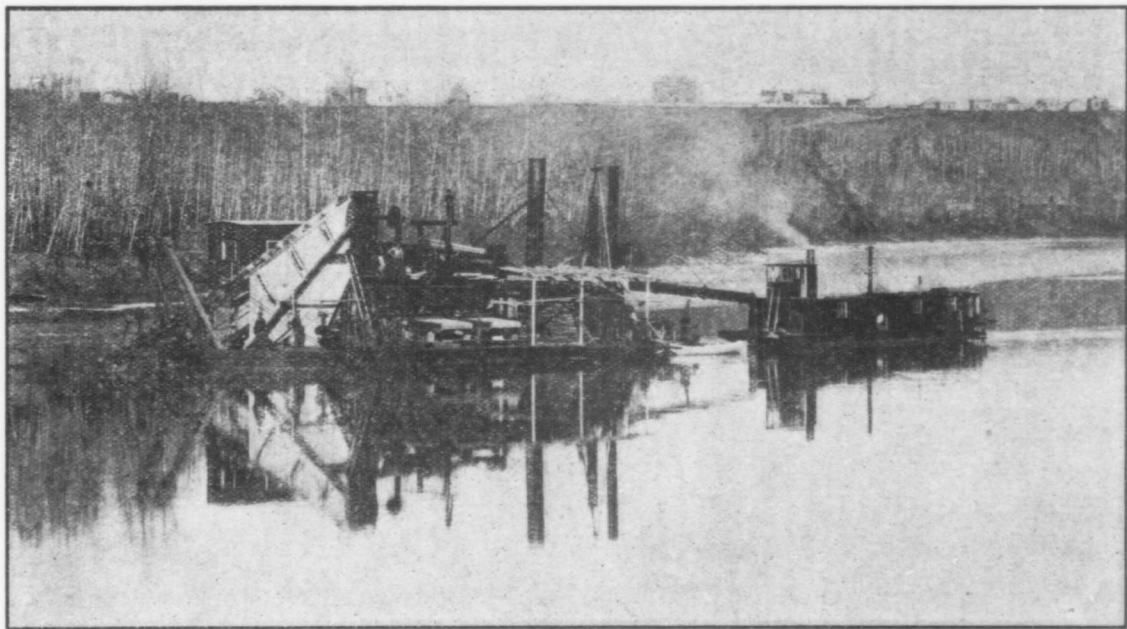
"That the prevailing southwest summer winds of the country in question bring the warmth and moisture which render possible the far northern cereal growth, and sensibly affect the climate of the region as far north as the Arctic Circle and as far east as the eastern rim of the Mackenzie basin."

FISHERIES AND FORESTS.

The report goes on to say that the quantity and quality of the fresh water food fishes implies the future supply of a great portion of the North American continent; and that the seal, walrus, whale and porpoise are found off the mouths of the Mackenzie as well as in its estuary. Further, that "the forest area has upon it a growth of trees well suited for house and ship building, for mining, railway and bridging purposes of great prospective value to the treeless regions of Canada and the United States to the South."

GOLD AND OTHER MINES.

"Of the mines of this vast region little is known of that part east of the Mackenzie River and north of Great Slave Lake. Of the western affluents of the Mackenzie enough is known to show that on the head waters of the Peace, Liard and Peel rivers there are from 150,000 to 200,000 square miles which may be considered auriferous, while Canada possesses west of the Rocky Mountains, at the head waters of these rivers and on the Yukon an immense metalliferous area, principally of gold-bearing rocks. Other useful, but inferior, minerals are



C. W. Mathers, Photographer, Edmonton.

GOLD DREDGE "OTTER," WITH TENDER, FROM STRATHCONA, SHOWING EDMONTON IN THE BACKGROUND.

also known to exist, such as coal, iron, salt and petroleum in immense quantities. Concerning the latter:—"The evidence submitted to your committee points to the existence in the Athabasca and Mackenzie valleys of the most extensive petroleum field in America, if not in the world."

FURS AND GAME.

"The chief present commercial product of the country is in furs, which, as the region in question is the last great fur preserve of the world, are of very great present and prospective value, all the finer furs of commerce being there found. This expert evidence given by such men as Professors Dawson, Bell and Macoun, shows the country to be also stocked with large and small game, besides fur-bearing animals. Moose, reindeer, cariboo, elk, Virginia deer, Rocky Mountain goat, Rocky Mountain sheep, musk ox, a very few straggling specimens of the once numerous buffalo or bison, also bears—black, brown, grizzly and polar—occur in the parts of the region suited to them. There are birds of—almost—every wing frequenting certain places in prodigious numbers, of which may be mentioned grebes, loons, gulls, pelicans, ducks in great variety, geese, swans, bitterns, herons, cranes, snipe, sandpipers, plover, hawks, eagles, grouse, ptarmigan, ospreys, owls, kingfishers, woodpeckers flycatchers, horned larks, jays, ravens, crows, blackbirds, and the robin (*merula migratoria*, Linn), all of which breed in the country. The flora is equally varied and interesting to the botanist.

"Your committee have reason to believe that a comparison of the capabilities of this extent of country in our own continent exceeds in extent of navigation, area of arable and pastoral lands, valuable fresh water fisheries, forests and mines, and in capacity to support population, the continental part of Europe to which we have referred, (Norway, Sweden, Denmark, Germany, Austria, and a part of France and Russia).

SPORT AND ADVENTURE.

To the lover of sport and adventure in wild and very imperfectly explored regions this great northland offers a field of ample scope. To the mining man, the geologist, the naturalist, the botanist, and even the hardier type of tourist, a journey through this region would be profitable, useful and enjoyable.

Regarding big game shooting, I am indebted to Mr. C. G. Cowan, of Londonderry, Ireland, a gentleman who has hunted for years in the Rockies about the head waters of the Athabasca and Smoky Rivers, for the following:—"In my opinion, sportsmen who wish to procure a variety of trophies, that usually measure well, could do no better than visit Edmonton. Here one can obtain everything in the way of provisions, pack animals, and the necessary equipments for a few months' shooting trip at reasonable prices. The northern region of the Rockies affords the hunter a more varied bag, and I believe the Atlantic slope gives us better horn measurements than the Pacific side. Wapiti are shot close to Edmonton. Numbers of moose are annually killed in different parts of the district. For bighorn, Rocky Mountain goat, cariboo and bear, the entrance of the Yellow Head Pass makes a delightful 'head-quarters camp.' A few days' travel from here gives one grand chances at those animals. On two different occasions I saw as many as fifty and seventy-five sheep grazing together, and the year before last (1895) I met an Indian who had killed 19 cariboo, 13 sheep, 11 goats, 11 moose, 9 black-tailed deer, and 8 bears in one autumn's hunt within a few days of the Athabasca River."

APPENDIX TO PART SECOND.

UNEXPLORED CANADA.

(Written in 1900.)

The director of the geological survey of Canada, in his report for 1900, makes the amazing statement that practically nothing is known of one-third of the Dominion. He says:—

"There are more than 1,250,000 square miles of unexplored lands in Canada. The entire area of the Dominion is computed at 3,450,257 square miles, consequently one-third of this country has yet been untravelled by the explorer. Exclusive of the inhospitable detached Arctic portions, 954,000 square miles is, for all practical purpose, entirely unknown."

A careful estimate is made of the unexplored regions. Beginning at the extreme northwest of the Dominion, the first of these areas is between the eastern boundary of Alaska, the Porcupine River, and the Arctic coast, about 9,500 square miles in extent, or somewhat

smaller than Belgium, and lying entirely within the Arctic Circle. The next is west of the Lewes and Yukon rivers, and extends to the boundary of Alaska. Until last year 32,000 square miles in this area was unexplored, but a part has since been travelled. A third area of 27,000 square miles—nearly twice as large as Scotland—lies between the Lewes, Pelly and Stikine rivers. Between the Pelly and Mackenzie rivers is another large tract of 100,000 square miles, or about double the size of England. It includes nearly 600 miles of the main Rocky Mountain range. An unexplored area of 50,000 square miles is found between Great Bear Lake and the Arctic coast, being nearly all to the north of the Arctic Circle. Nearly as large as Portugal is another tract between Great Bear Lake, the Mackenzie River, and the western part of Great Slave Lake, in all 35,000 square miles. Lying between Stikine and Laird river, to the north, and the Skeena and Peace rivers, to the south, is an area of 81,000 square miles, which, except for a recent visit by a field party, is quite unexplored. Of the 35,000 square miles southeast of Athabasca Lake, little is known, except

that it has been crossed by a field party en route to Fort Churchill. East of the Coppermine River and west of Bathurst Inlet, lies 7,500 miles of unexplored land, which may be compared to half the size of Switzerland. Eastward from this, lying between the Arctic coast and Back's River, is an area of 31,000 square miles, or about equal to Ireland. Much larger than Great Britain and Ireland, and embracing 178 square miles, is the region bounded by Back's River, Great Slave Lake, Athabasca Lake, Hatchet and Reindeer Lakes, Churchill River, and the west coast of Hudson's Bay. This country includes the barren grounds of the continent. Mr. J. B. Tryell recently struck through this country on his trip to Fort Churchill, on the Churchill River, but could only make a preliminary exploration.

The mineral wealth of this unknown region is undoubtedly immense, and perhaps almost inexhaustible; while the forests of wood, now of so little value, will, when brought to the markets of the world, become a source of large profit.

(Note.—See Chesterfield Inlet in Part Third.)

PART THIRD.

(Written in 1901.)

CHAPTER I.

Mineral Resources.

Whilst the unexcelled treasures of the vegetable kingdom have hitherto been, and will remain, the chief attractions of the country; Nature has also conferred on it vast stores of easily-accessible mineral wealth. So diversified are these resources that on many a homestead may be found together, in useful quantities, wood and water, grain and grass, coal and gold.

Of these minerals, gold was the first to be utilized; several hundreds of thousands of dollars having been won by the pioneer miners from the bars of the Saskatchewan. Next coal seams were opened. Then the manufacture of brick, of which the town of Edmonton is largely built, was begun.

CLAYS.

Besides these excellent clays, which are manufactured into brick at four well-equipped yards in and near Edmonton, beds of pottery clay exist near town; and Kaolin—the kind of clay used in the manufacture of fine china and porcelain ware—is found on the Jasper trail. Large deposits of mineral pigments occur near Victoria.

NATURAL GAS

Perhaps the most important subterranean treasure of the district as yet unutilized exists in an immense reservoir of natural gas, which is believed by geologists to underlie the whole district. For heating, lighting and smelting purposes, as well as for driving gas engines, this gas—which has been tapped at various depths in several places, notably at the Pelican River—is of the finest quality.

PETROLEUM.

