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Last summer I received from the Toronto organizing committee the invitation to come out to Canada with the British Association. It is well known, but it gives me great pleasure to acknowledge it once more that the members of the British Association, whether British or foreign, received from the Canadians – and those of us who went to the States from the Americans – the most friendly welcome, and were treated with the utmost cordiality and hospitality. Many a standing friendship between scientific men of the Old and the New World has grown up during that visit. After the meeting of the British Association was over a most instructive trip was organized by the Canadian Pacific Railway Association across the continent to Vancouver, and I had the privilege of belonging to the party of geologists and geographers who went out, and stopped to visit the main points of interest, under the guidance of the best two authorities in the geology and geography of Canada. Dr. [George Mercer] Dawson, the Director of the Geological Survey, who knows that part of the Rocky Mountains and the coast ranges as his own garden, and Professor [Arthur Philemon] Coleman, who is equally well acquainted with the mining region of Central Canada, conducted our party, all possible arrangements having been made by

local committees to enable us to see the most of the country and its resources during our stops on the route

At Victoria the party broke up, and on the back journey I devoted my chief attention to agriculture and to settlers in the North-west Provinces. Here, again I met with the greatest cordiality and the greatest desire on behalf of all the local administrations – and, in fact, of everyone I came in contact with – to enable me to judge by myself of what the new lands opened for settlement are worth. "Let us give them all possible facilities to know everything by themselves, but let us be careful not to prejudice them one way or another," seems to have been the watchword all over Canada. If time had permitted me to do so, I had only to avail myself of the facilities which were offered to me for seeing every settlement and town in the Northwest and Manitoba.

Of my visits to the experimental farms of Canada in Company with Dr. [William] Saunders I have already spoken elsewhere; and when I returned to Toronto I found in my friend Professor [James] Mavor a living encyclopedia of Canadian economics. To every question which I would ask him the reply appeared at once in the shape of statistical tables and economical works taken from the shelves of a heap of historical documents, old and new. However, it is not my intention to utilize now more than a trifle of the valuable materials which were put at my disposal. I simply intended to mention some of the points which chiefly occupied my thoughts during that most instructive and delightful journey.

As I was crossing Canada from east to west, traveling in succession through the woody regions of West Quebec and East Ontario through the roots and hilly mining region situated in the north of the great lakes over the vast prairies, and finally across the highlands and the plateaus of the Pacific border, I was simply amazed at finding such a resemblance between the geographical features of these successive regions and the features, once familiar to me, which are met with the Old World in crossing it from west to east in about the same latitude. The traveler who should land in Rus-

lands which badly want the work of their hands, but to which they are not allowed to give it. If only Canada could avoid creating the same conditions! But I am afraid she also is making rapid strides towards the building up of the same land monopolies which now drive the European peasants out of Europe.

When I see, however, the tremendous and seldom realized amount of labor which the pioneer has to accomplish when he settles in a new land, be it even in the richest prairie; when I think of the fifteen to twenty years of hard work – the best part of the life of a generation – which must be given to bring a wilderness into a semi-civilized state; when I measure all the amount of labor – which is immense – that is applied to the soil in Canada, a great question rises before me: Surely it is desirable that mankind should spread all over the globe, that it should take possession of it and carry on its civilization, such as it is, to the remotest parts of the earth. This expansion has widened the circle of ideas, it has opened to thought wider horizons, it has shattered many traditions of old. But, looking on the matter from the point of view of economy – of well-being and means to attain it – would it not have been better to apply a considerable part of that energy at home? I take, as an instance, the results that a few hundred French peasants have obtained in a small village near Paris, where stone quarries were transformed into beautiful apricot-tree and cherry-tree gardens; or the marvelous utilization for beautiful orchards of every inch of land which was made along the banks of the middle Rhone; I look next upon the uncultivated, waste fields which these isles and immense spaces all over Europe are so well provided with; and I ask myself, what would be England and Scotland like to if one-tenth part only of the energy that has been spent in conquering wild lands in Canada had been given to the land of these isles? What if the Galicians whom I saw at Edmonton had been allowed to work with the same energy upon the land of Galicia? I understand the Icelander who exchanges his polar island for a settlement in Manitoba, or the Norwegian who moves from his subpolar fjord to a fjord in British Columbia. But what has driven the Mennonite from the South Russian Steppe to the Manitoba Steppe, where he sighs after the blossom and the fruit of his apple and cherry trees? What drives the Galician to Saskatchewan, the Swede to Alberta, and the Scotchman to Ontario? The social conditions alone drive them from

sia on the coast of the Baltic Sea, and proceed eastwards through Northern Middle Russia, across the hilly mining regions of the middle Urals, over the vast prairies and plains of Southern Siberia, and finally across the highlands and plateau in Eastern Siberia, would meet with exactly the same types of geographical regions, in the very same succession, as those which he meets with in crossing North America under the fiftieth degree of latitude but in the opposite direction.

In the Eastern States of America, which would correspond under this view to Western Europe – both facing the Atlantic and both representing the main seat of our present civilization – the analogy may be less apparent. But the woody tracts of Eastern Canada, which have been compared more than once to the woody tracts Northern Middle Russia, are really the counterpart of that portion of Europe. Next come the hilly, rocky, and forest-clothed mining regions which rise in Canada in North of Lake Superior, and they remind me in many respects of the Urals, which, by the way, are not the narrow worm-like chain of mountains that is traced on our small-scale maps, but represent a wide expansion of ravinated plateau of a moderate height and chains of hills, dotted with gold, copper, and iron mines. They also have in the south a great interior sea, the Caspian.

