M.A. Thesis, 1918.

The extension of co-operative principles to agriculture in western Canada.

T. C. Jerrom

THE EXTENSION OF CO-OPERATIVE PRINCIPLES TO AGRICULTURE IN WESTERN CANADA.

If the great struggle in which the nations of the world are now involved has brought home one lesson with greater force and reality than another, it must surely be that the neglect hitherto accorded to the agricultural position and question of food supplies within the Empire, must be held, in part at least, accountable for the development of a condition fraught with grave danger, not only to the general life of the people, but also to the industrial and commercial situation, upon which the welfare of the nation finally rests.

And while this may be true more particularly of the attitude towards agriculture in the Motherland, its effects are nevertheless clearly discernible in the Dominions and Colonies of the Empire, and although in the latter case artificially created war prices may to some extent revive and stimulate interest and enterprise in agricultural pursuits, such inflation is at best only temporary in its effects and may even, if care be not taken to guard against it, prove harmful to the cause. It is then rather to the establishment of the industry on an economically sound and prosperous basis that attention should be directed.

Quite apart from the question whether the possibilities of the war may or may not have definitely re-entered our scheme of existence, there can be no doubt whatever, that

the problem of re-absorption into civil life of large numbers of men who have answered the Call of 'King and Country' will demand for its solution a sound and vigorous policy, having as its immediate object the development of the natural resources of the Empire on a more widely extended scale than hitherto.

Some idea of the extent to which Great Britain is dependent upon a large volume of imports may be gained from the following summary showing the value, in pounds sterling, of the total Imports of Food, Raw Material and Manufactured Articles into the country from all sources and those from within the Empire alone.

	Total Imports	From British Dominions & Colonies
Food and Tobacco	£ 290 Millions	£ 76 Millions
Raw Materials	252 "	92 "
Manufactured Articles	194 "	23 "

(Statistical Abstract for 1913).

From this it will be seen that of a total value of imports amounting to £ 766 Millions, only £ 191 millions or rather less than 25 percent. come from within the Empire itself.

Further, when we turn to consideration of food imports alone, we find that Great Britain prior to the War

was importing, roughly one half of the total food consumed in the country.

A comparison of the quantities and values of the more important articles of food imported for the years 1913 and 1915, i.e., for the year immediately preceding and that directly following the outbreak of the war, reveals the fact that the quantity imported fell in 1915 by 22 million cwts., a decrease of 9 per cent, while the value rose from £ 290 millions in 1913 to £ 382 millions in 1915, an increase of 32 per cent in cost for a smaller quantity of food. (V. Accounts relating to Trade and Navigation, December 1915.)

This will serve to illustrate briefly the enormous extra cost of food in war time, and since a great part of these imports are from countries not within the Empire, in consequence of the fall in the Exchange to which it is partly due, the enhanced cost represents an actual drain on the financial resources of the Empire.

There is the further consideration that disbursements for food, all of which could and should be produced within the Empire, differ essentially from the money spent on raw material for manufacturing purposes, since much of this material is re-exported again in the form of finished products.

The fact that it may be cheaper for a nation in Great Britain's position to buy its food in the open market, and pay for it with manufactures, only calls attention to the existence of a demand which the Western Provinces of

Canada, with their immense agricultural resources, are peculiarly fitted to fill.

If we now turn to the social side of the question, we note a strong tendency on the part of rural populations to migrate towards the towns. A man's occupation tends to have an effect on his character, and the growth of a population dependent entirely upon manufactures, is carefully to be guarded against, leading as it does to seasonal and cyclical fluctuations of employment with all the evils attendant thereon. The problem of adjusting the future occupations of our returned soldiers is beset with manifold difficulties and will need for its solution statesmanship of the highest order.

There can be little doubt, however, that among the methods of meeting the problem, that will receive consideration, that of settlement on the land will occupy a prominent place; and of the various proposals that have been tentatively put forward, those looking to the development in one form or another of co-operative principles in agriculture seem likely to claim considerable attention.