Natural gas is considered a good indication of the existence of petroleum underneath. From extensive surface indications of petroleum occurring on the Athabasca River north of Edmonton, and near the Crow's Nest Pass in Southern Alberta, as well as minor outcrops of tar sand at Egg Lake near Edmonton, the Dominion Government were induced to undertake a series of experimental borings to determine whether a commercially profitable supply existed. The borings were contracted for during three summer seasons at three different localities, but failed to reach the depth, below the limestone, at which the Geological Survey expected to find the liquid oil. These failures to reach the desired depth are ascribed to the outburst of natural gas after a depth of 837 feet had been reached at the junction of the Pelican with the Athabasca River, and to the jamming of the casing at 1,840 feet in the Victoria bore hole on the Saskatchewan. Aided by the information gained in these experiments undoubtedly more successful operations will be undertaken in the near future.

Saskatchewan Alluvial Gold Mining.

Entered according to Act of the Parliament of Canada in the year 1901, by Isaac Cowie, at the Department of Agriculture.

An immense drift deposit through which gold is diffused in varying quantities underlies the western portions of Alberta and Athabasca from the South Saskatchewan, and on north to the Liard River. Though gold has been found on the uplands in different parts of this region, more especially about Edmonton, it is only in the valleys of the rivers, which now crosscut it, that washing for gold has been practised. Though some work has been done on the South Saskatchewan, and some few miners work on the Peace River, the Athabasca and McLeod, the North Saskatchewan, for a hundred miles above, and two hundred miles below Edmonton, has been and continues to be the field which engages the larger number of men, and on account of the uniformity of the deposit and its accessibility, has yielded the most profitable results.

The Saskatchewan river flows in a winding course at the bottom of a valley about two hundred feet lower than the surrounding country. The valley being about a mile wide generally, while the width of the river is only about one

thousand feet, large flats, on an average about twenty-five feet above high water mark, occupy the entire bottom of the valley except that taken up by the present river bed. The ancient beds of the river are frequently traceable on these flats as well as on the terraced sides of the valley, which has evidently been formed by the erosive action of the river.

A very remarkable fact in connection with Saskatchewan mining is that after the surface of a gold yielding bar or beach has been worked out, the same bar after submergence under a rise of water is on the subsidence thereof again found to contain paying quantities of gold. Like the widow's cruse it is ever replenished. Some supposing it came from the Rocky Mountains were confronted with the fact that the river from a point one hundred miles above Edmonton ceases to contain any but the merest traces. It is now generally admitted that the source is the banks of the river, in the immediate vicinity of the bars and above them, from which the fresh supply is sluiced and eroded, and deposited on the bars during high stages of water.

In 1858, Sir James Hector, now director of the geological survey of New Zealand, at that time the medical officer and naturalist of the British government's exploratory expedition under Captain Palliser, discovered gold in the gravel of the Saskatchewan river at Edmonton. On the virgin bars in 1865, the first miners taking advantage of this discovery frequently made \$15 and \$20 a day. As the virgin deposit became worked out the yield of these bars gradually dwindled down until of late years \$1.50 or \$2.00 might be the average earning, and the miner who struck \$5.00 per day was considered fortunate. The mode of operation and apparatus used by the miners are very simple and primitive. A wooden trough about 7 feet long and 1 foot 2 inches wide with sides 1 foot high, is set up on trestles so that the rear end, which is closed, is on a higher level than the front end which is open. Under this open lower end of the trough, called "the dump box," is a sieve or screen 24 inches wide and 18 inches long, consisting of horizontal iron bars set in a wooden frame the upper ends of which resemble an inverted V, giving this screen, known as "a grizzley," a resemblance to the roof of a house with horizontal instead



C. W. Mathers, Photographer, Edmonton.

GOLD MINER AT WORK, WITH GRIZZLY.

of transverse rafters. Under this grizzly is the sluice box with sloping shelves, the uppermost which runs back to near the back of the box while the undermost runs forward from the back to and through the front of the box and terminates in a short open ended trough. These shelves are covered with pieces of ordinary blankets and are sometimes provided at intervals with small transverse wooden bars called riffles, to catch the gold. Most sluice boxes are also provided with a sheet iron shelf or apron immediately underneath the bars of the grizzly and intervening between them and the blanketed shelves. The sand and water is by it conveyed over and allowed to fall into a transverse sheet iron trough, which is three inches deep and filled with larger pebbles. This trough is intended to catch any globules of quicksilver which might be in the material and passing over the succeeding blanketed shelves carry with it gold to the tailings. The other necessary tools consist of a miner's pick and shovel, a gold washpan; also a tin dipper with a long wooden handle. For the purpose of moving from place to place on the river, the miner is usually provided with a camping outfit and a dug out wooden canoe or flat bottomed punt.

Provided with these appliances, the miner after finding a suitable bar begins operations by shoveling the payable sand, clay and gravel, otherwise "pay dirt," into the dump box. With the dipper water is then poured on to the pay dirt, disintegrating it and causing it to flow down on to the grizzly, the bars of which separate the gravel from the sand by shedding the gravel off its sloping sides and allowing the sand to fall through the bars on to the shelves of the sluice box before described.

The refilling and washing out of the dump box is again and again proceeded with till evening generally, when the blankets are taken out of the sluice box, and washed in a tub of water to free them of the adhering gold flakes and sand. The golden sand thus deposited at the bottom of the tub into which quicksilver has also been put, is then placed in the gold washing pan, and the sand and other matter lighter than gold separated from it by putting water in the pan, agitating the contents and spilling away the turbid water till only the gold and heaviest particles of sand

and platinum are left in the pan. Quicksilver by its property of mixing or amalgamating with gold takes up the latter and separates it from the remaining sand and platinum. The gold and mercury amalgam so obtained is then placed in a bag of buckskin through the pores of which the mercury is for the most part squeezed out. The resulting mass of amalgam is then roasted on a shovel over the fire to volatilize and so get rid of the remaining mercury, leaving a porous mass of almost pure gold.

Such is a brief description of this simple gold mining, the outfit required for which is by no means costly and much of it of a kind a handy man makes for himself. Probably from \$10.00 to \$50 would be found enough for a man to set up in business as a "free miner."

Unfortunately this species of mining can only be carried on to the best advantage during the summer and then only during low stages of water on the river, as during high water the gold bearing bars are covered. About 300 men found intermittent employment on the Saskatchewan at this during the summer of 1896, and are known to have sold over \$50,000 of gold at the banks, besides what was sent out by other channels.

During the winter the practice of "drifting" or tunnelling in to the auriferous gravel, which underlies most of the flat lands bordering the river, is becoming more and more prevalent. The gravel so obtained is not usually washed until open water. At this work most of those engaged have made a bare living, whilst only a few of the more skillful, industrious and fortunate have done well.

It will be seen by the above that the poor man's gold mining has lately been far from offering much inducement to men who could find steady work at ordinary wages. Nevertheless, the opportunity of finding even this employment has been a boon to laboring men, and now it is confidently believed that a new and more profitable departure is about to take place in this branch of mining by the discovery of the value of the "black sand," always found associated with the gold, which up to the fall of 1896, had been thrown away as a waste product. It is probable that improved methods and more effective, though still simple and cheap, appliances will be invented, which will save this black sand, and also a much larger

proportion of the exceeding fine gold than hitherto.

Whilst it had been the opinion of many that the primitive appliances of the pick, shovel and grizzly miner failed to save most of the gold, the great loss going on was not brought to public notice until 1896, when, by tests made of samples sent to Omaha, it was discovered that the loss was in the neighborhood of ninety per cent., and that an astonishingly large value of gold and platinum resided in the black sand tailings of the hand miners.

In order to verify these reports and establish on unquestionable authority the value of the ore, I had assays made by Mr. W. Pellew-Harvey, F.C.S., Vancouver, one of the leading assayers on the continent.

The first samples sent to Mr. Harvey were taken from a flat underneath which miners have been drifting during the winter for many years, and which is probably a fair average sample of the bottom lands of the valley. The section of this ground is

(1st) 20 feet surface and subsoil, assaying 50 cents per ton.

(2nd) 9 inches hard-pan, assaying nil.

(3rd) 31-4 feet of gravel "pay streak," assaying \$2.50 per ton.

Out of number three, "pay streak," a sample of the sand remaining in the pan after all the gold, savable by the usual local process of amalgamation with quicksilver, had been extracted with it, yielded by assay the value of \$268.50 per ton in gold and platinum (11 ounces 2 dwt. gold at \$20 per ounce; and 8 ounces 2 dwt. platinum at \$15 per ounce). The miner working pay streak number three was making \$1.50 per day when handling an amount of sand and gravel estimated at six tons. That is to say, out of a possible \$15 he was only saving one-tenth, which agrees with the results obtained in Omaha pretty nearly.

As the result of personal experiment I had observed that much of the gold and black sand is in so minute a state as to be held in suspension in water for a long time after agitation and to actually float on the surface. From this it appeared that water, dashed or sluiced on the auriferous gravel in the manner customary in grizzly and every kind of dredge mining hitherto in use here, must carry off the suspended and floating gold and fine black sand,

leaving only the very heaviest particles and those at the very bottom of the stream of water a chance of being caught on either blanket or amalgam plate; all of which pointed to the likelihood that the cyanide or some other chemical or dry process must be adopted to extract the full value from the ore. A test was accordingly made of the cyanide process by Mr. Harvey, on gravel from pay streak number three, which as quoted above assayed \$2.50 per ton in gold. The tests were made on the material after it had been passed through a coarse sieve to get rid of the large stones. The results in Mr. Harvey's own words were as follows:

"Cyanide consumption. The cyanide consumed by this material was 2lbs. per ton of ore, but it would be considerably less on a large scale.

"Percolation Test, No. 1. On 1lb. of ore, .5 per cent. cyanide. Treatment for three days. Assay of solution after treatment, 3 dwt., 21 grs. per ton (gold). Assay of tailings, after treatment, 0 dwt., 12 grs., per ton (gold). Which is equal to an extraction of 87 per cent.

"Percolation Test, No. 2. On 1lb. ore, .5 per cent. cyanide. Treatment three days. Assay of solution, after treatment, 4 dwt., 5 grs., per ton (gold). Assay of tailings, after treatment, traces, per ton (gold). This extraction is practically complete.

"From the above tests it is evident that practically the whole of the gold in this black sand may be extracted by cyanide. I should estimate the cost of such treatment would not exceed \$1.25 per ton of material. To this you must add your estimated cost of getting your sand into the vats." Mr. Harvey is the Canadian agent of the Cassel Gold Extracting Company, limited, of Glasgow.