Proceeding further westward through Canada, we entered, all of a sudden at Winnipeg, on the boundless low prairies of Manitoba; and here the illusion was complete. I might as well believe myself entering the low 'black-earth' prairies of South Tobolsk at the foot of the Urals. Same general aspect, same soil, same desiccating lakes, same character of climate, same position with regard to the highlands, and, very probably, same lacustrine origin in both cases.

Further on, as the train rolled westwards, and after having gently climbed over an escarpment, crossed the higher sub-arid "rolling prairie" – we should call it Steppe in Siberia – I could easily imagine myself amid the higher level Steppes which the Siberian rail-

way enters beyond Tomsk. The altitude of these Steppes in the two continents, the escarpments which separate them from the lower terrace, the general aspect of both the surface and vegetation, all these are wonderfully similar; while the small East Siberian towns of Kainsk, Achinsk, and Krasnoyarsk could be described as sister-growths to Medicine Hat, Calgary, and Regina, were it not for the Americanized aspects of the Canadian towns. The "barren lands" in the far north of Canada, which are similar in all respects to the sub-tundras and tundras of Siberia, and the deserts of the American plateau in the south, which corresponds to the deserts of Mongolia, complete the analogy.

Finally comes the belt of parallel mountain range – the Rocky Mountains, the Selkirks, The Golden Range, and the Coast Range, with elevated plateaus lodged between them; and here again the analogy with the East Asian plateau and the parallel ranges of mountains which rise above its surface is nearly complete. The Siberian highlands are wider in the same latitude, and the stretches of high plateaus are broader than in Canada; but the similarity of the general aspect is such that, for instance, at Okanagan I really felt as if I were amid the Transbaikalian Steppes, although the American ranges – namely, the Rocky Mountains – are of a more recent origin than the mountains bordering the East Siberian plateau. Same altitude of the plateau, same dry climate, same general aspect, same surface structure, and same character of erosion in geologically-recent periods.

Fortuitous coincidences would not do to explain such a similarity of structure. It was known long since that there are certain analogies in the main outline of the two great continental masses situated in the western and eastern hemisphere. It now appears that the analogies in the sub-surface structure – in the orography – of North America is an elongated belt of highlands – plateaus and parallel mountain ranges – which runs in a north-western direction from Mexico to Alaska gradually decreasing in height and in width as it enters higher latitudes. The Rocky Mountains fringe it along its

In Canada, contrary to Ricardo's theory, all sorts of lands, of all degrees of fertility and offering all possible gradations of difficulty for culture, are occupied at the very same time. While nearly two millions of acres remain untouched by the plow in South Manitoba, where grain may be sown, in case of need, even upon the simply overturned sod of the prairie, lands requiring infinitely more labor before they may be plowed are eagerly occupied and cultivated. The thick forests of Quebec and Ontario are cleared, irrigation canals are dug in Alberta, the wood coppices of the Saskatchewan are burned and the soil plowed, and even infinite pains are taken in clearing land in British Columbia from the gigantic trees which cover it. So varied are the tastes of men and their appreciations of the natural advantages of different regions, to say nothing of chance, which plays such a part in human decisions. But agriculture, cattle-breeding and dairying are not the only natural resources of Canada. There are inexhaustible resources everywhere: in the woods for transforming trees into boards, doors, windows and houses; in the rivers and the lakes for fishing; in the mountains for mining; and so on. In every direction, more men, more intelligence, more activity are required to utilize the resources offered by nature.

But here I must pause and ask: Is Canada alone in that condition? Without leaving the American continent, can we not say the same about immense portions of the States? Of Mexico? Of South America? In the eastern hemisphere, the geographical counterpart of Canada – Siberia – stands in exactly the same position. It has the same millions of acres of unoccupied prairies; the same rivers teaming with salmon on the Pacific border; the same inexhaustible mining resources. And those who know Africa would surely say the same about the Black Continent. The fact is that, after having roamed over big countries like Canada or Siberia, we begin to realize how uninhabited our globe is up to the present date: how rich mankind could be if social obstacles did not stand everywhere in the way of utilizing the gifts of nature.

ber of years of hard pioneer work they could find well-being. I mean, of course, millions of agriculturists; because – as the British Columbia Board of Trade puts it – workmen and artisans will only be required in proportion to the development of agriculture. 'More farmers' is therefore the general outcry in Canada; and, in fact, in every province, there is no end of land which only waits for men's labor and enterprise to be covered with com-fields or orchards.

In British Columbia, in the very heart of the highlands, and along the Pacific coast, more and more settlers are wanted. Beautiful stretches of fertile arable land are enclosed between the parallel ranges of mountains, and, if each of them has some special inconveniences, it has, on the other side, its own special advantages. The rich Steppeland about Vernon and on the shores of Lake Okanagan only requires some irrigation to secure beautiful cereal and fruit crops every year, without failure, and wealthy little towns already grow in that valley. In other places, such as the Kootenay district, or the Cariboo district, in which last the climatic conditions are less favorable than at Vernon, there is a continuous demand for all sorts of farm produce in the miners' camps. In the valley of the Fraser River, where the land must be cleared at a considerable expense from under the virgin forest, all sorts of fruit are grown so well, up to an altitude of 1,000 feet on the southern hill-slopes (at the Agassiz experimental farm), that half-cleared land fetches European prices – 15l. and 20l. per acre. Even along the sea-coast, whereto a Norwegian and a Danish colony immigrated last year, there are plenty of spots where agricultural settlements of several thousand men could easily become prosperous.