Hitherto the application of the principles of co-operation in agriculture has been limited in scope and character, being very largely limited to organized effort in the handling of dairy produce, in the making of butter and cheese, the purchase of farmers' requisites and the sale of his produce, and so far as it has made progress in the British Isles has been

considered specially applicable to small holdings. Considerable progress along co-operative lines has been made in Italy, Germany, France, Denmark and Ireland, and the movement would appear capable of great extension, it may well be of embracing many, if not all of the activities of farming, including work in the field itself.

In its more elementary form co-operation crops up in all productions, and is a Sine Qua Non of all production on a large scale.

The pyramids of Egypt, the walls and hanging gardens of ancient Babylon, the immense irrigation schemes of the Egyptians and Assyrians, the Cloaca Maxima of Rome, are all illustrations of the wonderful effects of simple co-operation in the old world; while the huge systems of transportation, represented by our canal, railway and steamship companies; the immense industrial corporations engaged in mining and manufacturing pursuits, in the modern world, afford striking examples of the colossal effects of co-operation, in the infinitely extended and more complex forms, in which we find it applied to modern industry.

We see its principle in operation on every hand, in every sphere of human activity; in the workshop, the factory, the field or the mart. Whether we recognize it under the name of co-operation or not, in its altruistic, and therefore higher form, it is nothing more nor less than the outward manifestations of that feeling of trust in, and

dependence on our fellow men, which lies at the very base itself, on which the whole fabric of society is built up and maintained.

If we now proceed to consider the question of how far and in what directions is the principle of co-operation applicable and capable of extension to the farming industry, and restrict ourselves to an enquiring into the conditions that are favourable or adverse to its practical application in Western Canada, it may be well, first of all, to find out

(1) If any demand for the extension of its principles exists, and

(2) What is the nature of such demand, i.e., is it general or confined to certain classes or particular localities?

And first of all we note that the system of land tenure in Western Canada, as also in North America generally, differs fundamentally from that of European countries.

In North America the farmer owns and cultivates his own land. Three-fourths of the farms in the United States are cultivated by their owners, and only one-third of the remainder is held by tenants under the English plan. In Canada the percentage of farmers who own their farms is higher still. A further point of difference is that the supply of land in the West far outstrips the demand, while the reverse is the case in European countries, where land

has, generally speaking, acquired a scarcity value.

It has been remarked that the "magic of property turns sand into gold", and certainly the feeling of ownership tends to engender a spirit of independence that is antagonistic to, and in direct variance with the spirit of co-operation. Agriculturalists too, the world over, are more conservative in their modes of thought, more tied down to custom and precedent, and consequently slower to adopt new ideas and methods than almost any other class. And rightly so too, inasmuch as their education is often for the greater part, largely a matter of experience gained in the battle with nature.

As a result of that conflict they have learned to look askance at innovations and ideas which, so far as they can see are not the direct outcome of a real and practical acquaintance with the struggle against her forces.

But it is just here that the farmers of the West show in favourable contrast with their brethern of older settled communities.

As a class, they are self-reliant, acute, and versatile, and any thoughtful observer must have been struck by the almost unfailing precision with which these qualities enable them to find out the best solution of the problem immediately confronting them.

Many of them too are men possessed of sound technical knowledge of agriculture, combined with business acumen

and ability of a high order. Men whose minds are always active, and who along with their natural shrewdness combine a progressive and enterprising spirit unexcelled even among the most successful of business men and manufacturers.

Naturally they constitute the successes of the agricultural world, and probably at first sight would appear likely to derive little immediate or direct benefit from the introduction of new methods and economies in farming. On further examination, however, it will be seen that this is far from being the case.

Prof. Marshall in his "Economics of Industry" Bk.VI, Ch. X, remarks that "Wakefield and the American economists have taught us how a sparsely inhabited new district is enriched by the advent of every new settler", and it is through the growth of new centres of population that land acquires what is known as a "scarcity value". Any movement in the direction of intensification of the industry would tend to enhance the value of all holdings. Leaving for further consideration the question of the effects on any particular class of the application of co-operative principles, we may next enquire how far its general application would be likely to prove beneficial.

