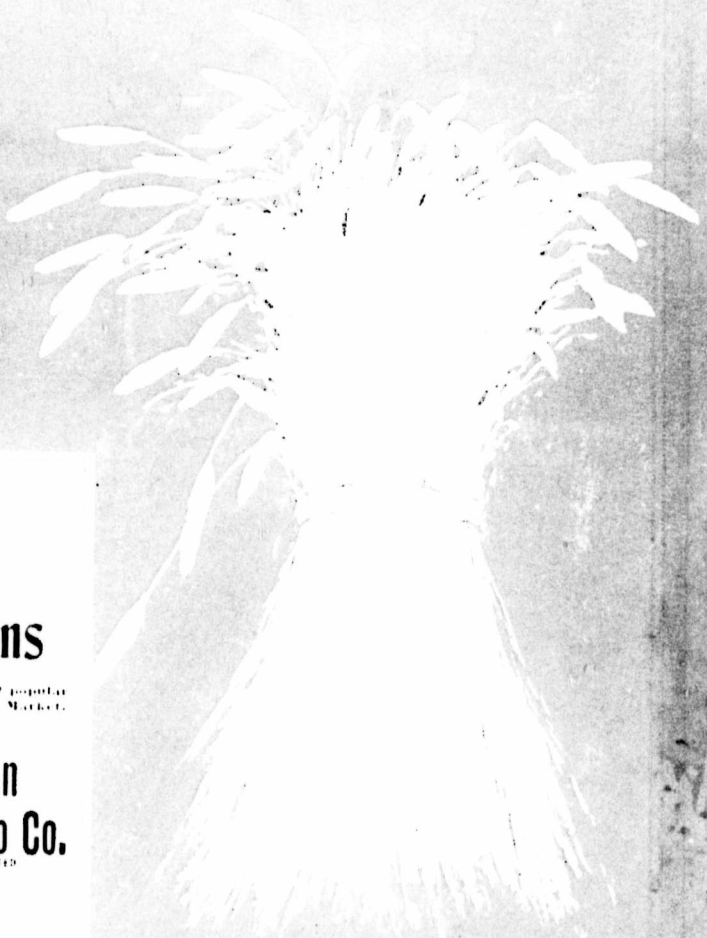


V. 19 # 9-10

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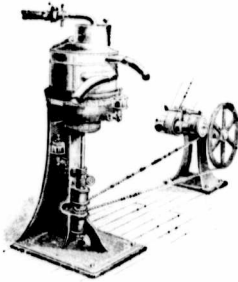
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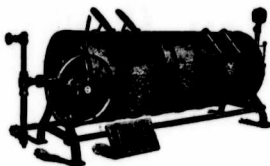
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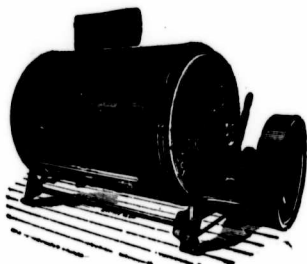
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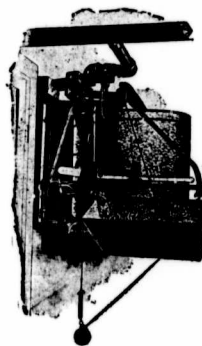
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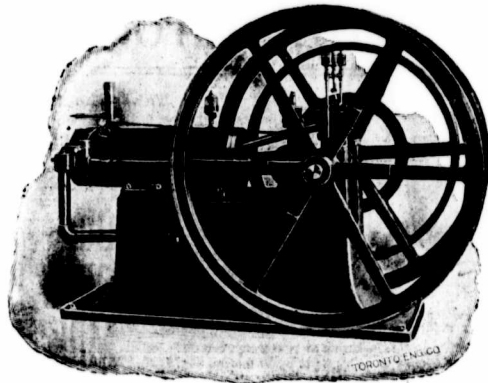
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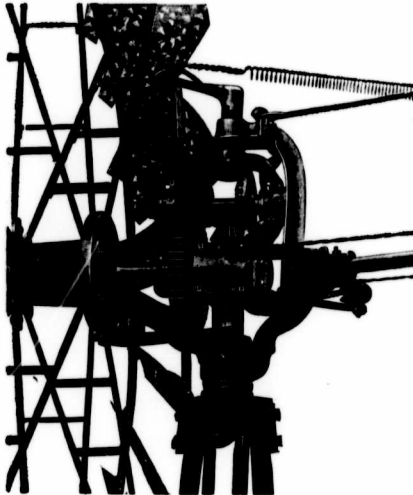
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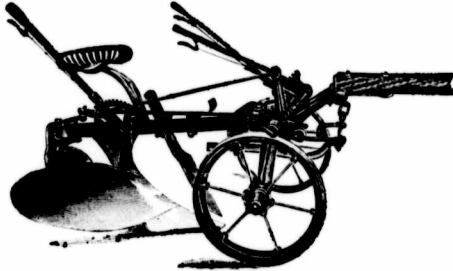
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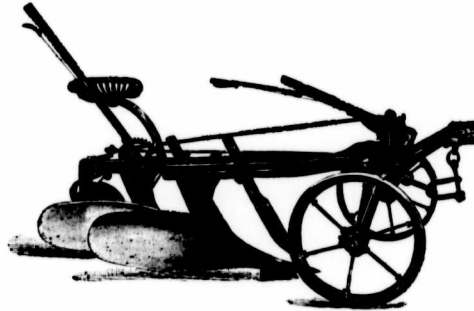
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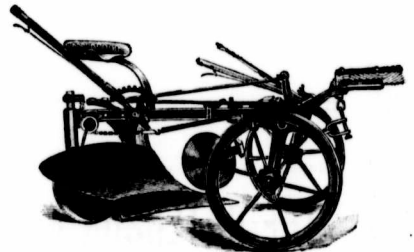


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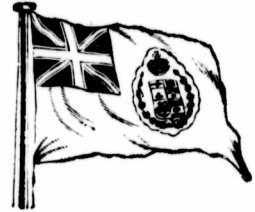
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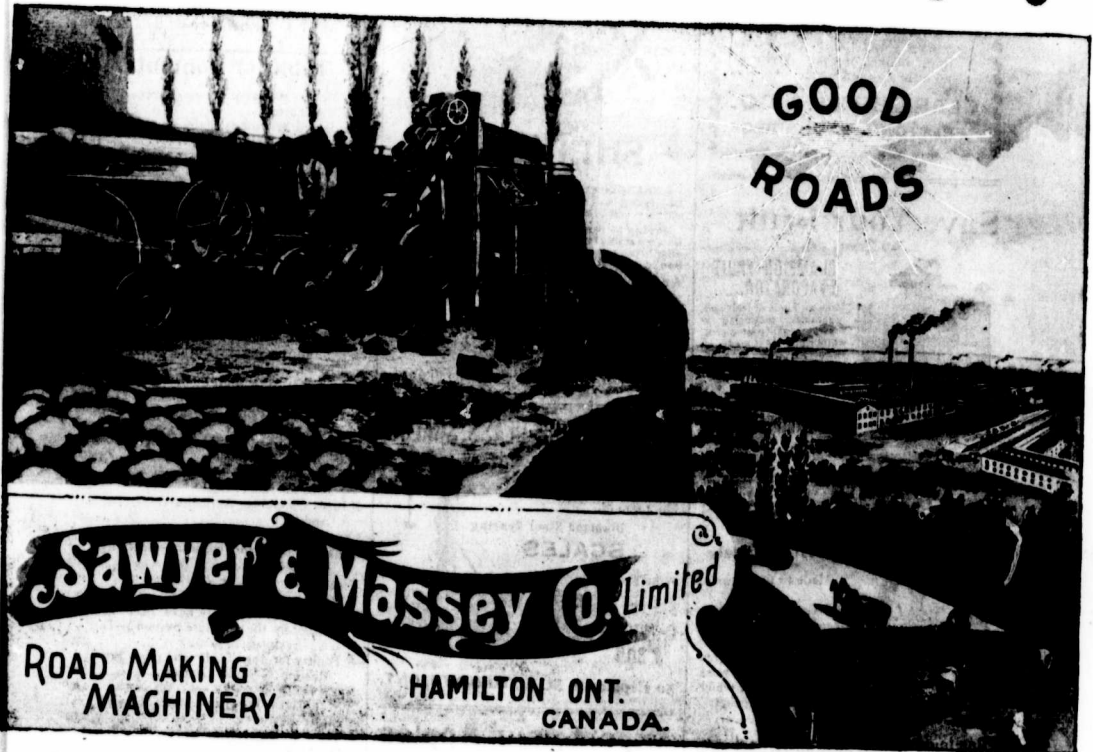
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# The Farming World

For Farmers and Stockmen

Vol. XIX.

AUGUST 27th, SEPTEMBER 3rd, 1901.

No. 9-10

## The Money-Making Farmer's Paper.

**O**N presenting our readers with this, our annual Autumn number, we do so with a great deal of pleasure. At no previous period in the history of this journal have we felt so thoroughly satisfied with the result of our efforts in preparing a special edition of The Farming World as with this one. It may not be all that we would like it to be, but considering the valuable matter which it contains, the nature of the illustrations and the subjects they illustrate, the splendid array of advertisements, and the mechanical make up and arrangement of the contents, this number excels any previous effort, and we say it advisedly, is the most important single volume ever published in the interests of Canadian agriculture.

The series of articles dealing with organized agriculture in the several provinces of the Dominion, is a most unique and valuable feature of the number. No one volume extant contains within its pages such important official data relating to the progress and development of agriculture in all parts of the Dominion as is contained in this number. For this reason, if no other, this number will be of great value as a source of reference.

This annual Autumn number marks the beginning of the nineteenth year of publication of The Farming World. At no period in its history has it been so well and favorably known as at the present time. It is essentially the money-making and the money-spending farmers' paper. The farmer who reads and carefully digests what appears in its columns every week of the fifty-two during the year, has acquired a knowledge of profitable methods in agriculture that he can obtain from no other source. In addition, the farmer who desires to invest his earnings in useful and reliable purchases can find no better index of goods for sale than the advertising columns of The Farming World from which everything of a questionable character is excluded.

As to the future, we can say that the energetic and up-to-date policy that has moulded the character of the paper in the past will be continued, but with greater vigor and zeal for the cause we represent, that of profitable agriculture in every province of the Dominion. To speak candidly, we are in a better position than ever before to make The Farming World of value to the Canadian farmer. The program under consid-

eration for this fall and winter's campaign, is a very elaborate one indeed, and one that will greatly enhance the value of the paper as the money-making farmers' journal.

A series of articles are in contemplation dealing with some new and valuable phases of the live stock industry; agriculture in the new century; "The New Farmer," etc., by practical and well-informed writers. And just here we might add that The Farming World, because it is published in the second largest city of the Dominion, does not voice the opinions of persons unacquainted with Canadian agriculture and the needs of the Canadian farmer. Its columns are filled from week to week with articles written by practical men thoroughly familiar and in closest possible touch with up-to-date methods in successful agriculture. We, therefore, bespeak the active co-operation of every reader under whose notice this article comes in extending the circulation of The Farming World in every province of the Dominion.