On the other side of the great plain, in West Ontario, there is again plenty of land which, after having been cleared from under the forest, could give prosperity. Behind the rocky, glaciated granite and gneiss hillocks which are seen as the train moves along the shores of Lake Superior, there are lots of spots and areas where farming is possible and is in great demand for supplying the needs of the mining population. And so on.

eastern border; and at the foot of these mountains stretches an immense continental plain, divided into two, or rather three, distinct terraces, which fills up the angular space between the great plateau and the Appalachian system of parallel chains.

The same structure is found in Asia. Only Asia and America are, so to say, the positive and the negative of each other – the right hand and the left hand. In Asia, too a huge upheaval, made up of plateaus and highlands, diminishing in height and width as it enters higher altitudes, stretches from the Himalayas to the Chukchi peninsula – to meet by its narrow end the narrow end of the American plateau. The backbone of Asia occupies, however, the eastern portion of the continent instead of the western portion, and it runs north-eastwards instead of north-westwards. A girdle of high mountains, intersected by gigantic trenches (Tian Shan, Altai Sayan, & etc.), fringes the plateau along its continental border, thus corresponding to the Rocky Mountains; and an immense continental plain, also disposed in two or three distinct terraces, occupies the wide angular space between the great plateau and another succession of highlands which run through Persia, Caucasia, Asia Minor and the Balkan peninsula. The main lines of orographic structure are thus remarkably analogous. Regions of similar structure succeed each other in the same order, but in an opposite sense.

One difference must, however, be noted. In America, the highlands reach directly the coasts of the Pacific Ocean: there are no plains between the plateau and the coast; while in Asia we have in the Amur region and Manchuria, a wide expansion of plains and lowlands (intersected by several parallel chains of mountains) which spreads between the outer border of plateau and the coast of the Pacific. It is only in a higher latitude, on the coast of the Sea of Okhotsk, that the plateau faces directly the great ocean of Vancouver. The mountain-building activity to which both the rows of islands bordering the Pacific coast of America and the coast ranges in Asia are due must have been greater in middle Asia, or it began at an earlier date, so as to add to the Asiatic continent the

plains and the very lowlands of the lower Sungari and the lower Amur, a counterpart of which we do not find in America. It must be remembered, however, that perfect similarity is never found in Nature. Analogies are all that we may expect to discover.

The Pacific Ocean thus appears encircles on both sides by two huge masses of plateaus, which assume in their outlines, and in the disposition of their outward slopes, very much the same character. The growth of these two very old continents proceeded chiefly on the outward slopes, so as to produce repetition, in the same order, of the same geographical features. We must consequently infer that our globe is not an incoherent mass of plateaus, mountains, and plains, patched together in a haphazard way. Some force, quite general in its character, and consequently telluric, if not cosmic – a force which acted at an angle to the present axis of rotation of earth – has directed the growth of the mainland masses in the old and new world. For ages it has acted symmetrically on both sides of the two chief plateaus of the globe; and through all vicissitudes of local contractions upheavals, and depressions, it has resulted in producing a remarkably symmetric structure on the two sides of the abysses of the Pacific Ocean.

What a variety of landscapes, and what a number of distinct geographical regions are embodied in Canada, is already evident from what has just been said. The maritime provinces of the Atlantic border; the woody regions of the St. Lawrence river, with their extremely interesting French population, which maintains its language and national features amid quite different surroundings; the settled and cultivated hills and plains of Ontario, with their thoroughly British population, and the Ontario peninsula which penetrates between the lakes Huron and Erie as far south as the latitude of Rome, and supplies Canada with southern fruit; the mining region of the Laurentian plateau in west Ontario; the boundless prairies, with their Indian population, slowly dying out as a mute reproach to our present civilization; the plateau and the coast ranges, with their infinite variety of valleys and canyons, ragged

North-west in high esteem as farmers, add to their praises of the country that a small capital of 100l. clear to start with' is necessary. Many Little Russians, who never saw such a lot of money in their life, will certainly start with very much less than that: a hut, a Russian stove of beaten clay, a Galician plow, and a pair of oxen, and perhaps a horse which they will have broken themselves (they are admired in Canada for that art), will be all their capital; and many of them will succeed. But this cannot be taken as a rule. In addition to the traveling expenses, which are considerable, some money, which represents a lot for the European peasant, is the more necessary as there is little chance to earn much in the winter, while in the summer the settler has his hands full with his own work.

This necessity of having some money for the start, coupled with a fear of the cold Canadian winter, must have been the chief reason why the colonization of the North-west was so slow – so much slower, at any rate, than was expected twenty years ago. The climate of Canada is certainly very healthy – a dry cold winter, with plenty of snow, being evidently preferable to the cold and moist winter of, let us say, Scotland. Russians would find it most enjoyable, the more so as the autumn lasts longer and is more beautiful than in Middle Russia. But men who were not born in Eastern or Northern Europe prefer a warmer climate, and the prospect of being buried in snow and of keeping their cattle indoors for four months, deters them; while on the other side the East European peasants who are accustomed to long winters are too poor, as a rule, to pay the expenses of a long journey and to save something to start with. It seems, therefore, that unless some system of aid to immigrants be organized, the current of emigration from Europe will continue to flow towards more congenial latitudes.