Two other assays were also obtained by me from Mr. Harvey. One of which was of sand (from the same locality as first samples), washed out of the tailings which pass over the blanket of the sluice box and are never caught or panned out. The material had three times been washed and subjected to the loss of all the value contained in the turbid water; it consisted of about 75 per cent. grey (quartz?) sand and 25 per cent. "black sand"; and assayed \$49 in gold with traces of platinum. The other assay was of concentrated and

pure black sand obtained from Mr. Frank Osborne, of Edmonton. Mr. Osborne informed me that he had carefully washed away all the "grey" sand from this concentrate and thereafter blown all the lighter dross out of it; by which process he had also saved \$16 worth of gold from it, leaving some visible gold to be removed by amalgamation from the remaining intensely black "sand." I quote Mr. Harvey's assay: "Sample Black Sand. This sample, which weighed 71.2 oz. Troy, gave by amalgamation 33.95 grains of gold. This would correspond to a value of \$6035 per ton of sand. The residue from amalgamation on assay gave 3 ozs. 13 cwt. per ton of platinum and traces of gold only. The value of this platinum per ton of sand would be about \$54. From the tests which I have carried out on these samples of tailings and black sand it is evident that practically the whole of gold contained in them may be recovered by the ordinary process of amalgamation. With regard to the fine sand washed away the cost of treating such material by cyanide would be about \$1.25 per ton, if worked on a large scale, so that the question would be whether the sand be rich enough to bear the cost of such treatment."

I was also informed by Mr. Harvey that there was no metal of greater value than gold and platinum in the samples submitted to him, except it might be tin. An assay of black sand obtained by Mr. T. A. Stephen, from tailings of a grizzly working on the same flat off which my first sample sent Mr. Harvey was obtained, showed a value of \$325 per ton in gold, silver, platinum and iridium, with traces of rarer metals, according to Clarke and Ordway, Rossland.

An assay procured from Mr. Thomas Heys, of the Ontario school of chemistry and pharmacy, by Mr. W. S. Edmiston, of Edmonton, confirms the previous assays in showing that the ordinary pay gravel contains a value of \$2.40 per ton in gold alone. A 71-2 per cent concentrate of this gravel gave a value of \$24.10 per ton. Regarding this Mr. Heys says: "In my opinion the results obtained are very satisfactory. By a good system of washing and concentrating they would yield rich results. It would appear the deposit is a very rich one, and the facilities for working and concentrating are exceedingly favorable."

The proportion of this concentrated "black sand" contained in the gravel is not uniform, results of from three-quarters of one per cent. to one and three-quarters per cent. having been obtained.

The extent and value of the gold field on the flats bordering the North Saskatchewan river alone has been estimated by a gentleman, having the professional training and standing, as well as the local knowledge, which entitle his opinion to great weight, as follows:

"Re (first mentioned) assay of Mr. Harvey of samples of alluvial gold bearing strata, the following are the figures I should deduct from same: "1 cubic yard of dirt equals 3,200 lbs. "At 50 cents per ton equals 80 cents per cubic yard.

"1 cubic yard of gravel equals 2,600 lbs. At \$2.50 per ton equals \$3.33 per cubic yard.

"Assuming the surface soil to be 20 feet in thickness, the hard pan 1 foot, and the pay gravel 3 feet 6 inches, then the average of the whole would be:

6 2/3 yards at 80 cents per cubic yard	\$5.06
1/3 yard at nil	0.00
1 1/6 at \$3.33,	3.88

"7 1/6 yards Totals \$8.94

"or an average of \$1.14 per cubic yard.

"With 4840 square yards of surface per acre, each yielding to the depth mentioned \$8.94, the total value per acre would seem to be \$43,269.60; and assuming you have between Goose Encampment and Victoria, one hundred and fifty miles of river with an average width of benches of 10 chains, or 80 acres per mile, being a total of 12,000 acres of surface; this area placed at \$43,000 per acre would give as the total value of the deposit upwards of \$500,000,000."

Though there is a reasonable probability that many of the bars now underneath the flats might be as productive as those virgin bars off which the first miners obtained \$15 and \$20 per day; yet, on account of the flats not being entirely and uniformly underlaid by gravel and the gravel not being all of a similar auriferous value, it is likely that the foregoing approximation is fairly correct.

Through the kindness of Mr. W. S. Edmiston, of Edmonton, I am able to

quote estimates of the cost and profit of carrying on mining on a flat adjoining the river. The overburden being taken at 18 feet, and gravel underneath at 3 feet, and the concentration to be one of 71-2 per cent. obtained by washing the gravel, carrying a value of \$24.10 per ton as per Mr. Heys' assay given in a preceding page. The estimates, as under, are by Mr. W. T. Jennings, C. E., of Toronto, formerly city engineer of that place:

OUTLAY.

Removing 18 feet, top earth, by steam shovel, 600 cubic yards, @ 10c,	\$60.00
Removing 3 feet auriferous gravel, 100 cubic yards, @ 15c,	15.00
Washing 100 cubic yards gravel @ 10c,	10.00
Rolling and treating 7½ tons of concentrates obtained from 100 tons gravel @ \$1.50,	11.25
Land, superintendence and interest on plant,	14.50
	\$110.75

RETURNS.

7½ tons concentrates at \$24.10,	\$180.75
Less outlay as above,	110.75
	\$70.00

Mr. Jennings goes on to say that a good ordinary steam shovel and a small rolling and concentrating plant, on a scow, will work up the above quantity; and that the whole cost of plant in place and ready for work need not exceed \$16,000.

From the above it would appear that a highly profitable business could be done by a process which would only extract \$180.75 out of a possible \$240.00 (the gravel having been found by Mr. Heys to contain \$2.40 in gold per ton), and by appliances of which the cost of operation seems highly estimated.

As on other gold bearing streams, where rises of water cause frequent interruptions to the miners, and it is believed that the richer deposits lie below low water mark, dredging machines devised to meet these conditions were placed on the Saskatchewan. They were of various makes according to the differing means, ingenuity, and knowledge of their owners, and, although not

known to be very profitable—except in a few cases—their operations were of service to the future of the industry by demonstrating the existence of payable gold over a large area, and the necessity of using the perfected large dredging and saving machinery of the New Zealand type. The small hand and steam power scoop and dipper dredges were abandoned when, by a reduction in railway freight rates on produce to the British Columbia mines, farming became more profitable, leaving only the larger dipper dredges of the Star Mining and the Loveland Dredging Companies in the business. A Chicago concern placed on the river a large suction dredge, which was tested and found unsuitable in 1899, again altered at heavy expense in 1900, and again found as unsuccessful for gold winning purposes as this alluring type of dredge has proved elsewhere. The owners intend converting it into one of the elevator bucket and ladder kind; their trials having shown the wealth of the river to be fully up to all expectations.

Near Big Island, about 13 miles up stream from Edmonton, are situated the claims of the "Star" and "Loveland" companies. The Star dredge operated successfully and profitably during two part seasons, until carried away by an unprecedented flood in 1899. It is said to be the intention of this company to resume work with a dredge of large capacity, as soon as the expected success of the large new dredges of the Saskatchewan and the Alberta companies may enable them to procure the further capital required to operate on an adequately large scale. Their old dredge had a 12 H. P. engine, was operated by three men and a boy, and won from \$25 to \$40 a day. The average amount saved out of one cubic yard of gravel, weighing 3,000 lbs., was 40 cents, and besides this much fine gold was known to escape their imperfect appliances.

The Loveland dredge is of larger capacity, and is operated by two separate 20 H. P. engines. It has been in use during 1899, 1900 and the present season. Their ground appears to be rich enough to be profitably worked by a dipper dredge, and their chief trouble was with the gold saving apparatus. This, which caused much loss of time, was arranged to their satisfaction in 1900. Before that, in 1899, they sold locally \$4,000 worth of gold, and probably exported

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Great expectations were formed of the large "Otter" dredge of the Saskatchewan Gold and Platinum Proprietary, erected by Mr. A. E. Hogue, partially on the New Zealand model and partially on combinations of his own. It was completed too late in 1898 for a test to be made. In 1899 it was tried, and, while again demonstrating the richness of the river, proved unsuitable wherever departures had been made from the New Zealand system. This costly dredge was consequently condemned by Mr. George Macfarlane, another Australian mining man, who succeeded Mr. Hogue as manager in the fall of 1899. Mr. Macfarlane was, in the winter of 1899-1900, sent by the Proprietary to New Zealand to acquaint himself with the most recent dredging methods there. Upon his return to England he condemned the "Otter" and caused his company to order a sister dredge to that already ordered by the Alberta Gold Dredging Syndicate, Limited, of London, to be constructed by Messrs. Renshaw & Co., of Stoke-on-Trent, on plans from the New Zealand Government's blue book procured and sent by me to the Alberta company.

During the season of 1900 the "Otter" was refitted with a new screen and gold saving tables by Mr. Macfarlane, but the new machinery arriving late, the old machinery frequently breaking down and unseasonably bad weather setting in prevented much more being done than to again prove that "the gold is there." A Whiffley concentrator was procured by Mr. Macfarlane and proved, even on the unsteady deck of the "Otter," most serviceable in concentrating the sand from the gold saving tables.

The two new dredges are supplied with Robey's condensing engines, giving them 100 H. P. each. Their estimated capacity is 3,000 cubic yards each in 24 hours, with machinery so nearly automatic that three men per shift are expected to handle them. The dredge of the Saskatchewan Proprietary is named the "Minto;" that of the Alberta Syndicate the "Alberta," and they are now (May, 1901) expected to be soon at work. The manager of both concerns at Edmonton is at present Mr. F. P. Hobson, who has had two season's

dredge mining experience on the "Otter." The success of those dredges is anxiously hoped for by everyone interested in Saskatchewan gold mining.

How profitable is this industry of Gold Dredging in New Zealand may be seen from the following figures taken from the official list of the Dunedin Stock Exchange, and from Government Reports:

COMPANY.	Value of Gold per cubic yard.		Par value of fully paid shares.	Market price of fully paid-up shares, £ S D.	Dividends Paid.	Percentage of dividends to capital.			
	pence	£							
Enterprise	3½	1	3	2	0	14	6	172	
Golden Treasure	2	1	3	5	0	2	14	0	270
Golden Gate	2	1	10	0	1	9	0	145	
Golden Reen....	2	1	1	0	0	1	6	0	130
Clyde.....	2½	1	2	5	0	1	16	6	182
Otago.....		1	2	7	6	1	5	6	127

Averages derived from the above table show: Gold saved per cubic yard worked, 5 cents; selling value above par of each original share, \$7.65, and a dividend on each original share of 171 per cent. per annum. Gravel yielding so little as 5 cents per cubic yard is seldom found on the Saskatchewan, where it must contain 25 cents to pay the hand miner, and an average of 40 cents has been often obtained by dredges. This greater value of the gravel; the cheapness of coal for fuel; the lesser depth from which the gravel must be dredged; the looseness of the gravel; the absence of barren overburden; and an easily scraped hard clay and shaly bedrock are all advantages enjoyed on the Saskatchewan as compared with New Zealand.

The eminent man of science, Dr. Dawson, who has now passed away, in summing up the portion of his annual report as director of the Canadian Geological Survey, 1899, dealing with the occurrence of gold on the Saskatchewan and the methods used in New Zealand says: "There appears no reason to doubt that satisfactory results, comparable with those achieved in New Zealand, may be obtained on several rivers of the Northwest, and more particularly on the North Saskatchewan. "Properly constructed dredges of adequate size and capacity will permit work to be carried on continuously about half the year. It is to be remembered that such dredges enable the

"working not only of the bars and the bed of the river, but also of the adjacent river flats, where these do not possess a more permanent value for agricultural purposes. Many of these flats are known to be underlain by auriferous gravels, which have never yet been touched."