## The New Farmer.

The new farmer is the man of the century. He is not of the old, but the new century. He is the progressive force in agriculture to-day. He is not wedded to old ideas or old ways of doing things, but is thoroughly up-to-date in all he does. He has discarded the old-time reaper for the self binder; the scythe for the up-to-date mowing machine; the hand for the sulky rake; the pitch fork for the hay loader, and the modern hay fork; the old timer for the modern sulky plow; hand sowing for the seeder, and in fact, everything attached to the agriculture of the past, though rendering invaluable service in its time, he has discarded for the more modern and up-to-date methods of the twentieth century.

The new farmer is paying more attention to his stock and to every branch of his farming operations than his predecessor. He is not satisfied with the old scrub, knock-about animal which served its generation well in the days of browse and short food supply, but has the well-bred and well-fed animal to exercise his money-making powers upon. No haphazard, shiftless methods of farming are considered by him. He has a definite plan and system in his work and farming operations. Every detail is looked after, every leak is stopped up, and only the most profitable lines adopted. He knows which departments of his farm pay best, and are likely to pay best, and

lays his plans accordingly, ever looking for new ways and means of lessening his labor and making his business more profitable.

The new farmer's buildings are always the best that can be had for the purpose. His stables are built after the most sanitary plans, ventilation, light and pure air for his animals being sought for. His house, though not an elegant mansion, entailing a large amount of unnecessary expense and labor to furnish and keep clean, is commodious and well-planned for the purposes for which it is intended, that of affording comfort, pleasure and security for himself and his family.

So much for the new farmer. But what about the new farmer's wife. Has she shown the advancement in her particular sphere that is characteristic of her up-to-date spouse? Has she the modern and improved facilities for performing her duties about the house that the new farmer of to-day has? Does she not use the same old style cook stove; carry water from the well in the same old way; bring in the wood in the same old weary arms; make the beds after the same old plan; wash the dishes in the same old way, and in short, perform her duties very largely in the same old way that her forbears of fifty years ago did? Has she any more time for self culture and improvement; any more time for training her children; any more of the luxuries of life than the housewife of the last century? Does she dress better; is she happier and is her position better socially and otherwise than that of her predecessor of a few decades ago? These are questions we will have to leave unanswered for the present, at least. If any of our readers have anything to say on the subject we shall be glad to hear from them. In the meantime, however, remember the "new farmer."

## Canada at International Fairs.

International, or big World's Fairs, are becoming more numerous. Every large city in almost all civilized countries has had ambitions in this direction. Since the World's Fair at Chicago, in 1893, several great international shows have been held, all of them of more or less importance as factors in opening up new avenues of trade and new markets for food and other products.

Canada has been represented at most of the great fairs during the past decade, and it would seem as if the time had now arrived when some steps should be taken towards form-

ing a separate department of service to look after her interests at these large fairs. We have, no doubt, fared well in the past by having only special commissioners appointed for the time being, to select, arrange and prepare exhibits and to represent our interests in other lands. But we sincerely believe that something of a more permanent character should be done. A permanent officer, whose duty it would be to collect and make ready exhibits for all expositions where it was deemed advisable Canada should be represented, would serve a useful purpose and would do away with a great deal of the rush and confusion that characterizes many of the arrangements for exhibits under the present modes of procedure.

The practice now is to enlist the service of some official or officials of the Government service to take charge of, collect and arrange the exhibits in the special lines in which their regular duties lay. While these officials may be quite capable of performing this special service in a satisfactory manner, their regular duties must, to a large extent, be neglected. It would, therefore, be a paying investment and one that would give more satisfaction to all concerned to have a permanent officer, and if need be, a permanent branch of service to look after the big international fairs. Such an officer would always have his eye open for creditable exhibits, he would know the kinds that would best serve the purpose of such expositions, and moreover, could collect and arrange exhibits without interfering with the duties of regular officials, and of work that is of very great importance to the country. Such an officer need not take the place of a special commissioner, who might be appointed in the same way as at present to represent Canada.

We make this as a suggestion to the powers that be, believing as we do, that if Canada is to be represented at great international shows, she should be well represented, and that a permanent officer or a permanent branch of service, specially set apart for this work, could perform it a great deal better than the present arrangement, no matter how satisfactory the results have been. If it is necessary that Canada should make an exhibit and be represented at a big fair, there should be no half way methods in carrying out the arrangements. It were better not to be represented at all than not to be well represented, and as we have already stated, in our opinion, a much more satisfactory showing could be made by having a permanent office established for this work.

This year Canada is represented at two great international expositions, namely, at Glasgow and Buffalo. Elsewhere in this number will be found articles dealing especially with what Canada is doing at these centres. It is conceded by all who have seen it, that Canada's display at Glasgow is superior to that made by any other country. Mr. Hav's article, therefore, which describes Canada at Glasgow, will be read with interest. He had charge of the

decorations and the arrangement of the agricultural trophy, and as the illustrations show, performed his duties well. Canada at the Pan-American is dealt with pretty fully in another article, and the two, with the illustrations, make very satisfactory reading.

The next big fair will be at St. Louis in 1903. President McKinley has already sent invitations to all the nations of the earth to take part in this international show. We presume Canada will be represented there. If so, an early preparation should be made to have her well represented.

### The Industrial Fair Opened.

The twenty-third annual fair of the Toronto Industrial Exhibition Association was opened under most favorable auspices by Sir Wilfrid Laurier, Premier of the Dominion, on Tuesday last. The weather was all that could be desired, and the beautiful grounds of the fair were looking their very best. There was a large gathering of the prominent people of the city, and from outside places. And never, perhaps, in the history of the fair, have such large crowds attended the opening ceremonies. The outlook certainly is bright for one of the most successful exhibitions ever held in the Queen City.

In replying to the address of welcome, read by Dr. Andrew Smith, President, in behalf of the Board of Directors of the Association, Sir Wilfrid paid a nicely worded compliment to Toronto and its exposition in which he expressed the hope that it might develop into a Dominion Exhibition, at which products from the different provinces would compete in friendly rivalry. Among other things he said:

"If there is one feature which is absolutely characteristic, which you have here, it is in your annual Exhibition. (Applause.) Exhibitions are a product of modern civilization. Before the middle of the 18th century there were in France those Exhibitions of work and art which have culminated in the French Salon, and at the same time they had in England a few agricultural exhibits at a small school, and chiefly confined to cattle. But exhibitions of art, of agriculture, are the product of the civilization of the 19th century, so prolific in invention for the happiness of mankind.

"To this result—I say it without flattery—I do not know how to flatter—(applause and laughter)—Toronto has taken a step which has not been taken by any other city on the continent or in the world. There are exhibitions outside of Toronto, but none of them greater than we have here. Spasmodic, ephemeral, they come like mushrooms and disappear like mushrooms. Enormous sums are expended upon their buildings, which glitter to the eye; exhibitions, which in substance or in name do not last for more than one season. The exhibitions at Toronto are annual, they are perennial, and flourish like flower and fruit with the passing seasons. Its buildings are not built for one season, but for the ages, and

therefore, I say to you, to the citizens of Toronto, that too much credit cannot be paid to the organizers, the financial promoters and the financial managers of the Industrial Exhibition. They have founded a thing which will live and do a great deal, not only for Toronto, but for the Province of Ontario and the whole Dominion of Canada. They have spent their money upon these buildings, upon the lawns and the grounds. They did not expect to, and do not declare dividends, but the profits have gone towards enhancing the beauty of this, the permanent exhibition of Toronto. I agree with every word as to the benefit and the good not only to this Province but to the whole Dominion of Canada as a result of this exhibition.

"I have no right to speak here in any capacity except as a citizen of Canada. Speaking as a citizen, I take this opportunity to say that I would like to see in the city of Toronto a great interprovincial exhibition embracing the organizations of all the provinces. Likewise as Prime Minister, and giving you my own opinion, I would say that if there is in Canada a city entitled to hold a great interprovincial exhibition it is by all means the city of Toronto. (Loud applause.) We must give credit to whom it is due. There is no city which has done as much in that line as the city of Toronto. By-and-by we may gather here and see in these buildings not only the products of the Province of Ontario, but of the Provinces of Quebec, Nova Scotia and all the provinces of the Dominion. For my own part I believe the day is not far distant when we shall find in the city of Toronto the exhibits of the different provinces which shall meet here in rivalry, upon the honest and best principles of rivalry, in industry, art and agriculture. (Applause.) Perhaps next year or the year afterwards we shall have in this city exhibits from the steel works of Sydney, Cape Breton, to compare with the steel works at the Soo, Ontario; the fruits of Nova Scotia to compare with the fruits of Ontario and Quebec, as well as the exhibits of horses and cattle from this and all the other provinces. I fear, however, that in respect to horses and cattle we must give the palm to Ontario at once."

The exhibits are now well in place and at the time of writing the grounds were besieged by thousands of children eager to see the sights and to find out what is going on. Every hole and corner is looked into and we question whether any other class of visitors see so much as do those on Children's Day.

The live stock exhibits are especially good. The entries in the horse classes number over 900 as compared with 648 last year. The stables are filling up well and a splendid turnout of horses is expected. Roadsters show the largest increase and there is a great showing of hunters and jumpers. There are perhaps not so many thoroughbreds as usual. Heavy horses are well up to the mark both in numbers and quality and some fine specimens are already in place.

Never in the previous history of the Fair has there been such a fine exhibit of cattle as is to be seen this year. It is without doubt the best cattle display ever seen in Canada or for that matter on this Continent. There are over 700 head of cattle on the grounds, about 150 more than the usual run. Ayrshires are the strongest class, all the leading Quebec breeds being on hand. Next in point of numbers come the Short-horns which make a fine display equal in number to that of last year, which is saying a great deal, while the quality is superior, some very noted animals being shown. Jerseys and Holsteins are out in strong force while Polled Angus and Galloways make an exceptionally good display of about 50 animals for each breed. The dairy classes all through are especially heavy, among them being 60 French Canadian cattle, 22 of which are from New York State.

Herefords make an exceptionally good showing, filling more than one stable. A leading Nova Scotia herd is represented in this class. There are several American herds present, Boland of Mich., showing Shorthorns, while the celebrated Soapstone herd of Gurnseys of Pennsylvania, is represented by several fine specimens. All through, the exhibit of cattle is an exceptionally fine one and no one interested in live stock should miss seeing it.