The dominant impression which Canada has left upon the members of the British Association is certainly one of vastness, of immensity, of unfathomable resources. Millions and millions of men could find their living in all parts of the country, and after a num-

draw as soon as the farmers had been initiated in the management of the factory. This plan having admirably succeeded in Prince Edward Island, Professor Robertson and the Dairymen's Association of the North-west were busy last year in introducing the same system in Alberta, both for cheese-making and the fabrication of butter. I have visited one of their creameries on the Calgary-Edmonton Railway at Innisfail, and from what I saw of the machinery, the cold-storage room, and the keen intelligence of the young operator, I have no doubt that Canadian creamery butter will soon win a good reputation in Europe. It has already a good sale in British Columbia, and last year part of it was sold for export to Britain, at a price which made the farmers quite sanguine as regards the future.

Last summer, several thousands of immigrants, chiefly German-speaking Austrians and partly Little Russians (Ruthenes), came again from Galicia, and they were directed in the eastern part of the fertile belt along the new Dauphin line. Many, if not most of them, had no money to start with, and worked on the railway line, earning from 3s. 5d. to 4s. a day (7 & 1/2 d. more if they provided their own food), and those who had succeeded in saving sixty or seventy dollars hastened to take a "quarter-section." Their wives were building in the meantime sod huts or cabins to spend the winter. With the little they had they did not hesitate to start as farmers; but the unanimous consensus of opinion is that every settler's family ought to have at least 100l. or more to start with. The 'farmers' testimonies' which are given in emigration pamphlets, and in which some farmers describe how, having begun with next to nothing, they became more or less prosperous, are undoubtedly genuine. But the emigration agencies themselves state the case quite fairly in one of their pamphlets (*Farming and Ranching in Western Canada*.) "The country," they write, "affords a vast field for experienced farmers who can bring money with them to make the first improvements on the land, to provide themselves with stock and implements, and to carry their families through the first year." The Swedes, who thrive very well at Wetaskiwin, and are held in the

peaks and elevated plateau – such are, then, the main geographical divisions of that immense country which covers nearly one-half of the North-American continent. And then come: the great peninsula of Labrador – the Scandinavia of America: the "barren lands" of the far north, the fur emporium of the North-West; and the Yukon district, which now spreads the gold fever in both hemispheres. Each of them is a world in itself; each has its history, full of dramatic events; each offers certain peculiarities in the character of its population, which are apparent even on a cursory inspection. Each of them is full of interest. However, of all these regions one interested me more than the others, and to it I will devote the following pages. I mean Manitoba and the North-West Territories. It is quite young yet: twenty seven years ago it was almost unknown to geographers. It is full of potentialities, and, for me at least, there was a certain charm in studying a part of the world where men can still find a relatively free soil.

Our train had left Winnipeg, "the capital of the prairies," in the afternoon. We had dashed for an hour, full speed in electrical trams, along the streets of the big and decidedly nice-looking prairie city, which had grown with American rapidity in less than twenty-five years. Then we parted with our friends; the engine-bell began to ring as the train rolled heavily in the limits of the city, and all of a sudden we had entered the prairies. A straight line on the horizon, another straight line behind us, marked by the railway metals, which run over a ground so level that the last elevator of Winnipeg could be seen miles behind. A "fat black-earth," as our peasants would say, and no trees or shrubs for miles round. Only a glorious sunset to admire, such as I had not seen since I was last in a South Russian steppe. 'How monotonous!' was soon remarked by my Western European friends, while I thought to myself: "What an infinite variety of life in these Steppes!" The poetry of the Steppe is an unknown chapter to the West European, even to the middle Russian. It would be vainly sought for in most geographical works; one finds it only in the poetry of Koltsoff, in the novels of Oertel, in

the soul of the man who was born in the Steppes. One must have lived in the Steppes, rambled over them on horseback about and after sunset, inhaled the perfume of the mowed grasses, spent the night in the open air, crossed the boundless spaces in sledges with galloping horses, to realize and to feel the beauty of the Steppes. He who was born in such surroundings feels homesick elsewhere; mountain valleys oppress him, make him feel as a bird in a cage

We passed Brandon at night, seeing nothing of the busy villages of that populated district of Manitoba, and next morning we were already in the so-called sub-arid region. A few big farms belonging to big companies, a few small farms lost amid the boundless rolling prairies, and insignificant market-towns, or administrative centers, such as Regina, was all that we saw from the train till we came, after a run of nearly 800 miles, to Calgary, in sight of the Rocky Mountains. Where was, then, the population of the prairies, of which we had heard so much?

The fact is that although Manitoba and North-west Territories are often as a whole, containing so many hundred millions of acres fit for agriculture, the great continental plain covered by these provinces is not uniform at all. It consists of at least three distinct regions, which must be strictly separated in the very interests of colonization. Dr. G. Dawsom indicates their limits with his habitual lucidity. The most fertile and easiest cultivable part of the great plain is its lowest, south-eastern portion, i.e. the valley of the Red River. It runs from the United States border (North Dakota) to the lakes Manitoba and Winnipeg, and represents the bottom of a glacial or post-glacial lake, now desiccated, to which American geologists gave the name of 'Lake Agassiz.' It is only eight hundred feet above the sea. Marshes and swamps fringe the shores of the two just-named lakes, but in its southern parts the Red River valley contains nearly 7,000 square miles of most fertile wheat lands, where the main bulk of the population of Manitoba is now settled. The main line only touches this populated belt at Brandon.

ports of butter Canada figures for the 1/81st part, and only to the imports of live animals, which are not very great, she contributes 1/5th part. That it will take some time before Canada becomes a grain provider of importance for Great Britain is self-evident. The average wheat crop of Canada for the years 1891-96, as given in the Official Handbook of Canada, was 51,300,000 bushels, while the population, which attains nearly five millions, requires for its own food (at the usual ratio of 8 1/2 bushels per head of population) more than 40,000,000 bushels. The disposable surplus would thus cover but a very small portion of the average 141,600,000 bushels of wheat which are imported into this country (average for the years 1895 and 1896). Out of the nearly 17,000,000 British who live on imported wheat, Canada could provide less than 2,000,000. That will surely change in time; but during the last fifteen years the increase of the total wheat crop of Canada was very slow; and what was gained in Manitoba was lost to some extent in Ontario – the Ontario farmers having been unable to compete in wheat-growing with Manitoba.