Placer is beyond a doubt the easiest and the surest kind of gold mining. Initially it is possible at little expense to dig or bore as many test holes as may be necessary through the soft overburden to the auriferous strata of gravel, and so obtain assays of the gravel and sectional plans from which may be very accurately calculated the value of the ground and the cost of working it. Mining in hard rock requires at the outset to merely follow indications, prospecting machinery as expensive as that required to equip a placer mine and immediately obtain returns therefrom. As soon as a dredge commences to work on the river, and so soon as a flat is stripped of its overburden gold begins to come in to the owners; a rock mine requires often many years of expensive and uncertain work before any returns can be expected.

Hitherto the development of the Gold Dredging Industry on the Saskatchewan has proceeded without attracting much attention outside of the district owing to the small scale on which it has been operated and consequent insignificant results. Should the "Minto" and "Alberta" dredges achieve the success anticipated by their proprietors, many new companies will be formed, creating a market for a large amount of the different kinds of machinery and material used in the construction and operation of dredges, causing the establishment of local works for their repair, and giving to the Edmonton farmer and merchant new customers in the persons of employees directly and indirectly engaged in the dredging industry.

In conclusion it may be of interest to note the successful treatment of auriferous black sand with the Wetherill Magnetic Separator in the experiments conducted by Professor Porter, of McGill University, Montreal, recorded in the report of the Geological Survey for 1900.

LIGNITE COAL.

Just as strata of auriferous gravel are exposed on the steep sides of valleys of streams intersecting the deposits, so

also are successive beds of lignite revealed. The coal mining methods are comparatively as simple as those formerly used by gold miners. With pick and shovel tunnels are opened on seams having a natural outward drainage and a thickness of two feet and upwards. Occasionally perpendicular ventilating shafts are opened, but the danger of explosion seems slight, the miners using uncovered candles.

The soft clays, shales and sandstones, in which the veins of coal occur, are timbered up as the tunnel proceeds. Strap iron rails and small hand-cars are used to convey the excavated material to the mouth of the tunnels, where screens are placed on the slope of the bank. The fine screenings of the mines near town are sold at 50 cents per ton delivered to steam mills and electric works situated on a lower level. The coal suitable for domestic purposes is sold at the pit-mouth for 50 or 75 cents per ton in the country, and for \$1.00 in town; while the price of the same hauled up the bank by team and delivered to consumers in town ranges from \$2 to \$3, according to the state of the roads and that of the labor market. Obviously cheaper mechanical methods of raising the coal to the level of the town could be advantageously adopted.

These great coal beds, lying along the valley of the Saskatchewan, are destined to play an important part in the development of the country. Besides, on account of its cheapness, causing the establishment of various industries and factories in the locality, it is probable that a large export trade will arise, upon the Canadian Northern Railway connecting Edmonton directly with the Eastern Territory and Manitoba. Owing to the occurrence of Maltha, if not finer petroleum, in the vicinity, there is also a likelihood of briquettes, a composition of that substance and coal dust and screenings, being manufactured in the district and exported to great distances, this composite concentrated form of fuel having proved better than coal for many purposes, and more especially for steamships on long ocean voyages.

CHAPTER II.

The Yellow Head Pass.

The great natural facilities of this route through the mountains led to its selection by the Mackenzie Government for their Canadian Pacific Railway. The old survey posts and marks are still

to be seen all along the located line from White Whale Lake to Tete Jeune Cache. The advantage of this route in being entirely free from snow slides can now be realized by those cognizant of the enormous cost of construction and maintenance of the snow sheds required on the lines of railway further south. It is also important to note that this pass affords easy access from the Northwest to the great valley running between the Rockies and the Selkirks from Kootenay to Cariboo, and offering a fine natural highway for communication between the north and south of a richly mineralized region.

In view of the early extension of the Canadian Northern Railway westward through this pass and the Cariboo district to a point, probably Fort Simpson, on the Pacific Ocean, some information on the country as far as the Tete Jeune (Yellow Head) Cache may be of interest.

The pass now known generally as the "Yellow Head," which is the English of the French name, "Tete Jeune," is frequently mentioned as the "Jasper," and sometimes by old Hudson's Bay men as the "Leather" Pass. Its summit is some 250 miles west of Edmonton and at a higher altitude of only 1,575 above sea level—the figures being 3,733 and 2,158 feet, respectively.

Roughly speaking, the celebrated Edmonton mixed farming country extends west of the town, some fifty miles, whence begins a formerly well-wooded region, extending to the foot of the Rocky Mountains. Unfortunately, much of this timber—consisting generally of black and white spruce, poplar and cottonwood—has been destroyed by fire. A greater part of the bottom lands of the Athabasca valley would yield good crops. There is abundance of good grass all along the route from Edmonton to the pass, more particularly in the vicinity of the streams; and a wide belt of pasture, suitable for ranching, extends to the southeast of the mountains. The country generally is capable of sustaining a large amount of stock.

Along the route from Edmonton to Tete Jeune Cache valuable minerals occur. Near the crossing of the Pembina several seams of lignite coal, from 13 feet to 17 feet 10 inches in thickness, are exposed; and smaller seams on the McLeod and Prairie Creek. Boulders of limestone are found at Lac St. Anne, and limestone in situ between Prairie

and Drystone Creeks. Alluvial gold mining can be profitably practised on the McLeod. Quartz veins are seen in many places along the trail from Athabasca to the Cache. On the Miette colours of gold may be obtained, and there are frequent veins of white quartz, sometimes of a thickness of two feet. Here several claims were located by Edmonton men, who obtained assays of \$8.00 per ton from the outcrop. At the faulted junction of the limestones with the conglomerates, near Henry House, a small vein of galena was discovered in 1898 by Mr. McEvoy, of the Geological Survey. This occurrence of gold-bearing quartz on the Miette, and of galena near Henry House, disposes of the oft-repeated assertion that neither vein gold nor silver exist on the eastern slopes of the Rocky Mountains.

Seven miles by trail from the Tete Jeune Cache are to be observed numerous quartz veins, from one to five feet thick, showing oxidized iron-pyrites and argentiferous galena. Large deposits of excellent mica lie near the Cache and extend into the valley of the Canceo River. It is a transparent moscovite of very light greenish cast, occurring in crystals frequently of 18 inches long by 11 inches wide. Several claims have been staked, but only the Bonanza, seven miles south of the Cache, has been worked to any extent, the output being transported by pack-horse to the nearest railway station at Kamloops, a distance of 217 miles. There are two claims held by Edmonton and Strathcona men; the distance to Edmonton being 350 miles.

CHAPTER III.

Railways.

However rich an inland country may be in agricultural and other resources, these can never become fully developed into sources of wealth until quickened into life by the transportation facilities afforded by railways. Elaborate statistics, collected by the United States Government, show that the average cost to the farmer of hauling his produce over ordinary country roads is 25 cents per ton per mile. Anyone using this well-established figure as a basis will quickly see how small the most apparently extortionate railway rates appear in comparison with the enormous toll levied on the farmer for want of good country roads to his nearest market town. The fact of the farmer and the

railway being mutually dependent on each other for prosperity has been nowhere more fully emphasized than in the district of Northern Alberta, where, before February, 1897, the railway rates on agricultural products to the mining districts of the Kootenay were practically prohibitive, and grain-growing profitless in consequence. On that red letter date the railway reduced its rates to a live-and-let-live basis, under which agriculture and every allied industry of the district, including that of transportation, have prospered, as the following figures from the Government reports on the traffic of the Calgary & Edmonton Railway show:

Year.	Freight carried. Receipts.	
	Tons.	
1896	23,001	\$ 94,599
1897	27,081	135,459
1898	127,847	362,916

This traffic has continued to grow up to date, and from two passenger trains a week in 1896 the number has now (June, 1901) risen to a passenger train every week day; while during a great part of the spring two special trains daily were required to keep pace with the traffic between Calgary and Edmonton. Since 1897, the completion of the Crow's Nest Pass Railway has opened the East Kootenay markets and given at the same time better communication with Nelson, Trail and Rossland.

During the past four years the following numbers of homesteads were taken up:

	1897.	1898.	1899.	1900.
Edmonton	294	804	942	1,316
Red Deer	59	164	544	785

In 1900 the Canadian Pacific land sales in Alberta were 170,740 acres; and in the same year the Hudson's Bay Company sold 330 parcels of land.

This year's immigration into the Northwest is exceptionally large. There is a great influx of new-comers from the Dakotas, Montana, Kansas, down even as far as Nebraska—experienced, practical farmers, who find the agricultural conditions in the Northwest, particularly in Alberta, more favorable than in the United States. A good many of them had come out from England originally or had left Canada and are now returning. They find the land cheaper than in the States, and in some cases they have the advantage of free homesteads.

Besides the existing railway accommodation, it is expected that Messrs. Mackenzie & Mann's Canadian Northern Railway, now being pushed on from Manitoba (with connections at Lake Superior) to Prince Albert, will reach Edmonton in a couple of years and there connect with the Edmonton, Yukon and Pacific Railway. This last-named line is chartered by the Dominion as far as the summit of the Yellow Head Pass, whence, probably, under a British Columbia charter, it will run through the Cariboo country and on to its ultimate destination on the Pacific Ocean and the Yukon River. The first five miles of Edmonton, Yukon & Pacific, connecting the town of Edmonton with the Calgary and Edmonton Railway near Strathcona, is now under construction, crossing the Saskatchewan River on a steel railway and traffic bridge, completed by the Dominion Government some twelve months ago.

The Dominion Government has explored routes for a line of railway running from Edmonton, via Fort Assiniboine, on the Athabasca, to Dunvegan, on the Peace River, thence crossing the Rocky Mountains by the valley of the Peace, on to Fort Connelly, in the Cassiar district, where the line divides into two branches, one running down the Skeena to Port Simpson on the Pacific, and the other by the Stikine to Teslin Lake.

A charter has been granted for a local railway running from Strathcona in a loop through Fort Saskatchewan, sweeping round by Beaver Lake, and back to Strathcona. This will pass through a rich, well-settled district.

The town of Edmonton holds a charter for an electric street railway with power to construct branches to the towns of Strathcona, Fort Saskatchewan and St. Albert; and to the Stony Plain and Sturgeon River settlements.

CHAPTER IV.

Explorations in the North Land.

THE KLONDIKE RUSH.