Sheep are out in equal numbers to last year and fill the sheep pens to overflowing. The swine display measures up well with last year's exhibit, while poultry makes the usual fine display. In dairy products the classes are filling up well, there being 350 cheese on hand. Altogether this year's Exhibition is a good one, and no one who can afford to should miss seeing it.

carriages cannot compete with the more finished product of the big factory. The shoemaker has suffered because his boots cannot hold their own with the machine-made boots from town or city. All these changes tend to lessen the population of the district and yet affect the farmer beneficially rather than otherwise. The carriage he buys is probably cheaper, and certainly of better finish than the one made by his old neighbor. The boots that come from the store are better value for the money than those he once got from the shoemaker. The point is that industry is becoming organized and in the process of organization the little roadside manufactories disappear, to the ultimate actual benefit of the farmers who formerly paid higher prices for the privilege of having probably inferior work done by their neighbor.

And then, it is the fact that many farmers' sons leave the farm. Granting that, does the farm lapse into uncultivation? That does not happen, and it seems to us evident that a family is better off when one son has a hundred acre farm, and the other either has another good-sized farm out West or else is earning his living in some other occupation, than it would be were both sons living side by side on fifty acre farms. The retention of population within the one district by the splitting up of farms is contrary to the genius of the men who made Ontario what it is. In most parts of the province, instead, the tendency is to have larger farms, is for farmers who realize that the machinery which will adequately work a hundred acre farm will also suffice for a hundred and fifty acre farm to add acre to acre to get the larger farm which is now the most economical one. Here, again, we see the tendency working which leads to the goal of fewer and more prosperous farmers instead of more numerous farmers living in more straitened circumstances. We are able to perceive no line of argument which will lead us to prefer the latter state of affairs to the former.

The whole subject is admirably illustrated by some curious calculations incorporated by Mr. Walter Wellman, in his article on the "Rise of the American City," in the current issue of McClure's. Forty years ago, he says, the time of human labor required on an average to produce one bushel of corn, was four hours and thirty-four minutes; now it is forty-one minutes. The amount of human labor required to produce a bushel of wheat from beginning to end is today only ten minutes, whereas, in 1850 the time was three hours. "Forty years ago, when men mowed the grass with scythes, spread it and turned it over for drying with pitchforks, raked it into windrows with a hand-rake, cocked it with a pitchfork, and baled it with a hand-press, the time of human labor required per ton of hay was thirty-five and one-half hours; now, with horse-mowers, horse-rakes and horse-presses, the human labor required per ton is eleven hours and thirty-four minutes; the labor cost has fallen from \$3.06 to

## The Census and the Farmer

The census has but confirmed our knowledge of what has long been evident to observers, that the population of the rural districts of Ontario has been declining during the past three decades, and that the decline has continued during the last few years, prosperous as they have been. With the exception of one or two districts where special circumstances prevail the rural municipalities of older Ontario show everywhere a drop. The idea that dense population and prosperity are interwoven conditions is very firmly rooted, and the proof of the decrease has in consequence, caused much searching of heart among those who hold this view.

Putting to one side the futile discussions of politicians as to responsibility, the question that will appeal to the calm observer is whether this decrease is, or is not, a misfortune to the people actually concerned—the farmers who live in and work these rural districts. The area of the land remains the same, and the area under cultivation is larger. The quantity of products extracted from the soil, in one form or another, has increased. The amount of money earned by the land has undergone a substantial increase, the swelling of the receipts from cattle, and the opening of profitable side-lines having more than balanced the diminished returns from grains. There are fewer people in the country districts, which thus earn a larger amount of money. Is that a calamity to those people?

In what classes of the community has the decrease made itself felt? First, and most conspicuous among the classes affected is assuredly the farm laborer. No farmer need be told of the scarcity of hired help. Twenty or thirty years ago the farmers needed far more help than they do to-day, and they got it. The reign of agricultural machinery had not begun, and the old primitive methods of seeding and harvesting were in vogue. Periodically a cry for labor went up from the farms,

and the harvest of two or three decades ago needed twice or thrice as many hands to garner it. Machinery has changed that, and the labor which became unnecessary has gone elsewhere. Empty and deserted houses one meets here and there by the roadside, but are they farm-houses? How many farms in Ontario are abandoned? The chances are very many to one that the deserted house was tenanted once by a farm servant. The increase of stock farming, with its substitution of a steady all the year round grind of work for the old alternation between a fiercely laborious summer and a winter of leisure, has given some measure of compensation to the farm laborer, and ensures for a number of employees steadier work under more satisfactory social conditions than was generally possible before; but taking it all in all, it is evident that the greatest cause of the decrease of the population of our rural districts has been the partial disappearance of this class. In connection with this fact it must be recollected that in former times a considerable proportion of the laborers who supplied the needs of the farmers lived in the villages and towns, and that the testimony of the townspeople points to increasing difficulty in getting general laborers to do odd jobs.

Again, it must be remembered that the development of industrial organization, or changes in the commercial system of the country, have resulted in the disappearance of a number of rural industries. The changes in the flour milling trade have lessened the number of grist mills, which formerly dotted the country. The sawmill, which once was a feature of every neighborhood, has been shut up by the reduction of the forest lands to fertile fields. The blacksmith, who twenty or thirty years ago made a dozen or twenty carriages in the year, now has only one helper instead of half a dozen, and confines himself to the simpler portions of his trade, for his

\$1.29 per ton." Following up this line of reasoning, he notes that during the half century which has gone the rural population of the United States has little more than doubled, while the output of that rural population has increased in enormously greater ratio: "Corn, four times as much; wheat, six to eight times as much; oats, five times as much; barley, eleven times as much; cotton, eight times as much; wool, six times as much; hay, pork, beef, mutton, chickens, eggs, butter from 20 to 100 times as much. The number of farm workers has only doubled, the quantity and value of farm-produce has been multiplied by twenty."

There we have the situation. All over the nation the process of organizing and systematizing production has gone on. The farmer gets his products from the ground to the market in greater quantity than ever, yet with only one-half or one-third of the labor. Consequently, the number of farmers who can work the land to its greatest advantage is smaller than it was in the years of manual labor. Simultaneously, manufacturing in every branch has been reduced to system and order, and it has been discovered that many men working in unison possess enormously greater powers of production than the same number of men working individually, scattered over the country-side. And so we see the explanation of the phenomenon, that our country districts can possess fewer residents than formerly and can none the less produce more food-products than formerly, earn more money than formerly, and keep those residents at a higher pitch of prosperity than formerly. Similarly, these country districts can furnish the ultimate markets for and ultimate support of far larger urban populations than formerly. It is granted that the country districts maintain fewer people than of old, but these districts contain few drones, the people that do live in them are working at a far higher average of productive energy, and they receive more money than was the case in the older days. Most fortunately, we have unlimited room in our great West and in our New Ontario in which to place the workers who quit the settled fields of industry rather than overcrowd them. It is not pretended that we have reached the limit of profitable cultivation of our soil. When our vacant lands are occupied to such an extent that the opening of new areas causes greater effort than the more minute and painstaking working over of the already occupied areas we shall see an increase in what we may regard as the standard number of farmers who can subsist in a given district so as to unite the extremes of productiveness of the soil and of comfort of those producing. That seems to us to be the ideal of country life.

**The balance of this year free to new subscribers. See announcement on page 260.**

## Our Western Letter

### Manitoba Crops. The Labor Difficulty.

Winnipeg, August 22nd, 1901.

The present week will bring to a close a long period of suspense and anxiety, for by that time the fate of the wheat crop will be definitely decided. The present season has been one to try the strongest nerve. Following the partial failure of last year, there was much more than usual depending upon the success of the present crop, and every branch of industry in the West was "holding its breath." The seeding season was, like that of 1900, warm and dry, with plenty of moisture in the ground for germinating the seed. Seeding over and the grain nicely out of the ground but no rain; it seemed that the dry weather would never end, yet the crops continued to grow. Then the rains commenced; just a few light showers in late May, followed by the wettest June on record. The rains continued somewhat less vigorously throughout July, and many began to express the fear that the grain would not ripen in time, owing to the heavy growth of straw. But this is Manitoba's year. The rains ceased just at the proper time since when there has been continuous dry warm bright weather, just what has been required to mature and ripen the crop. The only drawback reported has been slight local attacks of rust, and though some fields may suffer considerable diminution of the yield, the loss from this source will in the aggregate be slight.

The Government Crop Report for August, just issued, gives the following estimate of crop yields, breaking, fallowing, etc.:

	Acres.	Yield per acre—bus.	Total yield—bus
Wheat.....	2,011,835	24.28	48,857,255
Oats.....	680,951	43.78	30,206,775
Barley....	191,609	33.68	6,433,919
Flax.....	20,978	15.	314,670
Rye.....	2,707	23.	62,261

#### Hay.

Native hay ... .. 1.8 tons per acre.  
Cultivated grasses 2. " "  
Summerfallow ... .. 559,505 acres.  
Breaking ... .. 149,305 "

#### Rainfall

April ... .. .89 inches.  
May ... .. .37 "  
June ... .. .6.73 "  
July ... .. .2.62 "

Total for four months 10.61 inches.

It is to be hoped there will be no occasion for again referring to the labor question, but just a few words in passing reference to the events of the past week which will remain long with many of both the excursionists and the officials who had charge of the work of locating them.

As the later excursions began to arrive it was apparent that there was a temporary glut in the labor market, and that there might be a delay of a few days until the com-

mencement of threshing before all could be placed in employment. Men out of work are easily dispirited, and many who reached here without money and without friends endured unaccustomed hardships that led to more or less sickness. The result was a great deal of discontent and grumbling among the late arrivals, to cope with which required great tact and energy on the part of officials. Gradually the men have been moved from congested centres, such as Winnipeg, Brandon, Deloraine, Moosejaw and Estavan to points where they were required. A few grumblers returned to the East, of whom the country is well rid. All who through illness or other reasonable cause wished to return were freely assisted by the Government and the C. P. R. The number who returned is exceedingly small in proportion to those who remained, but what they lack in numbers they endeavor to make up in noise. Mr. Hugh McKellar, Chief Clerk of the Department of Agriculture, deserves great credit for his untiring and well directed efforts to meet these most remarkable and unusual conditions.

Dairy produce has improved slightly since last week. Creamery men are still holding on for better prices, but purchasers do not seem very eager. Prices in such dealings as have been done remain at 16 to 16½c., the largest transaction of the week being at the latter figure. It is said that the British Columbia jobbers are sending a buyer here which may have a stimulating effect. Dairy butter remains the same as last week, 19 to 12c. for

average lots. First quality and selected, of course, brings considerably better figures. There has been considerable discussion in trade circles as to the probable effect of the new enterprise, soon to be inaugurated here, for the renovation of low grade dairy butter. This is a local trade though well known in the States. There is not much doubt that any outlet will be welcomed which will dispose of the cheap "stuff," but when this is put through a process that enables it to be placed in competition with higher grades the benefit is dubious. Cheese factories are also holding their output, although the market has gone up ¼c. this week. There has been little dealing, prices firm at 7½c.

The export of grass fed cattle for the week ended August 17th, amounted to over 1,500 head. Prices remained the same as a week ago.

Business generally is looking up, and everyone is preparing for an unusually heavy winter's trade.