Quite the reverse is seen for cheese. Thirty years ago cheese was imported into Canada, but now Canada supplies nearly three-fourths of all cheese that is imported into this country; and the result is entirely due to the rapid extension which co-operative cheese factories have lately taken in Canada. There are 800 such institutions in Ontario alone, and 97 per cent, of all the cheese that is made in the Dominion is fabricated in co-operative cheese factories. Butter, on the contrary, is chiefly made in the farmers' houses (only 3 per cent. of it is prepared in co-operative creameries), and this is why it is slow in finding a market in Europe.

The manifest success of the co-operative cheese factories in Ontario induced the Canadian Government to take the initiative of introducing them in other provinces of the Dominion as well, and a very reasonable plan was hit upon by Professor [James Wilson] Robertson – the plan of taking the initiative of a cheese factory, and to operate it for a few years by a Government agent, but to with-

illness?" "We are never ill," I got at once the reply; "and we women help each other: I have helped many since we are here." Happily, the climate is really very healthy, and, the settlers being scattered, there is not much danger from contagious disease. Otherwise, they would be ruined if they had to call the doctor. The fee is, I was told, one dollar for each mile up and down. Such fees are the best reply to the doubts which I heard expressed at Toronto – whether there is not too much University education in Canada? Too many lawyers, I gladly admit, but surely not too many doctors; and plenty of room for widening the education of the teachers, especially in natural sciences and hygiene. I must add, however, that the little town of Edmonton is provided with a good hospital.

It is evident that in the Edmonton region wheat growing is not the main resource. The farmers rely chiefly upon 'mixed farming' – that is dairy produce, poultry, stock-raising, honey, and so on – everything, in short, that can be grown or produced on the farm. If fruit-growing were possible, they would grow plenty of fruit; but no apples, pears, or cherries can be grown in either Manitoba or the North-west Provinces, and all attempts to create a variety of apple or cherry trees which would be capable of resisting the cold nights of the early spring have hitherto failed. On this virgin soil the yield of wheat per acre is superior to what it is in Manitoba; but the early frosts are a standing menace, and the distance and the railway freights must also be taken into account. Dairying consequently acquires a great importance, and the co-operative dairies which are being established in the district will prove most beneficial for its development.

Co-operative dairying in Canada offers so much interest that I must stop to say a few words about it. Canada is sometimes spoken of in this country as a granary and a meat store of Britain; but such a statement is quite misleading. Of the immense quantities of wheat and flour that are imported into this country, Canada supplies less than 1/30th part; and 1/25th part only of the dressed meat that reaches these shores is of Canadian origin. In the im-

An escarpment which is known as the Pembina, Riding, Duck and Pasqua Hills, borders the low plains on the west and separates them from the second, higher terrace, which has on the average an altitude of 1,600 feet. Between the frontier of Canada, which is here the forty-ninth degree of latitude, and the fifty-fourth degree, which may be taken as the northern limit of profitable agriculture, this second terrace covers nearly 105,000 square miles – almost the size of the United Kingdom. Over considerable areas it is certainly excellent for agriculture, especially towards the east; but its surface, its soil, and its underground water offer a great diversity, and the farmer who settles here may as well be on the road to prosperity as on the road to total ruin – all depends upon the precise spot he has chosen. Want of rain is the chief drawback. At Regina, for instance, the average annual rainfall (rain and snow together) during the last eleven years was only 8 1/2 inches; and there were years (1885, 1886, and 1887) when the precipitation was only 4 9/10, 1 9/10, and 2 4/10 inches during each twelve months. In these conditions grain growing is quite impossible without irrigation, and, owing to the character of the rivers, no irrigation can be made unless such a big work as the projected diversion of waters of the Saskatchewan towards the south is accomplished. Cattle-breeding is the only resource in the meantime, and even this is not possible everywhere.

Another escarpment, the Missouri Côteau, separates the second terrace of the great plain from the third terrace, which spreads westwards as far as the foothills of the Rocky Mountains, and attains an average altitude of about 3,000 feet. These plains, which are nearly as wide as the two others taken together, and cover nearly 134,000 square miles between the forty-ninth and the fifty-fourth degrees of latitude, mostly belong again their own character. In South Alberta they are too much under the influence of the American desert to allow agriculture without irrigation. But the soil is a fertile loam, covered with most nourishing grasses, which (as in Transbaikalia) are not scorched by the summer heat, but maintain

their nourishing properties, while the snowfall is so small that cattle and horses can be left grazing in a semi-wild state all the winter through, small provisions of hay being only made to be used in case of emergency. Great facilities are offered here to the ranchmen for renting large areas of Dominion lands, and big ranches spread in this part of the territory, the live-stock being either exported as cattle, or killed on the spot and exported as meat, which reaches these isles in a good state, owing to a perfect system of cold storage that has been worked out in America

Moreover, in the western parts of that terrace there are plenty of streams, running from the mountains which can be easily utilized for irrigation. Many farmers construct ditches for their own use and irrigate their own fields – the Mormons, whose colony is settled near Macleod, taking the lead in that direction. Nearly 120,000 acres were irrigated in this way in 1897 with full success, and excellent crops were grown. Two companies are also engaged in the construction of waterworks for the same purpose, but on a larger scale, at Calgary.