During the rush to the Klondike Gold Diggings from all quarters of the world, in 1897, people, hearing of an inland route through the Edmonton, Athabasca and Mackenzie districts, flocked in large numbers to Edmonton, as much in the hope of finding new gold fields on the way, as on account of the over-crowded

state of the then difficult and limited means of access from the coast to the Klondike. At the commencement of the excitement, it was well known that, as the result of many an arduous exploratory journey of their employees, and after maintaining for years a boat and portage route by the Liard and Frances Rivers and Frances Lake, from whence a portage across the height of land was made to the head waters of the Yukon, on the Pelly River, the Liard route, and the chain of posts dependent on it, from Fort Halkett to Fort Selkirk—were abandoned on account of the difficulties of its navigation, even by the experienced boatmen of the fur company. Ere the hardy explorer, Campbell, had followed up his original discovery of the Pelly, by later descending it to the main Yukon, other officers of the Hudson's Bay Company had crossed the mountains, near the mouth of the Mackenzie, from Peel River to the Bell, and by it and the Porcupine reached the forks of the Yukon, where the fort of that name was built. The portage over the mountains, between Peel and Bell Rivers, 60 miles apart, was used both summer and winter; but the main supplies were drawn across it in the latter season by dog trains, for in summer the capacity of the route was limited to the small quantity a man could carry on his back over a poor trail. Consequently, the majority of the people going from Edmonton itself took this, the only regularly travelled route, to Athabasca River by waggon, and down it and the Mackenzie to Fort Macpherson, on the Peel, where, wintering on the portage, they hauled across their outfits; and, in spring, descended the Bell and Porcupine to Fort Yukon, at which they found steamboats to take them upstream to Dawson. It was a long, round-about route, but safe, sure, and suitable for those taking in large supplies. By this way, even a small steamboat was taken from Edmonton to Dawson by Mr. Wilson. There is on record, also, the feat of one Lamoureaux and another French-Canadian voyageur, who went by this route to Dawson by canoe in six weeks' time.

Others, again, took the Mackenzie route as far as Fort Simpson, at which it is joined by the Liard, and, ascending this river to the foot of the dangerous rapids, passed the winter in hauling their outfit by hand and dog-sled past the obstructions, above which they constructed craft to go up the Frances

River and Lake to the divide between them and the Pelly, which was descended by means of rafts. On Hooole's rapids, on the Pelly, where a portage should have been made, two men running them were drowned. Here it may be observed that the only cases of drowning, during this rush of many inexperienced men, recorded on the "Edmonton Route," were these two, and by falling overboard, one at the Grand Rapids of the Athabasca, and another on Great Slave Lake. Several of the men who had reached the head of the rapids of the Liard, for various reasons—principally shortage of food—turned southwesterly to Dease Lake, and took the fur traders' ordinary route to the Pacific Coast.

Not content with these old river routes, and desiring the opening of all land tracks from Edmonton, one to the head of the Pelly, and another to the head of boat navigation of the Liard, on the east side of the Rockies, the people of Edmonton made such strenuous representations to the Northwest and the Dominion Governments as to induce them to open a waggon road from the end of the old trail between Edmonton and Fort Assiniboine, on the Athabasca, to Lesser Slave Lake, there to join the Hudson's Bay Company's waggon road to Peace River Landing; and also to open a pack trail from St. John's, on the Peace River, to the head of boat navigation on the west branch of the Nelson, an affluent of the Liard. A waggon road existed from Peace Landing to Dunvegan, and was improved thence to St. John's.

Besides these undertakings, which were made passable in a dry season, in course of one winter, to Lesser Slave Lake, and of the following summer, to the Nelson, the Dominion Government sent a party, under Inspector Moodie, of the Northwest Mounted Police, to penetrate with pack horses from St. John's, on the Peace, to the Pelly. Discovering a pass through the Rocky Mountains to the north of St. John's, this party reached, and passed the rest of the winter at Fort Graham, on the north branch of the Peace, west of the mountains. There a number of miners had already found their way, by land and water, up the Peace River, as far as the Rocky Mountain portage, from the upper end of which they had used boats and canoes. During the following summer, Mr. Moodie succeeded in

reaching the Pelly with his pack horses, which were sent back from there, while he descended by water to Fort Selkirk.

A few of the prospectors started out in winter, from Edmonton to Peace River, with the object of avoiding the series of rapids on the Athabasca, and delay by the late breaking of the ice on Lake Athabasca, by descending the more easily navigable Peace to Fort Smith Landing; thence, after making a portage of 16 miles, uninterrupted navigation down the Slave and Mackenzie begins. Many others who had started out intending to push through to the head waters of the Yukon by land, finding their horses falling, after their arduous experiences of travel by land in a rough country, also took to this downstream route.

No large number availed themselves of the pack trail from St. John's to the head of the Nelson, a route by which anyone starting on the opening of the river would avoid the rapids and portages of the Athabasca and Slave Rivers, and also obviate detention by ice on the Athabasca and Great Slave Lakes, on which navigation opens fully a month later than the stream running into and out of them.

As a further consequence of the desire of Canadians to establish communication through their own territory to the Yukon, the Dominion Government later sent engineers to explore for a railway route through the Peace River Pass, and thence towards the Yukon. These engineers found a practicable railway route into the Omineca country, where this expedition's work ceased, leaving, the writer believes, unexplored, a short portion required to make connection with the surveys of the engineers, who had explored a line from Fort Simpson, on the Pacific, to the Yukon.

It must be understood by the reader that, while an all-Canadian railway from the east of the Rocky Mountains was, and still is, the aspiration of people living east of the range, from Quebec to Alberta, it was never the idea of intelligent men at Edmonton that the more primitive means, just described, of reaching the Yukon could permanently serve a purpose, only to be fulfilled by an all-rail route from Eastern Canada. But, until this should be completed, and until the over-stress which then blockaded the means of transportation from the Pacific should

be relieved, the Edmonton route afforded an alternate way of access, along which much knowledge, useful for the future construction of railways, would be gained, and there was a probability of discovering rich minerals far on this side of the Yukon.

Upon increased facilities from the Pacific being subsequently provided, especially by the White Pass Railway, these ways from Edmonton to the Klondike were, of course, abandoned, not, however, without leaving an increase to our knowledge of the Northland, from which great results may spring. That the Edmonton routes were all more or less passable was demonstrated by the fact that parties reached Dawson by every route tried; and, had the need of still using them remained, they could all have been improved, so as to render them easily travelled. That the Edmonton route should have been called "The Trail of Death" by sensational American Pacific Coast newspapers, and that disappointed men, who, from various causes, turned back, should have abused it, are only displays of human nature; but men long accustomed to travel in such wild countries are, on the other hand, convinced that the routes, as travelled, must have been comparatively easy and safe, otherwise many more accidents and far greater loss of life would have occurred. Out of hundreds travelling by water, only four, as previously stated, met death by drowning; on the land, two were lost in the bush; one was found, shot by an unknown hand; and a number died of scurvy, induced by confinement in close, overheated huts and over-eating unsuitable food during winter.

DISCOVERIES EN ROUTE—PLACER.

While it cannot be said that the travellers by the Edmonton routes have made the possible rich discoveries anticipated by many, still the statement made, that gold was to be found all along the routes, has been fully confirmed. To men, however, whose hope was to find as good ground as existed in the wonderfully wealthy Klondike, the good pay dirt, frequently tested along the way, though under other circumstances enough to satisfy ordinary desires, did not seem good enough. Still, they have added their testimony as to the existence of fine gold—similar to that of the Northern Saskatchewan—on the Athabasca, Smoky, Peace, Liard, and other tributaries of the Mackenzie

River; all of which will eventually be reached by railways and craft for the transport of the heavy dredging, and other mining machinery and supplies necessary for their exploitation.

PEACE RIVER.

On the Finlay branch of the Peace, in the vicinity of Fort Graham, extensive deposits of auriferous quartz (assaying, it is reported, an average of \$30 per ton) were discovered, and several claims taken up, upon which assessment work continues to be done; while a company, represented by Dr. Potts, has taken in, via Edmonton, the heavy mining machinery of a stamp mill to work their claim. Parties interested in these claims propose putting on a series of steamboats on the water routes to these mines, transporting their supplies by land only on the waggon roads from Edmonton to the Athabasca, from Lesser Slave Lake to the Peace, and from the lower to the upper end of the Rocky Mountain portage past the obstructions on the Peace. This feasible project is being pushed by one of these claim-holders, Mr. Grimston, of Montreal; and when carried out will prove of great value in opening up to mining the Peace and its tributaries.

ATHABASCA.

Turning now to the Athabasca and Mackenzie waterway, descending the Athabasca, the roar of the natural gas can be heard many miles before reaching the Pelican, where it has been, unfortunately now for years, escaping in immense volume from a bore-hole abandoned on its account by the Government, when searching for, in liquid form, the source of the indications of petroleum, which show for many miles along the sides of the river valley, above and below Fort McMurray. In a previous chapter mentioned has been made of this subject.

Years ago, samples of gold-bearing rock, galena and iron ore were found on Lake Athabasca, but caused no excitement. Mr. J. B. Tyrrell, of the Geological Survey, in his report of an adventurous journey from Lake Athabasca to the height of land northward, thence downstream by a previously unexplored river, called the Telzoa, to Chesterfield Inlet, discovered a large area of gold-bearing rocks. Neither of these previous finds seem to have attracted any of the Klondikers off the Mackenzie route.

GREAT SLAVE LAKE.

On reaching Great Slave Lake, quite a number stopped to prospect, with the result of the spread of marvellous reports about the richness of that region. Upon representations made from Edmonton, the Geological Survey sent Dr. Bell (who has now succeeded the late Dr. Dawson as Director), to ascertain the value of these reports, and correct the older maps of the lake, which were believed to be inaccurate. In the fall of 1898, a specimen of galena from the Lake was assayed at the Survey Office, and found to contain 38.86 ounces of silver to the ton. In the following winter, a number of samples were received by the Survey, principally from Mr. W. J. Maclean, which showed galena, iron-pyrites and copper-pyrites. Out of thirteen of these which were assayed, five contained traces of gold, and five small quantities of silver. Prefacing Dr. Bell's report, Dr. Dawson, in his official report for 1899, says:—"While Dr. Bell's observations fail to confirm much of what had been currently reported, they will be read with interest, and several facts brought to light appear, to the writer, to indicate the probability of important discoveries in the future." Dr. Bell reports that the southwestern portion of the lake basin is limestone, and the northeastern Cambrian, resting on Archean rocks. In the limestone he mentions black bituminous shales, and the occurrence of galena and blende, on which a number of claims have been staked, which he visited. As the result of many assays, he adds that, while silver was found in traces, and one small bead was obtained from an assay, which he witnessed, the ore in that locality cannot be said to be economically argentiferous. As to gold, he reports that no regular veins of quartz were seen in the Laurentian rocks, where the reported finds had been made; and he goes on to state: In the irregular occurrences of quartz, in these rocks it was always of the glassy, "hungry" kind, in which, generally, throughout Canada, no economic minerals in any workable quantities have ever been found. Neither does he consider the exceptional occurrence of copper ore of any value economically. Dr. Bell goes on to remark that on Great Slave Lake only rich deposits could be worked, chiefly for want of transportation facilities for the ore to market, while, of the existence of such deposits, the

geological character of the country gives little or no hope. On this latter point, the views of the late and those of the present Director of the Geological Survey appear to be at variance; so, while fully acknowledging the high authority of each of these specialists, practical men will probably fall back on the old miner's phrase—"Gold is where you find it," and the possibility of the expectations of many miners of yet making rich finds on Great Slave Lake being fulfilled.