# Canadian Food Products in Great Britain

## Notes Gathered from a Recent Visit to the United Kingdom

By Professor J. W. Robertson

Dominion Commissioner of Agriculture and Dairying

The export commerce of the country in most of the farm products is increasing at a rapid rate. The following statement of the value of the exports of some of the farm products of Canada during the years 1890 and 1900, shows the growth in that short period of ten years, and indicates somewhat of the great possibility for further extension of this trade.

Value of some Canadian farm products exported in years 1890 and 1900. (Years ending June 30.)

	1890	1900
	Dollars.	Dollars.
Wheat.....	388,861	11,095,488
Flour.....	521,383	2,791,885
Oats.....	256,156	2,143,170
Oatmeal.....	254,657	474,991
Pease.....	1,884,912	2,145,471
Cattle.....	6,949,417	9,080,776
Cheese.....	9,372,212	19,856,324
Butter.....	340,131	5,122,156
Pork, bacon and hams	645,360	12,803,034
Sheep.....	1,274,347	1,894,012
Eggs.....	1,795,214	1,457,902
Apples.....	997,922	2,789,125
<b>Totals.....</b>	<b>24,680,572</b>	<b>72,554,343</b>

country to which we send our goods that is not filled up most of the time with a second and third rate grade of products.

To extend the markets profitably it is important to meet the actual needs and preferences among the best paying of our present and possible customers. With a view to learning further how markets in the United

Value of products of the same sort imported into the United Kingdom from all countries in year 1900. (Year ending December 31.)

	1900
	Dollars.
Wheat.....	113,461,215
Flour.....	49,098,383
Oats.....	25,448,947
Oatmeal.....	2,545,498
Pease.....	3,791,470
Cattle.....	43,798,263
Cheese.....	33,232,111
Butter.....	84,809,114
Pork, bacon and hams	85,007,091
Sheep.....	2,995,207
Eggs.....	26,274,257
Apples.....	5,951,833
<b>Total.....</b>	<b>476,382,389</b>

The president and other members of the Wholesale Provision Trade Association of Manchester and District, stated at a meeting there that Canadian butter had made substantial gains in the market of Manchester; and whereas it used to be a long way behind finest qualities of Danish and Irish creameries, it was running the latter very hard for second place, and if the rate of improvement was kept up, would be quite abreast of the Danish.

### COLD STORAGE AT CREAMERIES.

One of the factors which have been most helpful in bringing about this improvement in the Canadian butter trade, has been the more general use of cold storage to preserve the quality of butter at the creameries and during its transportation. Over 400 creameries have had these put in according to plans supplied by the Department. The bonus that has been given to owners of creameries for putting in these cold storage rooms is to be continued for three years. It has been a bonus of \$50 for the first year the building is put up and kept in use, and \$25 for the second year it is kept in use, and \$25 for the third year it is kept in use according to regulations. The conditions were (1) that the construction must be such as was satisfactory to the Department; (2) that the cold storage must be kept in use, and a record of the temperature must be furnished to the Department monthly; and (3) that there must be 2,000 pounds of butter made per month.

We need better buildings for the creameries, very much better buildings in their construction, in their drainage appointments and in their equipment.

### COLD STORAGE ON RAILWAYS.

Another cause of improvement and increase in our butter trade was the starting of a cold storage service on railways. Last year refrigerator cars were running from no less than forty-three starting points to Montreal; thirty-seven of these ran once a week and six ran fortnightly. Any shipper could send his butter in the refrigerator car at the usual "less than carload rate." The Department made up any deficit between the guarantee to the railway company and the earnings of the car. The guarantee was that the car on every trip would earn two-thirds of the car-load rate from the starting point to Montreal. This has been an exceedingly valuable part of our cold storage work. Any one who had only ten or twenty packages of butter could get his butter carried in the refrigerator car at the usual less than carload rates on stated days every week. At first the cold stor-

The market of markets to which most of our products can go is the United Kingdom. There is much more prospect for extension by taking a larger share of that market, and getting a better place in that market than by trying to open up new markets in countries to which we do not send now; but at the same time I do not think it desirable or necessary that these other new openings should be neglected. Although it may be some years before these new markets are worth much, by beginning now we may make sure of getting a good share of them when the supply of and demand for our products become greater. The new markets which are opening up and which are the best worth cultivating, in this manner at present, are South Africa, China, Japan, the West Indies and part of South America. These countries produce largely of things we want, and we produce largely of things they import and cannot produce themselves. It is for us to enter into competition with other countries and see whether by the excellence of our goods, and by our way of doing business, we cannot get an increased share of trade with them in their markets.

### MEANS TOWARD EXTENSION.

The improvement of the quality of the products towards superior excellence seems to be the first step in the direction of extension of markets. In all markets I find a glut of inferior products of all sorts. I do not know a single market in Great Britain, the United States, or any other

Kingdom could be most successfully supplied with Canadian farm products, the Honorable Sydney Fisher, Minister of Agriculture, and I welcomed the opportunity of meeting importers of Canadian products, as well as wholesale distributors and retail merchants at several of the large cities in England and Scotland. Among places which were visited in this connection were London, Liverpool, Manchester, Bristol, Cardiff and Glasgow.

On the whole, we found favorable recognition of the improvements in the quality and in the packing of Canadian food products. The most marked instances of progress are in the butter trade and in the bacon trade.

### THE EXPORT BUTTER TRADE.

The growth of the export butter trade has been in one sense phenomenal, but not wonderful when one thinks of the possibilities before the people of this country. In 1890 the export butter trade of this country was \$340,131, and for the year ending June, 1900, it was \$5,122,156; that is fifteen times more butter was exported in the last fiscal year than was exported in 1890. There was a falling off since June of 1900, so that the exports up to June of the current fiscal year will not be so large. That was brought about by the comparatively high prices for cheese last summer; many factories equipped for making both butter and cheese kept on making cheese instead of butter. There has been a marked increase in the exportation of butter this season.

age service on railways and steamships was intended almost exclusively for butter, as that was the product that needed it most. There are few other things in large enough supply to require it on the steamships. During the last few years there has been a demand and need for enlargement of the cold storage service for other classes of products.

#### THE BACON TRADE

I found also very notable recognition of the quality of Canadian bacon and hams. This is one of the businesses in Canada in which there has been brought to its extension and development, the commercial talent of capable managers in large packing houses. That has been of great use to us in the bacon industry. The industrial skill of trained workmen, labor-saving machinery, and scientific management of curing rooms have been combined. The old notion that the phase of the moon had an influence in the curing of meats has given place to the weighing scales, a clock and a thermometer, all for the guidance of intelligent workmen. The losses which were sustained have pushed superstitions out of practice in the pork-packing business. The profits to be made are calling in intelligence and scientific methods. Humanity is obedient to the lessons of material profits. The growth in this one department of our agricultural trade has been marvellous, and still not so marvellous in the light of the growth of the whole trade in our products. In 1890 the value of the pork, bacon and hams exported from Canada was only a little over half a million dollars (\$453,360), and the value of the exports in 1900 was \$12,803,034. That is something like twenty times more exported, and a very much better place in the markets of Great Britain.

#### THE CHEESE TRADE.

In 1890, the value of our exports was a little over \$9,000,000 (\$9,372,212); and a large number of men at that time predicted that our cheese trade was as big as it should be or as it could be. Again I venture to say here that a good many dairymen, particularly in the Province of Ontario, were not well pleased with the endeavors I made in those days for the establishment and extension of our cheese trade in the other provinces, as they were led to suppose that by so doing the cheese trade would be stolen from Ontario. The value of the exports of cheese from Canada last year was \$19,856,324, a gain of considerably over \$10,000,000 in these ten years, and cheese were sold in Ontario last year on the average for higher prices than in any year I know of for the last 10 years. If we meet the market in a business-like way I think we cannot over-produce in this industry; not yet, because I believe the consuming capacity of the British markets in many of these things has not been reached. While the cheese trade has been growing, it has not been getting into quite as satisfactory a state as some of us would like to see it.

There is need for great improvement in the curing rooms in order that the cheese may be cured at a temperature which shall be continuously under 65 degrees, Fahrenheit. When such curing rooms are provided it will be practicable to ship to England some of the soft makes of cheese which are growing in favor there. At a wholesale warehouse in Manchester, I observed Lancashire cheese selling at sixty shillings per hundred weight, while finest Canadian were fetching only from 47 to 48 shillings, the difference being equal to about two and three-quarter cents per pound.

With the knowledge we now have of the various economical means of securing cool storage for curing and cool conditions during transportation, there is no reason why Canadians should not enter this new field in the cheese market. The question is not one of making softer cheddar cheese, but one of making a soft cheese of a quality of the Lancashire, the Cheshire or the Dunlop varieties.

#### COLD STORAGE ON SHIP BOARD.

By direction of the Honorable the Minister of Agriculture, I have been in negotiation with the steamship people, and they say they are willing now to do what can be done to improve the ventilation of the holds and other parts of the steamers and to provide for the circulation of cooled air. Ventilators of the ordinary kind through which air can pass are not sufficient, for often the air is blowing with the ship; and even when the cowl-tops are turned the right way the air does not always pass through, and when it does it is warm air. It is important not only to have ventilators but to have forced circulation of air and of cooled air at that.

I suppose more than half of the cheese handled at Montreal are placed in cold or cool storage in the warehouses there, and go from them to the steamships. On the other hand the cheese shipped on through bills of lading are often delivered from heated cars on the wharf and put almost directly on board the steamships. All that is exceedingly bad for the trade. By putting in refrigerating machinery with the necessary devices for cooling the air and circulating it through the places where cheese are stowed, cheese could be cooled to 60 degrees or under. That would give them a bright, clean appearance when they were delivered. They would fetch better prices and put the trade on a more satisfactory basis for everybody,—the producers, the exporters, the carrying companies, the importers, the retail merchants and the consumers.

As a result of our interviews with the owners and agents of steamships in Great Britain, a number of steamers are being fitted up this season with refrigerating machinery to cool the air and to circulate it through the places where cheese and apples are to be carried. The first steamer fitted in this way, the Hurona, of the Thomson line, left Montreal on Sunday, the 18th of August, thoroughly equipped with a refrigerating plant, and with fans to blow the cooled air

through the 'tween decks where cheese and apples will be carried. This is all in addition to the cold storage on steamships which has been adequate for the safe carriage of butter since 1896.