It is our endeavor to find an answer to the above question, it may not be out of place to refer to the system of Metayage or rental by shares which is in vogue in the Southern countries of Europe. Under this system the land is

divided into holdings which the tenant cultivates by the labour of himself and his family, and in some cases (though those are the exceptions) he is assisted by a few hired labourers. The landlord on his part supplies buildings, cattle, and occasionally even farm implements.

With many drawbacks, the system has some advantages, since it enables a poor man to get the use of capital at a low charge, and to that extent is a form of co-operation, but is wholly unsuited to farms large enough to give scope to the enterprise of an able and responsible tenant.

If we turn to the English System of tenure, and consider only the merits of the system, we find that the landlord's share consists of land, buildings, and permanent improvements.

This according to Prof. Marshall averages, in England, five times that which the farmer has to supply himself.

If then the landlord is willing to supply this five-sixths of the necessary capital at a net rent, which it is claimed seldom gives as much as 3 per cent interest on its cost; it follows that the English tenant farmer is particularly fortunate in being able to borrow what capital he wants at so low a rate, and in no other business could he borrow so large a part of his capital at all. But in calculating the proportion of capital which he is able to borrow, we must take account of the disproportionate value of land in a thickly populated country, in close proximity

and with ready access to large markets as compared with land much of which by reason of its situation and lack of facilities for transportation is comparatively speaking on the margin of cultivation. If we now turn to consider conditions in Western Canada where the land is owned and cultivated by the farmer himself, we find the simpler forms of co-operation very generally prevalent, possibly more so than in any other country.

A very superficial acquaintance with, or knowledge of the almost superhuman efforts put forth ny many farmers during the busy seasons of seeding, haying and harvest, will suffice to make clear the nature of a request for "help" from some neighbor; and yet how often we hear the answer "I'm up to my neck, but I don't like to see you stuck", forthcoming.

Other forms of co-operation are to be found in the formation of farmers' companies or associations for the purpose of owning and operating their own elevators; and while it is true that these in many instances have not proved altogether successful, the causes are frequently not far to seek; and where such organizations have been planned and managed in a businesslike and efficient manner they have proved a boon to the community.

Finally we may note the Grain Growers' Association with its numerous branches, organized in the interests of the farmers of the Western Provinces, a typically western organization which has already done much towards the securing of

better conditions generally. We see then that co-operation in one form or another is common to agriculture in all countries, that broadly speaking, in England it enables a man to borrow a large part of his capital at an exceptionally low rate of interest, that to a large extent the same feature is noticeable under the System of Metayage, and that in Western Canada the tendency is already to apply its principles on the wider and more extended scale in which we see it at work in commercial and manufacturing organizations, and we may further remark that each of these results can be specifically identified with its own system of land tenure.

Prof. Marshall in a foot note says that "the English System on the whole tends to promote the discovery and the diffusion of improved methods", but that "even in England progress in agriculture is slower than in manufacturies".

However this may be, we know that with the exception of the Netherlands no country can compare with Great Britain in the amount of produce per acre, and that the yield in certain parts of the Lowlands of Scotland is higher than in any other country in the world, a result partly due no doubt to special properties of the soil in certain of the Lowland counties of Scotland, but still more to the generally higher standard of farming and intensity of cultivation which are to be found there.

Bearing in mind the general trend in modern industry towards production on a large scale, we may now inquire how

far this tendency is applicable to agriculture.

Of the ~~classes~~ causes which operate against the introduction of manufacturing methods to agricultural pursuits we may note two. The farmer is at a disadvantage in having to seek his work, in other words, agriculture is spread over the land, whereas the manufacturer has the raw material for him to work on brought to him. And again the manufacturer can devote his time to one class of work, while the farmer must adapt his work to the seasons, and further must be continually changing from one class of work to another. Still there are forces which tend to drive it in that direction. Take for example the case of a small farmer, even if he were possessed of the necessary capital it would be false economy on his part to invest in such expensive machinery as a steam plough or threshing machine, for which he could find employment only for a short time. As a rule he is able to hire ~~mechanics~~ machinery for such purposes, but there are others which he can only get by co-operation with his neighbors, and in the absence of any organized scheme, this is apt to prove unsatisfactory, owing to vagaries of weather and other causes. And again the movements of agricultural science and practice compel a farmer to go beyond the results of his own experiments, if he expects to keep abreast of the changes of the day.