In a paper read before the Historical Society of Manitoba, and printed by them in February, 1901, Mr. W. J. McLean states (page 7):—"I had five samples of copper ore, taken from points on the northwest shore of Great Slave Lake, assayed by Professor Kenrick, of St. John's College (Winnipeg), which gave the following results, viz.:-

No. 1—Copper, 11.3 p. ct., silver a trace.
No. 2— " 15.2 " "
No. 3— " 21.0 " "
No. 4— " 16.5 " "
No. 5— " 27.6 " "

Galena taken from near Fort Resolution assayed 60 oz. of silver to the ton.

On the same page, Mr. McLean remarks:—"If the attractions * * of this great region were better known to wealthy, pleasure-seeking sportsmen and tourists, I feel sure that very many of them would come and spend a month or more of the summer season in Great Slave Lake, which he describes as a sportsman's paradise for canoeing, boating, fishing, and reindeer shooting, amidst beautiful scenery, in an invigorating climate not excelled in any part of the American continent. "There is, no doubt, a great future for this part of the country, with its enormous mineral deposits and great supply of the finest fishes the world can produce."

CHESTERFIELD INLET.

With reference to transportation facilities, which might render even a low grade ore exportable at a profit, it is well known that by the Mackenzie River, which is navigable by lake-going steamboats, with a transhipment at its mouth to ocean vessels, it would be possible to send out ore by the Arctic Ocean and Behring Straits to the Pacific. Besides this route, by the construction of a short portage railway

from Great Slave Lake towards Chesterfield Inlet, direct communication with the Atlantic, through Hudson's Bay and Straits, could be established. For two seasons, Mr. J. W. Tyrrell, C.E., D.L.S., (author of a valuable book, "Across the Sub-Arctic of Canada" (Briggs, Toronto), describing a journey with his brother, Mr. J. B. Tyrrell, of the Geological Survey, from Lake Athabasca to Chesterfield Inlet), has been employed, by the Topographical branch of the Department of the Interior, in exploring the country between Great Slave Lake and the Inlet, with the view of establishing transportation facilities. His reports of the first season's work, appearing in the newspapers, were highly encouraging, and it is expected that his second season's work will lead to definite action, when his report is published.

The certainty of the existence of a route for boats, long ago foreshadowed by Captain Back, between this inland lake and ocean inlet, has been established by the exploration of Mr. David T. Hanbury, who gives an account of it, which is published in the Royal Geographical Society's Journal for July, 1900. Going in by Winnipeg to Churchill, Mr. Hanbury reached the head of ocean navigation, at the west end of Baker's Lake, on 19th July, 1899. Thence ascending the river and passing through Lakes Schultz and Aberdeen, (so named by Tyrrell in the expedition before referred to, in 1893), by canoe and kayak, often assisted by Esquimo, his party hunted their way through "a land of plenty, flowing with fish, deer and small game." The mouth of the Dovebunt River was passed, and they entered the Ark-e-leenik River, flowing from the west. This was the river mentioned, under the Indian name of its head waters, by Captain Back, as a likely means of reaching Chesterfield Inlet. They now entered an unexplored country, on a journey which Hanbury describes as "absurdly easy." "The main branch of the Ark-e-leenik was explored for a distance of 182 miles, and the western branch of it for 117 miles. The divide between the waters of the Hudson's Bay and Great Slave Lake and the Mackenzie River were crossed at an altitude of 1,394 feet, a short distance beyond which we reached Clinton-Colden Lake, and our journey of exploration was safely accomplished. The Ark-e-leenik is a fine, large river—having an even,

"steady current of 4 to 5 miles an hour. The main stream is, without any interruption, navigable for a steamer of considerable draught nearly the whole way. The western branch, which was ascended for a distance of 117 miles, has numerous small and some large lakes on its upper waters, presented no difficulties worth mentioning; a few portages of a mile, one of three miles, and several smaller ones, and the large, peculiar-shaped lake, dotted in on most maps, was reached. * * * Muskox were met with in large numbers along the main Ark-e-leenik River." As the Esquimo do not hunt so far west, nor the Indians so far east, "there is a stretch of country about 80 miles in extent, which is sacred to the muskox." Here they were tame and exhibited no fear of man, only curiosity. Along the river, fish and deer were plentiful, and moose and black bear were found on the main stream. Geese, ducks, ptarmigans and hares were shot. The party always found enough to eat.

Hanbury fell in with some Esquimo from the Arctic Coast, who had come across to the Ark-e-leenik for wood for their implements. They had never seen white men before, but, like all the others he met, they also were quite friendly. They gave him information about deposits of native copper, in their country, from which their dags, spears and arrow heads, needles, etc., are all beaten out.

"From Clinton-Colden Lake to Fond du Lac, on Great Slave Lake, the geography of the country is well known, if not very accurately surveyed. The river flowing from Artillery Lake into Great Slave Lake is only possible for canoes the first 5 miles or so, beyond which distance the river descends, torrent fashion, through a deep, precipitous chasm, to Great Slave Lake." On this river Hanbury lost all his outfit and collections by the capsizing of his canoe. The canoe, with a box containing note books, was eventually recovered, but all the rest of his collections and outfit were gone. For six days after they subsisted on berries, but, falling in with Indians, they procured sufficient dried meat to take them to Fort Resolution, where they landed on 25th September. Red River, near Fort McMurray, on the Athabasca, was reached on 17th October, thence the journey to Edmonton was accomplished by dogs.

From Hanbury's account, it would appear that an ordinary portage, lake and river route, presenting only the difficulties successfully overcome by the fur-traders elsewhere, exists between the head of ocean navigation, at the west end of Baker Lake, and Great Slave Lake. This could be materially improved by the construction of a light portage railway from Great Slave Lake to the head of steamboat navigation on Ark-e-leenik River. According to J. W. Tyrrell, the Doobaunt River is also, with but one possible break, from its mouth, right through the promising auriferous country explored by him and his brother in 1893, easily navigable. The period of navigation is curtailed by ice remaining in the lakes till late in July; still, during the two months of certain, or three months of possible, inland navigation, large quantities of ore could be sent downstream to the sea, thence through Hudson's Bay and Straits, to the open Atlantic. It is understood that Mr. J. W. Tyrrell's present expedition is for the purpose of discovering such a railway route between the great lake and the inlet, upon the building of which, pending the ultimate construction of railways from the south, the profitable mining of low grade ores will largely depend.

GREAT BEAR LAKE.

Mr. J. M. Bell, who had assisted Dr. Bell in the examination of Great Slave Lake in 1899, after wintering at Fort Resolution, in the open season of 1900, proceeded down the Mackenzie and up the Bear River into Great Bear Lake. Thence he went across country to the Coppermine River, and, returning to Bear Lake, found his way back by the Camsell River to Fort Rae, on Slave Lake.

From his reports, it appears that the rocks occurring and their situation in Great Bear are very similar to those around Great Slave Lake, those to the west being Cretaceous and those to the east Cambrian. Gravel beds analogous to those named by McConneil "Saskatchewan Gravels," exist in several parts of the Cretaceous, and seams of from 50 to 60 feet in thickness are exposed on the Bear River. It is not stated whether these were tested for gold. Mention is made of gypsum, salt, iron and quartz. "With regard to the occurrence of copper ores in the Great Bear Lake country, I may say that in the amagdaloid and associated

"rocks, near the Coppermine, specimens of chalcopyrite and stains of carbonate of copper were found, but the localities of the native copper, spoken of by the old explorers, was not met with, as it probably lies farther south. In the greenstones, south of McTavish Bay, occur numerous stringers of calc-spar containing chalcopyrite, and the steep, rocky shores which here present themselves to the lake are often stained with cobalt-bloom and copper-green. According to Indian report, native copper occurs also at the northeast end of McTavish Bay. Siderite was found in pockets, in quartz and calc-spar in Cambrian rocks, on the southern shore of Dease Bay. Several other minerals seem connected with it."

Along the Edmonton route, it is reported that, on the Athabasca River, galena giving \$17. of silver to the ton has been found. By credible Indian report, rich veins of gold occur in the Rockies, west of Fort Norman, also across the divide between the Porcupine and the Arctic Ocean.

CHAPTER V.

Land Prices and Values.

PRIVATE OWNERS' LAND.

These lands are almost invariably the choicest in a country, where all the land is good, having been selected before settlement became thick, by the first comers. That there should be any of it for sale at very reasonable prices, and frequently at less than the standard government and railway price of \$3.00 per acre for unselected wild lands, may require some explanation, more especially when, as often happens, the price asked, for places near markets, is less than the buildings, fences, and plowing must have cost the original selectors. Many of these were bachelors, who, after spending enough of time at their places to secure a patent under the homestead regulations, tired of their solitary existence in what was then a thinly-peopled district, quitted their homesteads, and sought more congenial surroundings, either in their old homes or in towns. Many, during the period of depression which preceded the opening of the markets in the Kootenay, got into debt, mortgaged their farms, and left the country. Quite a number were lured from their farms by the prospects of rapid wealth to be obtained in the Kootenay and Yukon mining camps. Ac-

cident, sickness, death, and altered circumstances, such as occur everywhere else, here also have caused farms to be vacated by the owners and placed on real estate lists for sale. The prices of wild lands range from \$2.50 per acre, for those at present at a distance from railways, to \$10.00 per acre near towns and existing railways. The average would be about \$5.00. Payments can generally be arranged on terms to suit purchasers.

For improved and partially improved farms, the prices vary from \$4.00 for those at a distance, to \$20,000 per acre for those near marketing facilities.

There are a number of reliable agents handling these farm properties, as well as real estate in towns, whose advertisements appear in this book.

SCRIP LANDS AND PAYMENTS.

Another potent cause of lands being absurdly cheap and for sale at even less than the low \$3.00 lands of the government and railway, is the scrip issued by the Dominion Government in extinguishment of the Indian title of the Half-breeds to the land. Wherever treaties have been made with the Indian tribes for the cession of their aboriginal rights to the country in consideration of a perpetual annuity annually, there the claims of those of partially Indian origin have been extinguished, not by the granting of annuities and the retention of land reserves, as in the case of the Indians, but by the issue by the government to each Half-breed, born before the date of these Indian treaties, of a commutation of his or her Indian rights, generally called Half-breed Scrip. The recipient, or his or her parents or guardians, had the option of selecting one of two forms of Scrip—one entitling the beneficiary to choose, enter for and receive a patent from the Crown for any Dominion lands open for homestead or pre-emption entry in Manitoba or the Northwest Territories to the extent of 160 acres, in the case of original heads of families existing when Manitoba and the Northwest Territories were annexed to Canada, and to the extent of 240 acres in the case of their children. Upon a Half-breed, to whom this form of Scrip (generally known as "Land Scrip") has been granted, attaining the age of 18, he or she has the right to enter for the land; but they cannot legally transfer it to others until they become of the age of 21.