#### FOR APPLES ALSO.

The improvement will be applicable to apples also. I may mention that the temperature of the package itself containing either cheese or apples is often much higher than that of the surrounding air on the wharf. On one occasion when I was in Montreal, the shore captain of one of the lines to whom I was talking about the temperature of the holds, said to me, "Come down and I will show you a hold where the temperature is only 65 degrees." I pointed out that when it was filled the temperature would quickly rise to the temperature of the cargo put in, and therefore ventilation and circulation of the air would be needed. On one occasion one of our agents at Montreal reported that while the temperature on the wharf, when one of the steamers was being loaded, was only 55 degrees, he found it to be 85 degrees inside a barrel of apples then unloaded from a railway car and going aboard the steamer. Packages like that coming out of heated cars would raise the temperature in the steamer to 80 degrees, 85 degrees or even 90 degrees, even though the temperature before they were put in was only 55 degrees, and so the stuff would be ruined. Moreover, apples and cheese when at such high temperatures rapidly generate heat by ripening or curing, and that hastens the deterioration. There is need for apparatus on every steamship whereby the ventilation and the temperature of places where cheese and apples are stowed can be properly controlled, particularly during the first 48 hours after the steamships are loaded. Circulation of cooled air during the whole voyage would cause the cargo to be delivered with very much better appearance. As one result of our visit to England this season, nearly all the steamships in the Canadian trade will be fitted with fans for the circulation of air, and as I have already mentioned, a number of them are being equipped with refrigerating plants to cool the air before it is circulated.

#### FLOUR AND WHEAT AND OTHER PRODUCTS

I found also that Canadian wheat and flour had made notable gains in the markets of the United Kingdom. The exports of these two Canadian products in 1900 were sixteen times greater than they were ten years ago. Time would fail me and space in your journal would not permit me to give particulars regarding what I learned in conference with the importers of apples, the importers of eggs, the importers of cattle, the importers of horses and the importers of hay.

#### AGENTS AT POINTS IN CANADA AND UNITED KINGDOM.

Four agents of the Department are employed at the ports in Great Bri-

tain to observe the condition in which the Canadian cargo is discharged from the steamships, and to watch the unloading and the handling of it from the steamers to the warehouses. Our Department has also several men at Montreal observing the loading of steamships there. We

for an export trade of \$200,000,000 of food products in the next ten years, even without any material increase in the population occupied in agriculture.

IMPROVEMENTS OF SCHOOLS IN RURAL DISTRICTS  
Unquestionably this is one

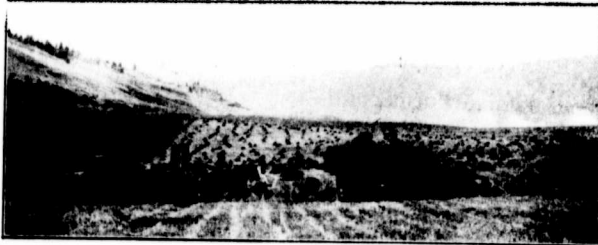
lessons and training to the children and teachers.

If we in Canada are to keep pace with the people in other lands, it is evident that very real improvements in the elementary schools in country districts must be effected. I would suggest for the thoughtful consideration of our readers such matters as (1) the extension of Nature Studies, and the introduction of Manual Training in simple forms into the country schools, and (2) the establishment of evening continuation classes with special reference to instruction in Agriculture, Horticulture and Domestic Science. With all due deference to others who have given the matter much thought, I hold that the elementary day school is not the place in which to teach agriculture, or even the so-called principles of agriculture, to children under 14 years of age. Evening continuation classes which could be attended by lads employed on the farms during the day, seem to be the means of meeting this need.

It appears desirable, also, in some localities that several weak country schools might be consolidated into one which would be well appointed and efficient. The small population, the want of funds and the isolation of school authorities are favorable to letting educational matters drift, whereas a consolidated and strongly supported school would be a powerful influence in pushing forward, lifting up, and leading out the intellectual, agricultural and industrial life of the whole population.

I learned that short courses were being provided this summer at different centres in England, to train teachers already engaged in rural schools in the better methods of carrying on their work, and to give them some acquaintance with nature studies, manual training and other forms of practical instruction.

It would not appear difficult to arrange for such an enlargement of short



A British Columbia Farm Scene

are thus collecting a body of information exceedingly useful for the guidance of the Department in following up a line of action to prevent damage to Canadian products during transportation. We have simply used moral suasion and the ordinary commercial methods of saying, "We will publish the facts if improvements are not made to prevent and avoid damage." Some people have asked why we did not seek stringent legislation; but I think that this is a more excellent way—the way of encouraging co-operation by all concerned, and showing the commercial advantage that will accrue. Thus we get the sympathy, support and co-operation of the steamship companies and railways, instead of having them fighting with the Department and the farmers.

#### POSSIBLE INCREASES.

I have no occasion to say much regarding the transportation facilities so far as rates are concerned. As a rule we do not suffer from higher rates on food products than are paid by producers and shippers in other countries. However, from the deterioration of products and the damage to packages during the transit, we were beginning to suffer seriously. By securing perfectly safe transportation facilities for these four lines—cheese, apples, eggs, poultry and dressed meat, I think that in ten years we shall have not merely as much of an increase in the export trade of food products as marked the last ten years, viz., from \$24,000,000 to \$72,000,000, but that we may have an export trade which will have grown at the same rate and therefore have touched the \$200,000,000 mark by 1910. I know I said ten years ago that I would, if I lived for ten years, see the cheese exports of Canada worth \$20,000,000. A great many people did not agree with me at that time because they supposed I made the statement rashly; but I have been over Canada many times, and have been in close touch with those who are engaged in the production and marketing of these commodities in all the different provinces. I do not see why we should not aim

of the most important public questions in Canada to-day. In our educational progress during the past twenty years, not very much has been done for boys and girls who attend only the country schools. Leading educationists in our own country are among the foremost to lament the fact that such education as is given does not prepare the children particularly for a happy and capable life on farms and in the country generally.

I had the pleasure of opportunities to look into the improvements which are being effected in a few of the elementary schools in rural districts in England.

At some of these schools in England, I observed the happy and effective use of school gardens as a means to supplement books, oral instruction and other devices for imparting and nourishing ideas and a love of labor and study. I learned, also, that evening continuation classes were being started in the rural



Shipping Ontario Fruit

districts for the purpose of giving educational help to boys and girls from fifteen to eighteen years of age. Travelling instructors are also being employed by some of the County Councils. These, in a few instances, visit rural schools and give special

courses for teachers in Canada, in order that some experiments might be tried and some real knowledge acquired as to how education could be advanced in such a way as (1) to increase the intelligence of the farming population in regard to their own

life, surroundings and business, (2) to develop practical ability in the children at the earliest desirable age, and (3) to bring about a desire and capacity for co-operation.

These would be genuine improvements in education in rural schools; and after observing the obvious benefits which somewhat similar reforms have brought to the children in va-

rious localities in England, I am hopeful that we Canadians will not fail to follow in their footsteps, until we are wise enough, wealthy enough, and courageous enough to come out abreast and strive nobly for the prize of the highest calling of humanity—leadership in the education of the young.

## Live Stock Conditions in Great Britain

### Some Important Lessons for the Canadian Farmer and Breeder

By F. W. Hodson

Dominion Live Stock Commissioner

On May 18th I left Montreal on board the Allan liner, Tunisian, and on the return trip I left Liverpool July 25th on the S. S. Parisian, also of the Allan line. The passage going and coming was most enjoyable. We encountered no rough weather and going we saw no ice, but on our return we saw several icebergs and a good deal of floating ice. I have never seen a more magnificent sight than that presented by a number of large icebergs, some quite close, some far away. The day was clear and the icebergs reflected the light and looked extremely white and beautiful. Here I would like to say that the directors of the Allan line and the officers on board each of their vessels seem to vie with each other in making the passage enjoyable. Everything was done that could be done to make the trip comfortable and delightful. Those who were not sea-sick, and no one really had any business to be so, put in an exceedingly pleasant time crossing the Atlantic. To some, the passage of nine days was all too short.

My object in visiting Britain was to inspect the farms and live stock, especially the homes and herds of many of the leading breeders of the various sorts, in England and Scotland, as well as to study the conditions and management of the Agricultural Exhibitions.

I attended the Royal Agricultural Show, which was this year held at Cardiff, the Royal Counties Show, at Weymouth; the Highland Agricultural Society's Show, at Inverness, and the Leicestershire County Show, as well as some others of less importance.

All the principal exhibitions held in Great Britain are itinerant and are held under canvas. Each of them follows a prescribed circuit, and thus the show is taken periodically to the people of each district. The stalls are made of lumber which is cut as light as possible, but all the roofing is of canvas stretched as in the case of a tent. After the exhibition is over the lumber is sold by auction. Usually there is more or less of a loss between the buying and selling prices, but I understand that this loss is sometimes very insignificant and never heavy. The offices, the board-room, and a few of the smaller, yet im-

portant buildings, are made in sections, put together with screws and bolts, and are easily taken down and transported from point to point.

British exhibitions are purely agricultural and commercial. There is no attempt made to provide attractions; what amusements there are are of a practical nature. The people take a very great interest in the exhibitions and attend in large numbers. The gate receipts are graduated: The first and second day of a five-day exhibition, the charge for admission is 5s., the next two days it is 2s. 6d., and the last day 1s.; in an exhibition of two days, the admission the first day is usually 5s., and the second day 2s. 6d.

Again referring to the attendance, a pleasing feature is the large number of ladies who are present. They do not come alone to be seen but to see and study conditions. British women, whether English, Scotch or Irish, are frequently very good judges of live stock and are fond of animals. Most of them know a horse and a dog very well and many of them are expert judges of cattle, sheep and swine. About the stock pens and the judging rings, may be seen at all times, both young, middle aged, and old ladies, who freely criticize the qualities and merits of each animal as it comes before them. While it is true that the British women love animals and spend a certain portion of their time examining them and making themselves acquainted with them, they do not in any way lose their lady-like demeanor. There are no more accomplished, lady-like or domestic women in the world than are to be found among the British people; in fact, the rank and file are not only well educated but are cultured.

It would be a very great advantage to Canadian agriculture and a stimulant to Canadian progress, if both the men and women of Canada, whether they reside in city, town or country, would take more interest in agriculture and make themselves more familiar with its needs and conditions.

#### MORSES.

The horses of Great Britain, whether heavy draft, medium or light, are generally of good quality. It is true there are some poor animals

here and there, but they are not common. The reason for this is that great care is taken in breeding and feeding, and the animals are not so frequently over-worked as they are in America.

In London, Glasgow and Liverpool a careful observer can form a pretty accurate estimate of the quality of the British horses, and the method of caring for and working them. In London and Liverpool Shire horses are generally used for dray purposes, and a finer, stronger, sounder lot of heavy horses it is very difficult to find. The dray horses of Britain as compared with those of Canada and the United States are generally larger and carry more flesh. In Glasgow those used are chiefly Clydesdales, and are not generally as large as those in Liverpool, but from a Canadian's point of view are of a better quality, especially in the feet and legs, but a remarkable feature of the dray horse in London and Liverpool is that a lame one, or one bad in the feet and legs, is seldom seen. This condition will cause one to doubt whether the longish pastern and the hard, flat bone are really as essential as we Canadians and Scotchmen think they are. The Shire horses, while larger than the Clydesdales, are still good walkers, but only good walkers. They are not as active on their feet as the Clydesdales. The latter now in Edinburgh and Glasgow are a good class, but they are not as even in quality as the Shires found in the large English cities or boroughs.