As to Northern Alberta, the park-like and small-woods regions on the Saskatchewan offer so many advantages for mixed farming that the main stream of settlers is now directed that way; but of these settlers more will be said presently.

At the present time the differences of character of the three terraces of the great plain are well known, and they are very fairly stated in the recent official publications. But in 1883, when this portion of the North-west territories was first opened to settlers by the construction of the Canadian Pacific Railway, a number of immigrants were misled by the amount of water which they found in the small lakes and swamps after the exceptionally high rainfall of the preceding year. They settled around Regina and Moose Jaw and in the valley of the Qu'Appelle river. The summer of 1884 was exceptionally wet; the crops were very good, and more settlers were attracted, while first comers began to grow grain on a large scale. But then came the dry seasons, when rain and snow sup-

land is settled, there will be no early frosts" – a remark which I have often heard, and seen confirmed, in Siberia.

There is not the slightest doubt that the settlers like this district. As I spoke to them in their mother tongue, they asked me to write home and to bring more people to this place: "We want more people here." It must also be said that these Galician peasants, whose wives and daughters, delicate though they may look, work like men, have accomplished wonders in their new abodes. Seeing what a family consisting of one man, his wife, and four children, all born on this homestead and the youngest only three weeks old – seeing what even such a family could make in five years out of a virgin spot, one realizes what man is capable to achieve when no rent or tax collector is upon him to take the best fruit of his labor. After having worked all their life to no account, they are happy to name that homestead and its little cabin their own, and to know that after each good crop their livestock is increasing and some new machinery is bought (they do it mostly in small groups of four or five farmers). "Look at these carrots," "Look at these beautiful potatoes," they say with pride. "Everything grows well here, and the early frosts will go when the country is settled." But "gents" have nothing to do in this region. Only such hard workers as these Galicians, French-Canadians, Little Russians, or Swedes are can succeed. Fertile as the soil is, it must be cleared from some forest growth before it is tilled; the first winter must often be passed in a sod hut; the house, the shed, the barn, have to be built out of wood that has been cut with their own hands, because timber, even though it is cheap enough, would have to be bought; the threshing engine has to be carried along a primitive road, or across some swampy brook; and every sack of wheat must be carted fifteen, twenty, and thirty miles to Edmonton, because in the neighborhood of the town land is already in the hands of land speculators.

"Don't you feel lonely here?" I asked a stout elderly woman who showed me her butter and her excellent rye-bread, which I could better appreciate than my Canadian friend. "No." "But in case of

tween Calgary and Edmonton, the prairie changes its aspect: the soil becomes more productive and patches of meadows appear in the depressions. The country becomes more populated, more farms are seen at a distance, and the train passes by several busy small towns. On the banks of the Saskatchewan begins a belt of very fertile soil, covered with small aspen and birch woods, which have grown within the last fifteen years, after the virgin forest had been burned.

Edmonton is in the heart of that region, on the picturesque banks of the gold-bearing Saskatchewan. I found it a lively little town of 1,300 inhabitants, which has grown entirely within the last fourteen years. It was formerly a Hudson Bay Company fort, and is still an emporium for trade in raw furs, but it has taken the aspect of a town provided with hotels, 'stores,' and schools. In Canada, a good school, erected by the municipality and supported by the Federal Government, which contributes about three-fourths of the teaching expenses (out of the revenue from the school lands), is a conspicuous feature of every little settlement. Round this little town are scattered a considerable number of farmers, whose ranks are continually increased by new-comers of various nationalities – Canadians, German-speaking Austrians from Galicia, Germans, Swedes (in the south of Edmonton), and so on. Some of them came from Ontario; others from French Canada, and these can be recognized at once by their preference for the clearing of woody districts; others from various parts of Europe. The Austrians whom I saw and spoke to had been previously settled on the main line, near Medicine Hat, and there they were quite miserable. "Nothing would grow there: it was too dry." After two years of fruitless struggles against drought, they migrated hither, with the aid of the Government, and now they are never tired to speak of the advantages of their new abodes, scattered amid the small woods. "Was not your wheat frozen this year?" "Yes, some of it freezes sometimes," but they hastened to add: "That will not last; as soon as the

plied only from two to five inches of water in twelve months, and the crops were lost for three years in succession. Most of the settlers consequently removed northwards to better grounds, while fresh lines leading to Edmonton, Prince Albert, Yorkton, and Lake Dauphin. As to the lands along the main line between Indian Heads and Calgary, they remain nearly waste up to the present date.

That South-eastern Manitoba is admirably well suited for wheat-growing, and that Manitoba wheat is one of the best in the world, has been fully proved by experience. Every year no less than one million acres are sown with wheat, and half as much with oats and barley. From fifteen to seventeen million bushels of wheat – the annual bread-food of two million people – are thus grown in Manitoba. Four lines of railways run parallel, at short distances from each other, through South Manitoba, and each of these lines, dotted with elevators, is busy in exporting the wheat crop during the autumn and winter; while from three to four thousand men have to be brought every summer to Manitoba to aid the farmers with their crop. It is also worthy of remark that this quality of cereals is not grown on mammoth farms, but by no less than 27,000 farmers, whose farms cover on average no more than two quarter sections, that is 320 acres.