The other form of scrip is known as "Cash or Money Scrip." This is issued to the original heads of families, as in the case of Land Scrip, to the amount of \$160. In the case of minors, in the eye of the law, the amount is \$240. This is accepted at its face or par value by the government in payment for any Dominion land purchased, or rented for grazing, haying or mining purposes. In case of minors disposing of this "Cash Scrip," there is no let nor hindrance by law or regulation preventing their doing so during their minority.

The land scrip is issued in denominations of 160 acres and of 80 acres, respectively, which may be used to acquire contiguous or non-contiguous locations. Thus one could take the whole 160 acres in Alberta, and the other 80 acres in Manitoba.

The cash scrip is generally issued in denominations of \$160 and \$80, respectively; but, in the case of the heirs of deceased grantees, the amounts are issued in the fractional portions of the above amounts, representing the beneficiary's interest in the estate. Brokers selling this scrip also have facilities whereby they can sell any fractional amount; and to their names in the advertising columns at the end of the book those interested are referred.

Many of the recipients of scrip from the Government already held sufficient land otherwise for all their requirements; so, for this and other reasons, few of the original grantees have taken up land with their scrip and permanently held it. Consequently, a large amount of the land located by them was bought by others, who undersell the Government and the railway. There is also a considerable quantity of unlocated land scrip, mostly in the hands of brokers, which is available for location on land which may be selected by the intending purchaser. Upon this selection being made, the Half-breed (if over 21 years of age) will make the entry at the land office of the district in which the land is situated, and thereupon issue to the purchaser a quit-claim deed for the same. This quit-claim deed is sent immediately by the purchaser to the Department of the Interior at Ottawa, which in due course will issue a patent for the land to the purchaser.

In the case of cash scrip, no formalities in purchasing are required. The purchaser pays for and obtains possession of the scrip, which is accepted as

cash at the Dominion land offices in making the payments before mentioned, for any quantity of land for sale under the Dominion lands regulations.

The above is a very full description of scrip and its uses, but there are many little details, impossible within these limits to give, which render it advisable for a stranger to purchase it only through reliable dealers of standing, such as bankers and brokers.

The price at which scrip is for sale varies like stock on the market, so it is impossible to give a price here that would remain stationary. However, at all times a very great saving may be made in acquiring Government land by its means.

DOMINION LANDS.

The Government grants, out of the even-numbered sections which they have retained, a homestead of 160 acres to the sole head of a family, or any male over 18 years of age, upon payment of an entry fee of \$10, and the performance of certain homestead duties as to cultivation and residence, particulars of which may be seen in the Government advertisements and pamphlets. The person taking up a homestead has the right to purchase an adjoining 160 acres of the Government, paying for the same in cash or scrip. Generally no one settler is allowed to purchase more than 640 acres of Government land; but, upon application being made to the Department of the Interior, Ottawa, (to which even the smallest application to purchase land is in every case submitted by the local agent), by persons satisfactorily showing they intend to utilize more than 640 acres for farming, haying, ranching or grazing purposes, a greater area may be sold. The Government will not, knowingly, sell land to people who wish to speculate by buying wild land and leaving it waste until, by the exertions of neighboring settlers, it becomes valuable to a man whose sole outlay has been confined to the original purchase money, interest thereon, and the nominal taxation which is levied on such land as has been formed into school and road districts. For all information as to Government land available for homestead or sale enquiries should be made of the Dominion land agent of the district in which it is situated.

CANADIAN PACIFIC RAILWAY LANDS.

This company along its present—and

several of its prospective—lines and branches was granted by the Government nearly half of the land in each township, all odd-numbered sections except 11 and 29, which are school lands, are offered for sale at the rate of \$3 per acre, payable in cash, or in ten equal annual instalments, without any conditions as to cultivation or occupation, or limit as to quantity. There is seldom any Government land to be had near the existing lines of railway. Other lines are, however, under construction, and others expected to be built in the near future. Their advertisement, giving further information, will be found on the front inside page of this book.

HUDSON'S BAY LANDS.

In all townships surveyed south of the North Saskatchewan River, this company are granted 8 and 26, of which the price is \$5.00 per acre, payable in cash, or in five equal annual instalments, with interest on the unpaid principal at 6 per cent. yearly. Full particulars may be obtained from The Commissioner, Hudson's Bay Company, Winnipeg, Manitoba.

SCHOOL LANDS.

Sections 11 and 29 in each township are reserved for school purposes. They may be rented, until sold, from the Government. When they come in demand they are sold by auction.

CALGARY & EDMONTON RAILWAY LANDS.

This company has lands along its line from Calgary to Olds. They also have townsites all along the line from Calgary to Strathcona. Their lands are sold (like those of the Canadian Pacific and Hudson's Bay) without any conditions as to residence and cultivation, at a usual price of \$3 per acre, payable in cash or in ten equal yearly instalments, with interest at 6 per cent. on unpaid principal. Their advertisement appears alongside of the index in the fore part of this book.

INTRINSIC VALUE OF THESE LANDS.

The present prices are away below the intrinsic value of these lands. When one considers that in the United States all the free and cheap lands are practically all taken up, and that the prices realized thereon, by many of the immi-

grants flocking into Alberta, run from \$25 to \$100 per acre of land, which does not yield, as a general thing, more than one-third of that usually obtained in the Edmonton country, he can plainly see that the free Government and the low-priced other lands just described are being presented to purchasers at much less than their actual present, not to speak of their inevitably greater future worth. Let him also enter into the calculation that neither do the prices of produce a farmer sells, nor those of the goods he purchases, compare, on the whole, unfavorably with those of the United States.

The Canadian Northern Railway's trans-continental line will, at an early date, provide transportation to the country east of Edmonton, where, in the justly-lauded Vermilion country, a choice of excellent Government and railway and Hudson's Bay lands can be made. The farmer going there now will be about ready for the railroad when the railroad is ready for him. What a railroad and a good market has done in causing the progress and prosperity of a mixed farming country is exemplified along the line of the Calgary and Edmonton line. From this, and other instances, it is possible to form some idea of the results which will follow the construction, through the Great Fertile Belt of the North Saskatchewan Valley of a trans-continental line, having for its objective the mining development of the famous Cariboo region and a port on the ever-open waters of the Pacific. Upon the shores of this immense ocean, the already large trade between America and the ancient Orient is yet in its infancy; and on the opening of the Nicaragua Canal, to meet the naval necessities of the United States, mighty, far-reaching changes will occur. Then freights, now carried to and from Europe by the long route round Cape Horn, will find their way through the canal; and other freights, now borne by railways in an expensive long haul from the Atlantic to the West, will find their way by the cheaper ocean route to the cities of the Pacific Coast. When this occurs, the commercial balance of power between Eastern and Western America will be readjusted, and such cities as San Francisco and Vancouver will supply the western interior with many articles of European and Eastern American origin, now distributed from New York and Montreal by rail to the West. These eventualities must very

much affect the future of Alberta, and cause land there to greatly increase in value.

For all these reasons, as well as the flow of immigrants from the United States, who came yearly, first in units, then in tens, next in hundreds, and now in thousands, land will never be cheaper than at present, and this is the time to come to Alberta.

CHAPTER VI.

Principal Towns.

Calgary is a bright and busy city of about 4,500 population, which is rapidly increasing. It is situated at the confluence of the Bow and Elbow Rivers, about 70 miles east of the Rocky Mountains. It is the centre of the northern ranching districts of Southern Alberta, and supplies many of the smaller mining towns to the west. It is built principally of grey sandstone, and is the junction of the Calgary and Edmonton branches with the main line of the Canadian Pacific Railway, being a divisional point, with machine shops, etc. It is an important station of the Mounted Police, and in a variety of ways does a large and increasing business. It has waterworks, electric light, first-class hotels, brewery, several churches, and public and private schools, creamery, large abattoir and cold storage and excellent stores.

Edmonton, on the north bank of the Saskatchewan, is the market town for the farmers, traders, miners, etc., on the north side of the Saskatchewan, and for the trade of the great Mackenzie Basin, and, like Calgary, is an outfitting place for those taking the inland route to the Peace River, and other gold-bearing streams rising in the Rocky Mountains. It is a prosperous town with a population of 3,000, is lighted by electricity, and has all the modern adjuncts of thriving towns. Edmonton has several chartered banks, two flour mills, planing factory, pork packing factory, two breweries, two brick-yards, six churches, two hospitals, newspapers, public schools and every branch of business, both wholesale and retail, is represented. There are five coal mines near the town.

Strathcona (formerly South Edmonton), on the south bank of the Saskatchewan (population 1,250), and the

present northern terminus of the Calgary & Edmonton Railway, is another rising centre where good hotel accommodation, stores, creamery, flour and oatmeal mills, tannery, banks, four grain elevators, carriage, foundry and machine shops, and pump factory, are established. It has several churches and public schools.

Fort Saskatchewan, 20 miles east of Edmonton, is the headquarters for the Mounted Police in that district, and the distributing point for the Beaver Hills and Vermilion region.

St. Albert, nine miles northwest of Edmonton, is the site of the Roman Catholic Mission, where there are three stores, two hotels, blacksmith shop, etc.

Leduc, 18 miles south of Edmonton, on Leduc Lake, is the centre of one of the most prosperous and well-settled farming districts of Alberta. It has stores, churches, two grain elevators, etc., and its growth during the past two years was phenomenal.

Wetaskiwin is the busiest town between Edmonton and Calgary, and possesses some good stores, creamery, two grain elevators, hotels, and a branch of the Merchants' Bank. It is the market for the Beaver Lake and Battle River settlements.

Ponoka, between Wetaskiwin and Lacombe, is the centre of a new settlement which attracted a large number of settlers during the past year.

Lacombe is 20 miles north of Red Deer in the centre of a well-settled farming country, and is the market town for the Buffalo Lake District. It has a saw and a grist mill, grain warehouses, creamery, and a branch of the Merchants' Bank.

Red Deer, on the river of the same name, half-way between Calgary and Edmonton, is in the centre of a fine farming and stock country, there being several large ranches in the vicinity. It has a grain elevator and warehouse.

Innisfail is a prettily-situated and very prosperous town, 76 miles north of Calgary, with several stores, hotels, creamery, a grist mill, also an elevator and a large grain warehouse.

Olds is a rising town 53 miles north of Calgary. It is situated in the midst of an excellent farming and stock raising country.

CHAPTER VII.

General Information.

HOW TO REACH EDMONTON.

European emigrants should apply for information to the High Commissioner for Canada, 17, Victoria Street London, S.W., or to any Canadian Government Agent, also to agencies of the Allan, Dominion and Beaver Lines of Steamships.