The next horse in size is the omnibus or tram horse. He should weigh from 1250 to 1500 pounds, and must have good feet and legs, be active and a good walker, and capable of trotting off with a heavy load. These horses closely resemble the Clydesdale grades to be found all over Ontario, and are what are known here as general purpose horses. The next horse in point of size is the cab horse. He must be smaller and finer than the omnibus horse. A compact, active animal, weighing about 1100 pounds, is the most suitable for this work. The next type very generally used in the cities, towns and country is a horse lighter than the cab horse and better bred. These animals are driven in two-wheelers known as hansoms, a large number of which are used in every city, town and borough in Great Britain. The next are the cob, the pony and the polo pony.

There is a large and ever-increasing demand for a first-class dray horse. If he is strong and of good quality, he is worth from £70 to £100. The general price paid for the omnibus horse is from £30 to £40; sometimes as much as £50. The cab horses are worth about £30, and the horses used in the two-wheelers from £30 to £45. A good pony will sell for from £25 to £50, according to his quality, and a good well-broken polo pony will always bring a large figure, sometimes from £80 to £100 and upwards.

There is room in England for all the horses Canada can breed and export, but in order to make this busi-



ness profitable and establish a growing market, nothing but first-class specimens must be sent over. Heretofore, most of the horses sent to Great Britain from Canada have been used as omnibus horses, and a number of excellent horses may be found in London that were bred here, but I am persuaded that the most profitable horse for the majority of Canadian farmers to raise is a very heavy, well-bred, well-broken dray horse. The motto in producing these horses should be, "The greatest quantity of the best quality." I do not think that farmers residing east of Regina will find any other type as profitable to breed; some may find it profitable to keep one good general purpose or driving mare, which may be bred to a large, thoroughbred horse, and thus produce a good cavalry or artillery horse. But it will be found that the average farmer will produce several light horses before he succeeds in breeding one that will bring him a remunerative price. I saw many good light horses in Britain that had been produced by crossing general purpose mares of good quality with strong, well-proportioned thoroughbreds. Whatever sort is produced let it be remembered that quality, careful handling and careful breaking are the first essentials.

## CATTLE.

The rank and file of the British cattle are of better quality than the general run in Canada. They have been more carefully bred and more liberally fed for generations. There is less crossing and re-crossing done there than here, and more care is taken in feeding and developing the cattle. The British farmer feeds his cattle as our best farmers do their pigs,—that is they feed in such a way as to produce a carcass showing a large proportion of lean meat. When the animal is killed the flesh is found to be nicely marbled and of excellent quality. Great Britain is deservedly celebrated for the quality of her beef, yet I am fully persuaded that Canada can produce just as good cattle as can be found in Great Britain. All we have to do is to use the same care and intelligence that we have developed during the last eight years in the breeding and feeding of hogs, suitable for the production of Wiltshire sides.

Although the British cattle, both beef and dairy breeds, are better than are found generally here, Canadian herds of pure bred cattle are on the whole, quite as good, or better than those to be found in Great Britain. We have in Canada and the United States more good Shorthorn, than I think are to be found in Great Britain. We have a large number of breeders of pure bred cattle who understand their business as well as any men to be found in Great Britain, and better than a great majority of British breeders of pure bred live stock. I found in a great many instances that the British breeder paid much less attention to the quality of the dam and sire, the grand-dam and grand-sire of his breeding bull than do the Canadian breeders. It is true that there are men in Great Britain such as Messrs. Duthie, Marr and

Willis, and a few others, who understand and practise just as good and careful methods as do our best men. But these are exceptions, and I have no hesitation in saying that it is safer for the Canadian farmer to buy his breeding bulls from reliable Canadian breeders than it is for him to import his breeding males from Great Britain. Where a farmer buys from a Canadian breeder he can see the dam and sire, frequently the grand-dam and grand-sire and the female ancestors of several generations of the animal he wishes to buy, but when ordered from Great Britain he simply has to take what is sent him and depend on another man's judgment, and that other man is chiefly interested in sending him an animal that will look well when he gets here. We have a few importers, who very carefully select the animals they import, and from these it is always safe to buy, but even in such cases I would advise the Canadian farmers to buy and pay more money for the animals these gentlemen breed than for those they import. While the men referred to, carefully select and pay very long prices for what they buy, there are many others who buy in Britain and import poor stock, inferior both in quality and breeding.

## SHEEP.

Great Britain is a sheep-growing country par excellence. The flocks are large and very good, and exceedingly well managed. The greatest care is exercised regarding the quality of the breeding males. Never before have I seen such large flocks of ewes of such uniformly good quality, but even here the British farmer could improve his methods by exercising more care in selecting his rams. The quality of those he now buys is good, but not always does he know what sort of ewe was the dam of the ram he has bought. This is a very important feature. British flocks are generally wintered outdoors; and therefore the mutton and wool should be produced cheaply. The usual custom with the sheep farmer is to carefully go over his flock each year, and to reject and send to the butcher all the aged ewes, yearling ewes, ewe lambs and rams that are not of the desired quality. This culling process is very carefully carried out.

No buyer is allowed to select from the breeding flock of any of the well-established breeders. The best of the stock is reserved for their own use, they sell the next best for breeding purposes, and the third grade goes to the butcher. This careful selection and grading is what has established and maintained the supremacy of the English flocks.

## PIGS.

Canadians, and in a large measure, American breeders have always been taught to look upon Britain as the producer of the best bacon hog in the world, if not the best hog for any purpose, and to me it was a great disappointment to find that the quality of the British pigs, as a general thing, is much inferior to those in Canada. The average Canadian

farmer knows more about pig breeding and is producing much better pigs than the average British farmer. Here and there are to be found sections that are producing very good bacon pigs, and here and there are pure bred herds of excellent quality, but the amount of first-class bacon produced in England is small in comparison to what it might be if more attention were paid to the type of bacon required. But if the Englishman is anything he is strongly prejudiced in favor of what he produces himself, and although a great deal of the British bacon is inferior to that produced in this country, still if he knows it is English he likes it better than anything he can buy elsewhere.

The principal breeds are the Yorkshires, (Large Whites, the Middle Whites and the Small Whites.) Among the first are found a great many good pigs. The Middle Whites are not a desirable breed. They are too thick and too fat. The Small Whites are what we call Suffolks. Very few of them are to be found, and both the Middle Whites and the Small Whites will cease to exist in a few years. In fact, they are now bred only by gentlemen who want something unlike that kept by the average farmer. The English-bred Berkshire may be put in the same class as the Middle Whites. They, too, are kept by gentlemen farmers, and although better pigs than the Middle Whites, still the British type is too thick and too fat to be of service in Canada. The Berkshires found in Canada are infinitely better than anything I saw in Great Britain. The Canadian breeder should use every effort to improve his Berkshires. They are an excellent breed for crossing purposes but they must not be allowed to become too thick. Next in number to the Yorkshire comes the Tamworth, and a very good pig he is. The Canadian Tamworth herds, are, as a rule, superior to those bred in Great Britain. There is another pig bred in some sections that is now attracting attention. These are known as the Large Blacks and are to be found in Cornwall, Essex, Kent and Cumberland. The specimens that I saw resembled the Yorkshires that were first imported to Canada, but are somewhat thicker and even coarser than they were. They are said to be excellent graziers and some of the pork establishments claim that they are just what they want. In color they are entirely black. Their ears are large and drooping. They ought to have many good qualities, for at the present time they are perhaps the ugliest pigs on earth.

## CANADIAN BACON.

Canadian hams and bacon are attracting a great deal of attention in Great Britain and form a large portion of the bacon that is imported. Denmark sends to England twice as much bacon as Canada does. Her No. 1 quality is one and one-half times the total sent from Canada. However, taking the quantity into consideration, Canadian ranks high in quality in the British market. A little of the Irish sells for a higher price than the average Canadian, or,

in fact, higher than any of the Canadian, but the amount of good stuff sent from Ireland is small in comparison to that which comes from Canada. The Wm. Davies Co., of Toronto, Ontario, deserve a great deal of credit for the position held by Canadian bacon. Although several other houses export a good deal of good stuff, still the Davies Co. are the pioneers in the trade. To-day they are doing more advertising in Great Britain than all other Canadian houses combined. Inside the omnibuses, and all about London, were to be seen attractive advertisements, advertising Davies' bacon. These advertisements must cost the Davies Co. a great deal of money each year, and must have an influence on the trade. They are a very progressive house and look well after the curing of their meats, and put them on the market in a very attractive condition. Such a course is of great importance to the producer, the greater the demand for Canadian bacon the better prices he will receive.

#### HOW TO INCREASE TRADE

The question will naturally arise: How can we increase our trade with the Mother Country?—and, how can we make that trade more profitable? These questions may be answered in a few words: "Send only the best goods to Great Britain, and put them before the consumers in perfect condition and in attractive manner." Farmers sometimes forget that they are greatly interested in this, and therefore leave all the details to the exporter and the middle man. He should see that these men do their work well, if not, he will be the ultimate loser.

We must finish our fat cattle better than we are finishing them at present. They are not as good as either the English or the United States bullock. Our exported sheep are very inferior to both British and United States stock. Our horses have not as good a name in the English market as they ought to have. Our bacon, our cheese, and our poultry occupy a very enviable position.

Every time we send a case of good goods to Great Britain, we create a demand for more. Every time we send a bad bullock, a bad sheep, or a bad case of goods of any sort we injure the trade.

The reason that pigs are so profitable in Canada to-day is that the Canadian bacon trade has been well and wisely handled.

#### A POINTER FOR CANADIANS.

A very noticeable feature in the management of English stock was the fact that large numbers of the same breed are to be found together. In certain districts of Scotland we find whole counties, in fact, whole districts given up to Ayrshires, in other districts we find the Highland cattle prevailing, and in other districts the Galloways. In sheep, we find the Black-Faced Mountain Sheep in one district, the Cheviots, and what are known as the Cross-Breds in another; a large territory in the north of England and south of Scotland is covered by Border Leicesters.

It would be difficult to find any other breed of sheep, except here and there a flock of Wensleydales, which are another type of Leicesters, and a very good sort. The Herefords, Devons, Welsh, Keries, Jerseys and Guerneys each have their respective districts, so also in the case of pigs. A breed is kept in a district best suited to its characteristics. This is

a feature that has not yet been considered by the Canadian farmer, but it is an important point, and one that sooner or later must receive attention.

Shorthorns and Shorthorn grades are more widely distributed than any other breed in Great Britain. They probably form seven-tenths of the cattle bred in the British Isles.

## Dominion Aids to Agriculture

In our Annual Autumn number of last year we gave a short resume of what the Federal Government does for agriculture. The special feature of this issue is a series of articles of an official character, showing what every province and territory in the Dominion is doing to make the farmers' calling more profitable. This number, therefore, would be somewhat incomplete without a brief reference to the leading features of the work carried on by the Department of Agriculture at Ottawa in the interests of agriculture.