The 'fabulous fertility' of the prairies, which is so often mentioned in this country in connection with American competition, is also no more than a myth. The prairies of Manitoba, like those of the States, give but modest crop of from 14 to 17 bushels to the acre; only occasionally the yield may be nearly doubled, as was the case in 1895, when the average was 27-29 bushels per acre, and the wheat crop alone attained 32,000,000 bushels. The light consistence of the prairie loam permits the farmer to plow and to sow wide areas, and the crop is cut and threshed with the aid of special machinery, rented or bought co-operatively by the farmers, while the thinness of population gives the possibility of leaving a considerable portion of the fields under summer fallow – the first condition of a good crop in Manitoba. It is also worthy of note that, although the

hundreds of square miles of wheat-fields which one sees in Manitoba, and nearly three times as much of all cereals taken together, to say nothing of the large root crops which make of Ontario the chief dairy province of Canada.

Of course the wheat-growing capacity of Manitoba is far very far yet from being exhausted. It is estimated that less than one-fourth part only of cultivable area in the Red River valley has been brought under culture (550,000 acres out of 2,800,000). But no free homesteads can be had in this region except on its eastern and northern outskirts, and new settlers have to buy the land at from 16s. to 24s. the acre. Land-grabbing, that curse of the United States, has not been avoided in Canada either.

When I traveled over this stretch of the prairies last autumn, the crop was already in, and the threshing began. All the day long streaks of smoke from the threshing engine could be seen in all directions; and when night came immense fires began to rise on all points of the compass. It was straw that was burnt on the spot after threshing was done. Everywhere farmers were carrying their heavy cartloads of wheat to the elevators, and the prices being high (up to 80 cents, i.e. 3s. 4d., per bushel), the population was in high spirits: the debts could be paid, and perhaps some more land could be bought for the rapidly growing young generation.

A number of different nationalities have settled side by side in Manitoba. There is a large Scotch colony at Deloraine; there are Germans, Galicians, Icelanders, and Russians; and there is a considerable number of Mennonites, originally Dutch, who came to Canada from South-east Russia in 1874-78, when obligatory military service was enforced upon them. Their main villages are in the south-eastern corner of Manitoba, about Gretna, but isolated groups are found all over the wheat belt, as far as Napinka.

Mennonites prosper everywhere. They were prosperous in Russia, and they prosper in Canada. If they are compelled to emigrate, they send first their delegates, who select the best spots – so they did in Manitoba; and they emigrate in whole villages. They settled

not prevent the settlers from keeping together in distinct groups, whose national cohesion may last more or less, but surely is not affected by the unoccupied square miles. The less so as the Canadian Government very wisely lets school-teaching to be made in the mother language of the settlers.

As to the inconveniences of this system, they are many. The settlers are too scattered to be of effective use to each other; and in all those cases where combined effort is required, for building elevators or providing cold storage and creameries, as well as for the common ownership of male breeding stock and agricultural machinery, they are under a distinct disadvantage. In woody regions, the unoccupied square mile which intervenes in all directions, and remains under the forest, is decidedly a hindrance. All distances to the market or the mill are doubled; the children have often to walk full four or five miles to the school; and the settlers naturally grumble as they see that the sale price of the 'C.P.R.' or Hudson Bay squares grows in proportion as they work to render the country habitable. As for those regions where irrigation is necessary, the isolated homesteads are entirely unsuited to such conditions, the best results of colonization with irrigation having been obtained under the village system, which has worked quite successfully in Colorado, Utah, Idaho, and California, as well as in Australia. Altogether, the isolated homestead begins to be considered in Canada as a mistake, and it begins to be recognized that the village system, with plenty of free space between the villages, would have been preferable.

The main bulk of the settlers who come to the North-west Territories have lately been directed to the fertile belt of park-like lands which stretches from South-east Manitoba towards Lake Dauphin, and thence westwards, up the valley of the Saskatchewan to Edmonton. Free homesteads are offered there, and settlers of different nationalities hasten to take possession of them. Four branch railways connect the main line with this fertile belt, which I visited at its western extremity, at Edmonton. Already, half-way be-

said in Canada – got the required amount of land in the fertile belt, where it sells it already at from 12s. to 16s. the acre, up to 24s. in Manitoba. However, these lands were not given to the company in a block; they were distributed, on the contrary, all over the fertile belt, in every township. The thirty-six squares of the township are numbered from 1 to 36. All even numbered squares (except Nos. 8 and 26) belong to the State, and are offered in quarter-sections as free homesteads, while all odd squares (except Nos. 11 and 29) belong to the C.P.R. The squares 8 and 26 are the property of the Hudson Bay Company, while the squares 11 and 29 are reserved by the State for school grants. In other words, taking a chess-board for comparison, all white squares, with the exception of two, belong to the Government, and can be homesteaded (by four families each), while all black squares, with the exception of two, and two white ones, belong to railway and trade companies. If a group of sixty-four families intend to take free homesteads in one township, they must settle in sixteen groups of four families, each group being separated from the next by one square mile of land, which will remain unoccupied so long as it has not been sold. There never will be a hamlet. All the roads run, of course, along the boundaries of the square – never along diagonals.