If we turn our attention to a consideration of this general tendency towards production on a large scale in its special application to conditions in Western Canada, we find

the movement still more pronounced both in the direction of what are called Internal Economics and perhaps more particularly of External Economics.

The System of Interchangeable Parts, by which a farmer can ~~have~~ use complicated machinery with confidence, no matter whether he has access to a skilled mechanic or not is being rapidly developed, and is already extensively in operation in these provinces. Under this system replacement of a broken part is almost immediately possible; the various parts of the machine being standardized, it is only necessary to know the number of the machine and that of the part broken.

This specialization of machinery can only be carried far where production is on a large scale, and economics in the use of such machinery as we have referred to, depends not so much on the size of the farm using it, as on the number of farms using it, or if we may apply the term to such a vast area as is covered by the Prairie Provinces, on the Localization of the Farming Industry.

Now the physical causes which have led to the Localization of the Farming Industry in Western Canada, as in every other country, are climate and soil, and both exert a marked influence on the tendency under notice.

As we have already seen that movements along lines of co-operation are a marked feature of Western agricultural methods, it may be well to pass in review

some of the suggestions which have from time to time been put forward by advocates of the introduction of manufacturing methods to farming operations:

(1) Industrialized or factory farms. The suggestion that extensive farms should be worked upon the same principles as large industrial concerns has received wide attention but as yet few reliable experiments along these lines have been made, owing no doubt to the difficulties to be encountered, and the expensive nature of such an undertaking. Nor can such farms be regarded as altogether characteristic of British enterprise in agriculture. Some development of the idea can however be seen in the large sugar, rubber, tea and coffee estates of tropical countries, and can be still more closely identified with the Syndicate farms in the east of France.

If some joint stock company or body of capitalists would conduct experiments, with such modifications as local conditions ~~support~~ *suggest*, along the lines laid down by Prof. Marshall, there can be no doubt that much useful information and guidance of a practical nature could be obtained, and under prevailing conditions, with business-like management the risks of undertaking such expensive experiments would be reduced to a minimum.

According to Prof. Marshall (on this plan there would be a central set of buildings (there ~~ought to~~ might be more than one) from which roads and even light tramways extended in all directions. In these buildings the ~~rec~~ recognized principles of factory management would be applied, machinery would be specialized and economized, waste of material would be avoided, by-products would be utilized, and above all the best skill and managing power would be employed, but only for its proper work".
(V. Marshall's Principles of Economics, Bl. VI, Ch. X f.n.)

In connection with the statement made above that such experiments although necessarily involving a large outlay of capital, need not therefore result in loss, the following calculation of the cost of production of one bushel of wheat, for the season of 1917 in the Winnipeg District, based on a yield of 25 bushels per acre, is instructive. A further approximation of the return per acre is appended to the estimated cost of production.

ESTIMATED COST OF PRODUCTION OF ONE BUSHEL OF WHEAT

SEASON OF 1917 -- WINNIPEG DISTRICT.

(Based on production of 25 bus. per acre.)

SEED 1½ bus. Wheat at $2.50 per bushel	$ 3.75
Plowing and two harrowings " acre	3.00
Drilling " "	1.00
Harrowing after seeding " "	.25
Cutting " "	1.00
Twine " " ⅓ at 18¢ per lb.	.54
Stooking " "	.50
Threshing 25 bus..	3.00
Freight, loading and hauling 25 bus. @ 15¢ per bus. to Ft. William	3.75
Interest land valued at $30.00 per acre. 7%	2.10
Taxes per acre	.25
Total cost per acre	$ 19.14

Approximate, say:

Cost per bushel	$ .80
Minimum price per bushel	2.00
Profit per bushel	1.20
Profit per acre	30.00

I am indebted for the figures to R. Johnston, Esq., of Winnipeg, a practical farmer with many years of successful experience in farming in the West. It may be added that experiments actually carried ont in the season of 1917, gave results almost exactly corresponding to the above estimate of cost of production. The chief points of difference being that under the head of Drilling a slightly lower rate was obtained, and the minimum price per bushel was exceeded.