The most important work carried on by the Department at Ottawa is, perhaps that connected with the extension of the markets for Canadian food products. What has been accomplished in this direction is well set forth by Prof. Robertson, elsewhere in this issue, in some notes on his recent visit to the United Kingdom. He accompanied the Minister of Agriculture on his trip, and as our readers are well aware a very great deal was accomplished in the way of interesting the consuming classes in Great Britain in Canada and her fine food products.

Next in order will follow the work performed in connection with proper facilities for conveying our food products to the consumer in the Old Land in the very best condition. It will be seen at a glance that such work is of the greatest importance. In these days of keen competition in the world's markets it is very necessary to success that every facility in the way of cold storage and ventilation on ocean steamships and refrigerator cars on railways should be provided. To turn out a first-class quality of product and have it injured on the way to the consumer is a very short-sighted policy, indeed. The transportation side of the work at Ottawa is, therefore, of prime importance.

The educational side of the work is also of importance. Since the origin of the Department of Agriculture, a very great deal has been accomplished in this direction. The work of the Dominion Experimental Farms and of the Dairy Commissioners' Department has been and is most potent for good in enabling farmers and dairymen to make their business more profitable. The value of such work cannot be estimated in dollars and cents. The improvement in quality, and the increase in quantity of farm and dairy products in all parts of the Dominion during the past decade, speak volumes for what has been accomplished along educational lines. The creation of a Live Stock De-

partment a couple of years ago, and the appointment of a special commissioner to devote his time to developing the live stock interests of the Dominion, marks another movement along educational lines that is having a very beneficial effect upon one of the most important industries of the country. A feature of this work that is of equal importance with the educational side of it, is that of organization. Already very much has been done in this direction, and several provinces of the Dominion are following the example of Ontario, and organizing live stock associations and Farmers' Institutes because of assistance rendered by the Dominion Live Stock Department. In this connection, the article by F. W. Hodson, elsewhere in this issue should be read with interest.

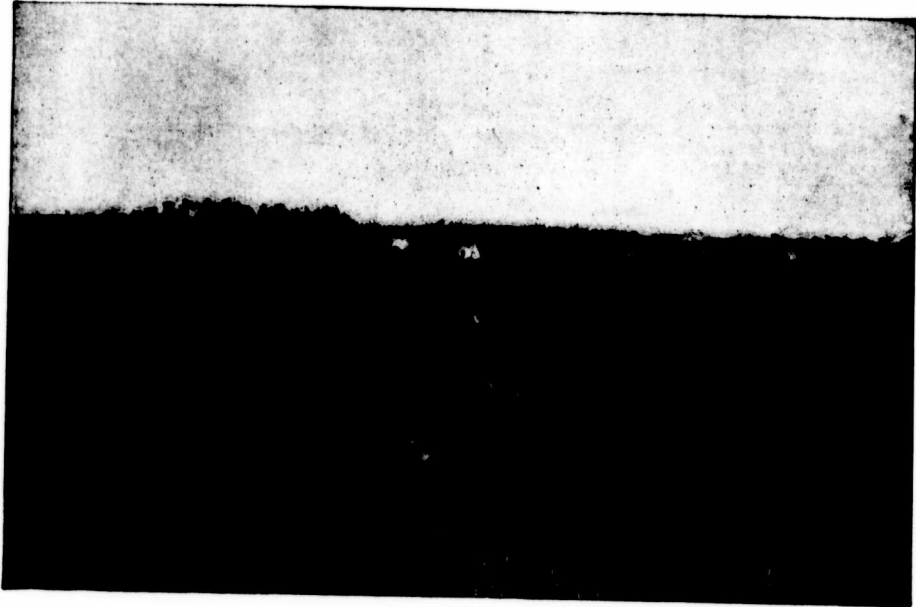
Other features of the Department of Agriculture's work that are of importance, are the administering of the quarantine system, the distribution of seed grains, and latterly, the shipments of farm products to South Africa. These, in addition to several minor branches, all administered in the interests of agriculture, lead one to conclude that the work performed at Ottawa is of vital importance to the country at large and helps to round out that accomplished in the interests of agriculture by the various local governments in the several provinces and territories of the Dominion.

#### To Inspect Fruit.

The Dominion Government, at the recommendation of Prof. Robertson, has appointed Mr. E. H. Wartman, of Kingston, inspector at Montreal, under the new fruit grading act. Mr. Wartman is reported to be very well qualified for this work, having made a special study for several years back of the packing and shipping of fruit. He will, however, have every opportunity for putting his knowledge of this important trade to good account, and it is hoped that his work will have the effect of very greatly improving the packing and shipping of Canadian fruits.

#### The Turkey Club.

A meeting of the Turkey Club of Canada will be held in the board-room of the Industrial Exhibition Association on Wednesday, Sept. 4th, at 2 p.m. The board-room is over the Secretary's office on the grounds. There should be a good attendance.



A Wheat Harvesting Scene in Ontario.

## What Ontario Does for Agriculture

By W. B. Varley, Department of Agriculture, Toronto

The Legislature of Ontario votes about \$230,000, annually to promote the agricultural interests of the Province. The amount expended does not however, tell us what the Province is doing for agriculture: in order to ascertain that, we must enquire what advantages are being gained by this expenditure. To see that the money is devoted to proper objects and expended in such a way as will give the best returns, is one of the chief functions of the department of government known as the Department of Agriculture.

First, let us enquire to what purposes is this large amount of money devoted. One-third of the amount namely, \$77,000, goes to the Agricultural and Horticultural Societies of the Province in the form of grants. Twenty-two thousand is granted to organizations of dairymen, stock-men horse-men and fruit growers. Thirty thousand is devoted to the maintenance of the Ontario Agricultural College; twenty thousand to the various departments of the Experimental Farm. The Farmers' Institute system costs \$9,900; three dairy schools, \$10,700; and thirteen Experimental Fruit Stations cost \$5,000. Twenty-one thousand dollars is granted for the printing and distribution of reports, the investigation of diseases in animals and crops, including the work of combatting the San Jose Scale, instruction in spraying, etc.

For sugar beet experiments and analysing, \$2,000; and small sums are devoted to miscellaneous services, such as bonuses to cold

storage warehouses, experimental fruit shipments, etc. The collection, compilation and printing of statistics relating to crops and live stock, and municipal statistics costs \$5,500, while \$13,700 is paid in salaries to the staff of the Department of Agriculture and Statistical Bureau.

Having gained a general idea of the objects on which the money voted to Agriculture is expended, we come to a consideration of the reasons for the existence of the various organizations and institutions, and of the work performed by them.

### ADVANTAGES OF ORGANIZED EFFORT.

In union there is strength in the agricultural world as well as in the industrial. In order to protect their interests and to promote the welfare of their respective industries, the various associations composed of Stockmen, Dairymen, Fruit-growers, and others have been organized. These Associations hold annual conventions at which addresses are delivered, papers read and discussions engaged in. This enables their members to keep in touch with each other, and act unitedly on all matters affecting their welfare. Instead of each man working apart from his fellow, by this means a common purpose has been set up, effort has been directed in the right channels, and desired results have been far more speedily secured than would have been possible in any other way. Take as an example what has been achieved by the Dairymen's Associations through their con-

ventions, and the labors of their instructors and inspectors, combined with the teaching afforded at the Government Schools of Dairying. To these agencies may be attributed in a large measure the enormous development of the dairying industry, the unrivalled excellence of Ontario cheese, and its capture of the English market.

### WORK OF THE LIVE STOCK ASSOCIATIONS.

The Live Stock Associations have done good work in the past. They have now been consolidated under a General Superintendent, and are becoming a more powerful influence than ever in the advancement of the various live stock industries. Under their auspices, the Provincial Winter Fair has been organized and is now permanently located at Guelph, with a suitable building for the purpose. At this show, the ideal in live stock, from the consumers' point of view rather than the breeders' is presented; the ideal bacon hog, which farmers must learn to produce if we are to retain our hold on the English bacon trade; the ideal bullock and sheep for the butcher's block; the ideal in poultry for table use, and the ideal cow for dairy purposes. Liberal prizes are offered, and the animals are judged on foot and in the carcass. Lectures are delivered by experts in feeding and handling to those in attendance, taking as object lessons the animals on exhibition, dead and alive. By means of this exhibition the breeder and feeder of live stock is kept in close touch with the varying

requirements of the market, and learns not only what he is expected to produce, but also how to produce it. The value of the work has been widely recognized, and the show has become very popular in consequence.

#### PUBLIC STOCK SALES

A system of sales by public auction of breeding stock has also been inaugurated by these Associations, and the business of supplying the requirements of other provinces, including Manitoba and the North-West, with breeding animals from Ontario, is being systematically developed. Orders from all parts of the Dominion are filled by the Superintendent, and car loads of stock are collected and shipped to the West to be disposed of. This often enables the small breeder to sell his surplus stock when he would not otherwise have facilities for doing so. The Stockmen have greatly benefited by the successful et-

ince to the number of about 200,000 copies annually.

#### FARMERS' INSTITUTES.

The Farmers' Institutes have a membership of more than 20,000. This organization is not devoted to any particular branch of Agriculture but embraces all. Each Institute receives a grant of \$25 from the Government supplemented by a similar grant from the municipality. Under the Institute system, the Department avails itself very extensively of the results of the experience of leading practical agriculturists. This enables the farmers, through the series of meetings held, to listen to addresses from the best informed men, and to compare notes and exchange ideas with them and with each other. In 1909, 715 meetings were held, with a total attendance of 139,000. At meetings of this kind a farmer may gain information which may be worth hundreds of dol-

lars. The Department has a special educational institution designed to meet the requirements of Ontario farmers' sons, who desire to follow agriculture as their calling, and provide them with an advanced course of instruction. It has become deservedly popular during the last few years; so much so, that increased accommodation has been found necessary. Its equipment in all departments has been greatly extended. It now has a teaching staff of over twenty persons, and ranks as the leading purely agricultural college on the continent. Students who take the course find an increased interest and pleasure, to say nothing of profit, in the farm, and leave the institution with an awakened zeal for their calling.

The Farm itself is conducted partly as an object lesson to the students, and partly as an Experiment Station. It has the following departments:—The Farm proper, the Dairy Department, the Horticultural Department,



Rural Ontario.

forts of these Associations, seconded by the Minister of Agriculture, to secure from the railway companies reduced rates of transportation on pure bred animals in Canada. Without this concession, the extension of the trade in live stock indicated above would have been impossible. The abrogation of the quarantine regulations between the United States and Canada was achieved under the same auspices.

But the Department has said to these Associations: The work you are doing is excellent, but you must go a step further, and make a still better return for the money you receive; you must make your lectures, discussions and your expert testimony available not only to your members but to all the farmers, who are all more or less interested in these topics. As a result, reports are sent to the Department, which publishes them and distributes them throughout the Prov-

inces to him; to say nothing of the value of the reports sent him by the Department, including those of the leading Associations. The report of the Superintendent of Institutes is one of the most interesting of the series, and is well illustrated. It alone is certainly well worth the small membership fee of twenty-five cents, which goes towards the maintenance of the Institute.