Settlers from Ontario and the Eastern Provinces of the Dominion can purchase tickets from any of the Canadian Pacific Railway Stations or Ticket Agents direct to all stations on the Calgary & Edmonton Railway, and get the benefit of the settlers' immigration rates.

Settlers from the United States can purchase regular tickets to Gretna, North Portal, Lethbridge, Revelstoke, Huntington, or Vancouver, and from those points get the settlers' immigrant rate to any of the above stations.

As the rates of freight and passage may vary from time to time, the present rates are not given. Application should be made for rates to the Canadian Pacific Railway Company, who grant liberal terms.

SETTLERS' SPECIAL RATES AND PRIVILEGES.

The attention of intending settlers on the Calgary & Edmonton railway lands is drawn to the fact that they will be granted by the Canadian Pacific Railway Company, over whose line they must travel in order to reach these companies' lands, all special rates, stop-over privileges, etc., etc., granted by the Canadian Pacific Railway Company to intending settlers on their own lands.

CUSTOMS.

Under the Customs Tariff of Canada, a bona fide settler may bring into Canada, free of duty, as "Settlers' Effects," the following articles, viz.:—

Wearing apparel, household furniture, professional books, implements and tools of trade, occupation or employment, which the settler has had in actual use for at least six months before removal to Canada; musical instruments, domestic sewing machines, carts and other vehicles, and agricultural implements in use by the settler at least one year before his removal to Canada, not to include machinery or articles imported for use in any manufacturing establish-

ment, or for sale; provided that any dutiable article entered as settlers' effects may not be so entered unless brought with the settler on his first arrival, and shall not be sold or otherwise disposed of without payment of duty, until after two years' actual use in Canada.

STOCK FROM THE UNITED STATES.

Live stock, when imported into Manitoba or the Northwest Territories by bona fide intending settlers, shall be free, until otherwise ordered by the Governor General in Council, subject to the following regulations made by the Honourable Comptroller of Customs:—

Each settler is allowed one animal of neat stock or horses for each ten acres of land purchased or otherwise secured.

One sheep or swine for each acre so secured.

If horses or cattle are brought in together, one animal allowed for each ten acres so secured.

If horses, cattle, sheep and swine are brought in together, the same proportions to be observed.

The operation of the above regulation is limited to 320 acres.

The rate of duty on stock in excess of the above numbers is 20 per cent.

Edmonton Retail Prices.

GROCERIES.

Tea, per lb.,	25 cts. to 50 cts.
Coffee, per lb.,	30 cts. to 50 cts.
White sugar, 7 1-2 cts.	(15 lbs. for \$1).
Brown sugar, 6 1-4 cts.	(16 lbs. for \$1).
Oatmeal, 3 1-8 cts. to 3 3-4 cts.	
Flour, per sack,	\$2 to \$3.
Bacon, breakfast,	15 cts.
Bacon, dry salt, 11c.	Hams, 13 cts.
Lard, 40 cts. per 3-lb. tin.	
Evaporated apples,	10 cts.
Evaporated apricots,	15 cts.
Syrup, 80 cts. per gal. pail.	
Coarse salt, per bag,	90 cts (50-lb sack).
Fine salt, \$1	(50-lb. sack).
Apples, dried, 8 cts.	Currants, 10 cts.
Raisins, Valencia, 12 cts.	
Raisins, Sultans, 9 cts.	
Raisins, table layers, 20 cts.	
Tinned Vegetables—Corn, peas, tomatoes and baked beans, 12 1-2 cts. per tin.	
Candied peel (mixed), 4 lbs. for \$1.	
Jam, assorted, 7-lb. pail for \$1.	
Rice, Patna, 14 lbs. for \$1.	
Rice, Java, 13 lbs. for \$1.	

Soap, 1-lb. bars, 14 for \$1.
Baking powder, 1-lb. tin, 4 for \$1.
Starch, corn, 9 lbs. for \$1.

DRY GOODS.

Factory cotton, 5c. to 12 1-2c. per yd.
Bleached cotton, 7c. to 20c. per yd.
Cottonades, 18 cts. to 30 cts. per yd.
Flannel, 18 cts. to 45 cts. per yd.
Flannelette, 8 cts. to 20 cts. per yd.
Strong tweed, 35 cts. to \$1 per yd.
Wool socks, 12 1-2c. to 50c. per pair.
Tweed suits, men's size, \$3.50 to \$18.
Tweed suits, boys' size, \$1.75 to \$3.
Blankets, per pair, \$2 to \$10.
Strong boots, men's size, \$1.25 to \$3.
Strong boots, boys' size, 80c. to \$2.50.
Strong boots, children, 45 cts. to \$1.50.

FURNITURE.

Hardwood chairs, 55 cts. to \$1.
Hardwood rocking chairs, \$1.75.
Hardwood tables, from \$3 up.
Hardwood bedsteads, from \$4 up.

AGRICULTURAL IMPLEMENTS.

Breaking plow, \$20 to \$22.
Stubble plow, \$18, \$20, \$24.
Brush breaking, \$25 to \$32.
Iron harrow (3 section), \$15.
Wooden harrow, \$18.
Iron harrow (4 section), \$25.
Disc harrow, \$30 to \$35.
Garden rakes, 50 cts. to 75 cts.
Garden hoes, 40 cts. to 60 cts.
Hay forks, 60 cts. to 75 cts.
Manure forks, 75 cts. to \$1.
Spading forks, \$1 to \$1.25.

Mower, \$55 to \$65. Rake, \$28 to \$35.
Waggon, \$75. Press drills, \$90 to \$120.
Blinder, \$155 to \$170.
Buckboard, \$45 to \$65.
Jumper, \$8 to \$12.
Buggies, \$75 to \$1.25.
Road carts, \$25 to \$50.

HARDWARE.

Spades and shovels, \$1 to \$1.50.
Saws, cross-cut, .75 cts. to \$3.
Saws, rip, 50 cts. to \$4.
Saws, bucksaw, 65cts. to 85 cts.
Hammers, 65 cts. to \$1.25.
Chisels, 40 cts. to 75 cts.
Brace and bits, \$1. Jack plane, \$1.00.
Plane, smoothing, 75 cts.
Augers, 40 cts. to \$1.25.
Axes, 75 cts. to \$1.50.
Nails, wire, per 100 lbs., \$5 to \$6.
Nails, wrought, per 100 lbs., \$4.70 to \$5.50.
Nails, cut, per 100 lbs., \$5 to \$5.50.
Coal oil, per gallon, 50 cts. to 60 cts.
Linsed oil, raw or boiled, \$1.25.
White lead, best brands, \$2 to \$2.50 per \$25-lb. can.
Cooking stove, \$23 to \$26.50 (complete).
Box stove, \$4.50 to \$13.
Stove pipes, per length, 15 cts. each.
Coal heating stoves, \$5 to \$25.

MINERS' SUPPLIES.

Shovels, \$1. Quicksilver, \$1 per lb.
Gold pans, 75 cts. Picks, \$1.
Chamels 65 cts per skin
Sett of grizzly irons, 50 cts.

CONCLUSION.

The writer has endeavored to bring out the more important facts of value to intending settlers, and has been compelled to omit some other facts and figures which could not be crowded into the limited space of an ordinary immigration pamphlet. Throughout the book comparisons with other places in Canada have been carefully avoided, for it is thought that most of its readers will be those who by one reason or another may have been already interested in Northern Alberta and desirous of special information on it alone. The Dominion Government's general handbooks, which present such an embarrassment of riches in the necessarily less detailed information about the different provinces of Canada, fail to supply this desire for special information concerning particular localities. Hence this publication.

The previous pamphlet, published in 1897, under the auspices of the then ex-

isting Western Canada Immigration Association, involved the writer, in his capacity of local chairman of that unpaid volunteer auxiliary of the Dominion Immigration Service, in ceaseless correspondence with intending settlers, from which he derived no personal benefit nor emolument. In consequence of this previous experience, he is compelled to notify all persons, wishing further information, that he will be unable to reply to enquiries unless accompanied by a fee adequate to the value of the time and trouble involved in obtaining and supplying the information required.

All such letters of enquiry should be marked "Immigration," or "Mining," as the case may be, and addressed to

ISAAC COWIE,
Edmonton,
Alberta, Canada.

United States postage stamps are useless in Canada.

The Canadian North-West.

HOMESTEAD REGULATIONS.

Any even numbered section of Dominion Lands in Manitoba or the Northwest Territories, excepting 8 and 26, which has not been homesteaded, reserved to provide wood lots for settlers, or for other purposes, may be homesteaded upon by any person who is the sole head of a family, or any male over 18 years of age, to the extent of one quarter-section of 160 acres, more or less.

ENTRY.

Entry may be made personally at the local land office for the district in which the land to be taken is situate, or, if the homesteader desires, he may, on application to the Minister of the Interior, Ottawa, the Commissioner of Immigration, Winnipeg, or the Local Agent for the district in which the land is situate, receive authority for some one to make entry for him. A fee of \$10 is charged for the homestead entry.

HOMESTEAD DUTIES.

Under the present law homestead duties must be performed in one of the following ways, namely:—

(1) By at least six months' residence upon and cultivation of the land in each year during the term of three years.

(2) If the father (or the mother, if the father is deceased) of any person who is eligible to make a homestead entry resides upon a farm in the vicinity of the land entered for by such person as a homestead, the requirements of the law as to residence prior to obtaining patent may be satisfied by such person residing with the father or mother.

(3) If a settler has obtained a patent for his first homestead, or a certificate for the issue of such patent countersigned in the manner prescribed by the Dominion Lands Act, and has obtained en-

try for a second homestead, the requirements of this Act as to residence prior to obtaining patent may be satisfied by residence upon the first homestead.

(4) If the settler has his permanent residence upon farming land owned by him in the vicinity of his homestead, the requirements of the law as to residence may be satisfied by residence upon the said land.

APPLICATION FOR PATENT

Should be made at the end of the three years, before the Local Agent, Sub-Agent or the Homestead Inspector. Before making application for patent the settler must give six months' notice in writing to the Commissioner of Dominion Lands at Ottawa of his intention to do so.

INFORMATION.

Newly arrived immigrants will receive at the Immigration Office in Winnipeg, or at any Dominion Lands Office in Manitoba or the Northwest Territories, information as to the lands that are open for entry, and from the officers in charge, free of expense, advice and assistance in securing lands to suit them; and full information respecting the land, timber, coal and mineral laws, as well as respecting Dominion Lands in the Railway Belt in British Columbia, may be obtained upon application to the Secretary of the Department of the Interior, Ottawa; the Commissioner of Immigration, Winnipeg, Manitoba; or to any of the Dominion Lands Agents in Manitoba or the Northwest Territories.

JAMES A. SMART,

Deputy Minister of the Interior.

N.B.—In addition to Free Grant Lands, to which the Regulations above stated refer, thousands of acres of most desirable lands are available for lease or purchase from Railroad and other corporations and private firms in Western Canada.

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