It must be noted however that the selected basis of yield of 25 bushels per acre is purely arbitrary, and as a glance at the subjoined Table showing the average yield per acre of wheat in the Province of Manitoba over a period of five years, 1912-1916, inclusive, will show is rather above than below the average.

Table showing:

(1) Reputed acreage under wheat in Province of Manitoba over period of five years, 1912-1916 inclusive;

(2) Estimated total yield of wheat;

(3) Average yield per acre.

Year	Total No. of Acres in Wheat	Estimated Total Yield in Bushels
1912	2,653,100	60,042,000
1913	2,804,000	53,331,000
1914	2,616,000	38,605,000
1915	3,342,900	96,425,000
1916	2,305,900	27,714,000
	13,721,900	276,117,000

Average yield per acre 20.1 bushels.

The figures are taken from the Report of the Department of Trade and Commerce, Part V, Grain Statistics for 1917.

As against this apparent discrepancy it is worth noting that Mr. Johnston's estimated cost of production, provides for two harrowings before and one after seeding, and it is to be feared that in practice this is a custom more often ~~observed~~ "honoured in the breach than ~~in~~ the ~~keeping~~ observance".

While much valuable work is done in this direction by the various agricultural colleges throughout the Dominion, large industrialized farms on the model outlined by Prof. Marshall, would be in a position to collect and furnish similar data on a much larger scale and covering every branch of the industry. In Western Canada large farms of say ten to twenty thousand acres of land could be organized and managed as business enterprises.

The whole farm would be under the control of a general manager, with assistant managers, and heads of departments to ensure efficiency in every branch of the enterprise.

The pre-requisite for such a plan would include (1) the provision of the necessary capital, and in addition a reserve of capital to meet the effects of one or two bad seasons at the start. (provision would have to be made to meet bad seasons later, whether in the form of a sinking fund or otherwise).

(2) The selection of a locality with special regard to the scope it would afford to diversified farming.

(3) The selection of managers combining business qualifications with knowledge of scientific methods in farming.

Among the economics which might reasonably be anticipated under some such plan or modification of it, the following occur: Under the heading of Management, the bigger the enterprise the better can it afford to pay for efficient direction and scientific advice.

As a consequence of capable management, economy in labour would naturally result. The proper apportionment of each man's work, and the selection of the task best suited to his capacity, would tend to reduce to a minimum the need for that over-exertion and long hours which constitute an economically unsound feature of present day methods.

The advantages of buying and selling wholesale, the saving effected by the employment of methods in preparing for market, that are only remunerative on a large scale, the elimination of waste through defects in the system of grading, are all possible under such a plan.

Moreover the risks inseparable from farming, whether arising from climatic or other causes, as well as the fluctuating returns are best equalized by working on a large scale, and this would especially apply to the Western Provinces where the effects of hail and frost and to a less extent even drought are often quite local, and confined to small areas.

Another possible development might take the form of co-operative colonies.

This would necessarily be more particularly applicable to small holdings, and although such holdings are rather the exception than the rule in the West, since one of the most important problems of the future is the settlement of the land, it may not be out of place here to briefly consider what effects the application of the principles of co-operation might have in this case.

The only parallel we have in the West to the Small Holding of olden countries is to be found in the system of home-steading, in which from small beginnings, through gradual development, the whole or greater part of a quarter section of land is brought under cultivation.

Just as the really good small holder soon gets possession of a larger acreage and ceases to be a small holder, so does the successful homesteader quickly improve and bring under cultivation the greater part of his quarter section, often pre-empting and adding one or more quarter sections to his homestead, until he too farms on a large scale.

In what ways then is the principle of co-operation capable of adaptation to the needs of the homesteader?

Strictly speaking, of course, the homesteader apart from the processes of gradual development of his holding, is not a small holder. His quarter section devoted to grain growing in some older settled country, would be farming on a large scale.