Wherever I went in the North-west Provinces, I found this system very much discussed and sharply criticized. It offers, of course, certain advantages, one of which is the simplicity of surveying. Besides, under the prevailing conditions of farming, the quarter-section of 160 acres, being too small, as a rule, for a farm, the farmer has the possibility of grazing his cattle on the unoccupied lands; and if he is prosperous enough, he may buy one more quarter-section. As to the argument which may be heard in the towns, namely, that it was desirable to scatter the settlers, in order that they should be more rapidly assimilated by Canada, it is simply illusive. The American civilization very rapidly absorbs all national elements, in Canada as well as in the States; while, on the other side, experience proves that the square miles of unoccupied land do

in Canada on the distinct understanding that they should receive the land in a block, and be left entirely to themselves; otherwise, they would have gone to the States, to South America, or even to Greenland, to join the Moravian Brothers. They settled in villages, and in these villages they maintain the institutions of mutual support and peace, which they consider to be the essence of Christian religion – a practice for which they have been persecuted for three centuries in succession by Christian Churches and States.

On approaching a Mennonite village, one is at once transported to Russia. After some stay in Russia, the Mennonites adopted the institutions of the Russian village community, slightly modified, and they have transported them to Canada. Their villages consist of broad streets, bordered by houses, each of which is surrounded by young trees. Behind each house is a plot of manured land given to a sunflower plantation (it is usually given to hemp in Central Russia). Then the village has a large common, well fenced, to keep the cattle; and beyond the fence lie the fields, divided into strips allotted to each family in proportion to its working capacities. The community's cattle is kept on the common, or on the common meadow or on fallow land, under the watch of the communal shepherd. It was the same – one knows – in many parts of England, Scotland, and Ireland, at the end of the last century and partly at the beginning of the present century: the balks which used to mark the strips are still visible in several parts of this country.

The unanimous testimony of all Canadians is that the Mennonites are the wealthiest settlers in the neighborhood. Their houses are spacious, and have an air of homeliness which is often missing in other hamlets; there are more trees in their villages than in all the surrounding prairie, and these plantations protect the houses and the yards from the snowdrifts; and there are no signs of poverty, although the Mennonite population has multiplied in twenty years out of every reasonable proportion. They proceeded as they proceeded in Russia – namely, a special communal fund is reserved for buying more land, when need is felt.

The Mennonites, as is known, refuse to take part in any functions of the State, and especially in military service. Tolstoi's name is, consequently, a subject of deep reverence among them. They also never have anything to do with justice or law. On the other side, they receive no subsidy from the State, and themselves keep their schools. They never pay their preachers, and live under what will be described as an illusion – that if a farmer has the gift to move the hearts of his hearers he may do it, and perform the preacher's duties without being paid for it. With all that, they are not Communists; they recognize private ownership, and those of them who take to trade make fortunes. They have communal mills, but have not yet come to the idea that they might keep communal stores as well.

It is extremely interesting to see these communities holding their own, surrounded as they are by a very different civilization. It must be owned that one-third of the Mennonites have left the communities, and carry on farming entirely for themselves. But it must also be said that this desertion is due chiefly to moral causes rather than to economical considerations. True that the temptation of buying a "quarter section" of land and becoming a land owner, by means of ten yearly payments of 151. or 201. each, is for something in it; but the chief motive, I was told on all sides, is to get free from the control of the 'elders,' which grows only the more oppressive when the community has to live amid uncongenial surroundings. To take one instance only – education. All teachings of modern civilization being a glorification of unbridled egotism, the 'elders' cling only the more to the Bible as the sole foundation of all education, on account of the descriptions of communist life which they find in it. They look with suspicion upon all scientific education. Thus, I visited at Gretna a school for teachers which is conducted by Mr. Ewart. Its teachings are not opposed to the religious feelings of the Mennonites – far from that. And yet the school is bitterly opposed by the 'elders,' and is, supported by a minority only of the young ones. Altogether, the authority of the 'elders' is

nearly absolute, and, as always happens in religious communities, it is less directed towards the maintenance of the economical and social bases of life which have proved to be successful, or to a reasoned analysis of these fundamental principles, than to the maintenance of those traditional beliefs which are supposed to be the only possible sanction of the semi-communistic forms of life. Still, it is a remarkable fact that amid that capitalist civilization some twenty thousand men should continue to live, and to thrive, under a system of partial communism and passive resistance to the State which they have maintained for more than three hundred years against all persecutions.

A much-discussed question of great importance for the future development of Canada may be mentioned in this place. I mean the village or hamlet systems of settlement versus the American homestead system. This last was adopted in Western Canada. The lands which are offered, either as free homesteads or for sale, are surveyed in townships, each of which is a square, six miles in length and width, its sides running north to south and west to east. The township is divided in its turn, like a chess-board, into thirty-six squares or "sections," one square mile each; and each 'section' is divided into four squares, each of which contains 160 acres. This is what is known as a "quarter-section," and what the bona fide settler is entitled to obtain free (on payment of a registration fee of 21.) in those parts of the territory where free homesteads are still offered to immigrants.

Such a system would not prevent, after all, a number of settlers from taking a whole township, or half of it, and from settling in a village, but the distribution of the lands conceded to the Canadian Pacific Railway and to the Hudson Bay Company in each township destroys that possibility. Large grants of land were given, as is known, by the State to the Canadian Pacific Railway – namely, ten square miles of land for each mile of railway that was built; but as the main line passed through a large belt of sub-arid prairie and mountain tracts, the railway company – or 'the C.P.R.,' as is usually