There are of course many drawbacks to any attempt to form co-operative colonies under the existing system of Homesteading, chief among which must be ranked lack of transportation facilities over a widely scattered area. Nevertheless a beginning might be made by the formation of some co-operative organization, which would at least enable the homesteader to purchase supplies at wholesale prices plus the cost of management, maintain, keep in repair and arrange for the use in regulated order of the more expensive machinery on a farm and arrange for the grading and marketing of his produce. The Homesteader's lack of capital often places him at a disadvantage in both buying and selling. He finds it necessary to purchase his supplies in small quantities.

In cases where he is fortunate enough to be able to buy what he needs locally, he has frequently to put up with goods of inferior quality, while on the other hand if he purchases in a distant market he is met with prohibitive freight rates.

In selling he is at a still greater disadvantage. He cannot grade his produce or turn out a large bulk of uniform quality, and is, as a rule, very much at the mercy of the middleman in disposing of any supplies he may have which falls below the standard grades.

Often at remote country elevators, the alternative to the man who refuses to accept a totally inadequate offer for his produce, is to haul it home it may be a distance of twenty or even thirty miles, and feed it to his stock.

A consideration of the advantages of wholesale management with the enterprise and industry that are engendered by separate ownership might go far to remove many, if not all of the hardships and disadvantages under which the homesteader labours.

Homesteading colonies organized into a co-operative framework might well command the attention of those on whom devolves the duty of developing the resources of the land. The existence of large industrialized farms in the neighborhood of such colonies would be helpful, since itbwould make possible the establishment of a system of light railways throughout the country, which acting as feeders to the trunk lines would mean improved and cheaper transportation rates.

An analysis of the conditions which constitute the freight traffic of the Railways of Canada for the year ending June 30, 1916, reveals the fact that of a total of 109,659,088 tons carried 31,012,070 tons were agricultural produce. What proportion of this total originated in the Western Provinces it is difficult to say, but the total number of cars of grain inspected at the various points in the Western Inspection Division during the Crop Year 1915-1916 by Railways, is returned as 354,039, which at an average of $80 per car would mean a total cost of $28,323,120 for transportation to the elevators at the head of the Great Lakes alone.

While the above does not purport in any sense to be more than a very rough estimate, it will serve to indicate in a general manner, how closely the development of the resources of the land is allied to, and dependent on improvement ~~and~~ of facilities in the means of transportation.

The attempt to deal with the extension of the principles of co-operation to farming industries, would create at once a demand for men possessed of genuine constructive and organizing capacity, equipped with scientific and detailed knowledge of the various business organizations and industries, which are directly or indirectly dependent upon or connected with agriculture.

Men who have received training in scientific methods at agricultural colleges would find openings either as managers, assistant managers, or heads of departments; while the demand

for agricultural labour would tend to become steadier and less liable to fluctuation, thus re-acting beneficially on other labour markets.

The close of the war will mean the release from military service of thousands of young men; for whom a return to the routine and monotony of office life and sedentary occupations, will have no attraction; while on the other hand habits of discipline and self-control, acquired under the exegencies of military training, would prove invaluable in the development of those characteristics of mutual trust and confidence which are so essential to success in any co-operative undertaking.

It would be base ingratitude indeed, to ask or expect men who have given their all in the service of their country to add the hardships, privations and drudgery of pioneer life.

The least that can be done is see to it that the way shall be made as smooth for them as possible, that their interests as a class shall be so safeguarded that every man shall reap the fruits of his labour, and nothing left undone calculated to make their surroundings pleasant and attractive.

All this may sound very Utopian, and some may say (bearing in mind the successes of the calling) very unnecessary, but there is another side to the picture, and when we come to reflect on the number of middlemen and subsidiary industries, wholly or largely dependent on agriculture, it is difficult to believe that it surpasses the wit of man to devise means

which will, at least afford some support to the belief that "the labourer is worthy of his hire". The time is opportune for the laying of plans, having for their object the re-vitalization of what must always remain the basic industry of every self-contained and self-supporting nation.

One of the great features of the nineteenth century was the economic development of Germany.

If unequalled resources whether of land, water, forest or mines count for anything, is it too much to hope that the twentieth century may witness in Canada the total eclipse of that development in the higher and truer interests of humanity?