Women's Institutes are now being established as a branch of the system, 33 being already in existence, and holding regular monthly meetings. At these meetings the farmers' wives and daughters discuss better methods of housekeeping; matters pertaining to the feeding and marketing of poultry; how to make and market a superior quality of butter, etc., etc.

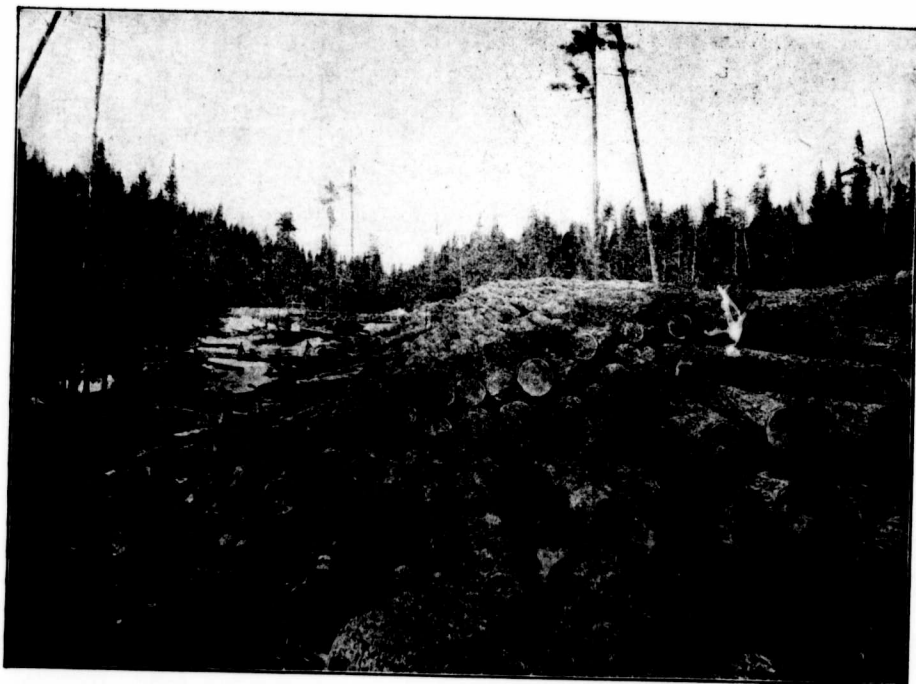
#### ONTARIO AGRICULTURAL COLLEGE.

The Ontario Agricultural College and Experimental Farm is an educa-

tion and the Poultry Department. About fifty acres are devoted to experiments with grains, etc.

#### INVESTIGATIONS AND EXPERIMENTS

The part played by the College in ascertaining exact or scientific information on agricultural matters is a most important one. Its professors, in addition to their teaching work, are required to conduct original investigations, the results of which are published. Among the subjects recently investigated may be mentioned the following:—Sugar Beet Investigations, Foul-brood in Bees, Lucerne or Alfalfa, Weeds of Ontario, Insect and Plant Diseases and their Treatment, the San Jose Scale and other Scale Insects, Grain Rusts, The Hessian Fly, Wheats for Bread-making, besides several bulletins on subjects connected with Dairying. The total number of copies of bulletins published by the Department in 1900, was 132,000.



Logs in New Ontario Ready to Float Down Stream to the Saw Mill.

This experimental work has resulted among other things in the introduction of several new and successful varieties of grain in Ontario. Among them may be mentioned the Siberian oat, and Mandscheuri barley. It has been calculated that, in one year alone, the increased wealth to the Province through the introduction of the Siberian oat was over a million dollars, or more than the entire institution at Guelph had cost in eighteen years! The gain to the Province through the introduction of Mandscheuri barley has been even greater.

Associated with the Experimental Department is the Ontario Experimental Union. Under its auspices about 3,000 farmers in Ontario have been individually interested in conducting experiments with cereals and fruits. The results are carefully reported upon and much useful knowledge is thus gained to the community; to say nothing of the good that comes to the experimenter through the training of his powers of observation and comparison. Through the Union, new and improved varieties of grains, roots, etc., are constantly being introduced.

A somewhat similar work is performed in the interest of fruit-growing by the thirteen Fruit Experiment Stations that have been established in the Province.

The work done by the Agricultural Societies through their annual fairs is well known. These fairs give the farmer an opportunity to examine and compare the work of others, acquaint him with the best types of production, and with the advances made in the mercantile world. It would be impossible to maintain them were it not for the liberal financial aid the Province supplies.

## Ontario Held for Settlement

By Thos. E. Southworth, Director of Colonization

Irregular in outline, widely varied in soil, wondrously rich in natural wealth and in the intelligence, industry and independence of its people is the Province of Ontario.

Of extent sufficient for a kingdom it has a boundary line approximating 6,000 miles, yet not more than 250 miles of this boundary runs in a straight line. With the exception of a line drawn due north from the head of Lake Temiskaming to James Bay a distance of 200 miles forming part of the boundary between Ontario and Quebec and 45 miles north from the northwest angle of the Lake of the Woods forming part of the line separating it from Manitoba, the boundary line of the Province is formed by water, immense stretches of which form natural highways of commerce.

From Montreal on the extreme east to Rat Portage on the Manitoba boundary on the west is a thousand miles, and the Canadian Pacific Railway, which approximately follows the shortest line between these two points may be said to describe the backbone or crest of the Province. North of this line Ontario extends about four hundred miles, the extreme point of land north, while Amherstburg in the County of Essex is about the same distance south. Thus Ontario extends from the shores of the great inland sea on the north to latitude 42, and is both north and south of the States of Maine, New Hampshire, Vermont, Minnesota, Wisconsin, North and

South Dakota, Montana, Idaho and Washington.

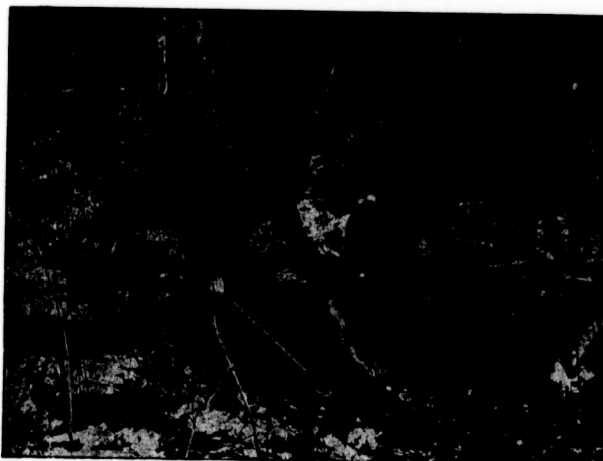
In a territory stretching so great a distance north, to south and east to west, great diversities of soil and climate may be naturally looked for and have been found.

The southern portion of the Province has for years been closely settled and the natural increase in the agricultural population has gone to build up Manitoba, the Canadian Northwest and the Western States, leaving the northern and western part of our own Province for the most part unoccupied except by the miner and lumberman. The reason of this is not far to seek.

In the early days settlement occurred along the shores of the St. Lawrence and Lakes Ontario and Erie and Huron. As the hardy pioneers pressed northward railways were built from time to time, a main trunk line from east to west and then others from the north to tap this until another great trunk line from east to west, the Canadian Pacific Railway, was built, extending through Ontario to the prairie lands of the west.

With the completion of this road land settlement in Ontario that had been pushing gradually but solidly north was temporarily but effectually checked, and there seems to me to have been three main causes contributing to this result.

In the first place, the authorities of the Province of Ontario recognizing the great advantage that must accrue



An Early Morning Shot in Northern Ontario,

to this Province as well as to the rest of the Dominion in the settlement and prosperity of Manitoba and the Northwest, made no effort to check the exodus of young farmers.

On the other hand the Dominion Government encouraged the movement westward for the same reason and in this was ably assisted by the Canadian Pacific Railway Company which aside from the necessity of having a western population to supply traffic to the road, had an immense area of lands granted by the Dominion Government as railway aid, which were offered to settlers on easy terms. To encourage this movement westward the railway company advanced money to settlers to pay their expenses en route and to establish them on railway lands.

The other great drawback to the movement of settlement northward in Ontario for a time was the forbidding character of the country through which the Canadian Pacific Railway ran in this Province. The line of greatest width of Ontario followed by the railway, is in reality the backbone of the Province and is an elevated plateau of Laurentian rocks in which the agricultural areas are comparatively small and scattered. A stranger travelling along the Canadian Pacific from Pembroke to Rat Portage will even yet marvel that farmers can exist in all that distance. It was no wonder, therefore, that the surplus farming population of Southern Ontario in search of new land should go west when they reached the rocky barrier traversed by the railway.

The existence of the Great Clay Plain to the north of this line was little known and if it had been, the uncertainty as to the climate rendered the problem of successful farming there very dubious. Most of the territory moreover did not belong for a certainty to the Province of Ontario till recent years, and little was known of it till the explorations of Mr. Barron, made by direction of the Ontario Government while the ownership of the territory was in dispute between the Provincial and Federal au-

thorities. True, the Hudson Bay Company had raised grain and vegetables around their posts in the far north for hundreds of years but settlement by white men was against their interests and they were careful to prevent such facts as these from becoming public property. The Rainy River Valley, the Wabigoon or Dryden tract and the Thunder Bay lands were all in this disputed territory.

Within the past few years, however, the nature of this vast north country has begun to be better understood. We now know that, speaking in general terms, the Province is divided into three sections, the rich and settled agricultural district of the South, the rugged Laurentian country of the centre, forming the watershed, and the unsettled but extremely rich agricultural area to the north that drains into Hudson Bay. By the adoption of the Forest Reserves policy the Government proposes that the middle section shall remain a permanent forest owned by the whole people whence shall come, perpetually, provincial re-

venues and timber supplies. Already a million and a half acres of virgin timber land in this section has been permanently withdrawn from sale and settlement and this can be extended from time to time so that the permanent forest of the Province will doubtless contain many millions of acres of land that will grow trees more profitably than other crops. Aside from the question of revenue and timber supplies, these Forest Reserves will have a good effect upon the adjacent agricultural sections in furnishing local markets for farm produce, and a local demand for labor at a time of the year when farmers are not always busy, and secure the perpetual flow of the streams whose sources are in this timber covered table land.

This condition is present in every one of the new districts now settling. The question is often asked concerning the various new settlements, "by what route do the settlers get their produce out to market?" when the highest markets in the country for farm produce is in these new districts, owing to the demands of the incoming settlers and the lumbermen and, in some sections, the mines operating in the vicinity.

The "Great Clay Claim" of the north, as it has been called, is at present unavailable for settlement purposes for want of railway connection with the south, except in what may be called its south eastern extremity where it extends south of the Height of Land to the head of Lake Temiskaming forming the now prosperous district of that name. This district is at present reached by rail and steamer, and already there are projected roads to tap the Great Clay Plain, the Nipissing and James Bay from North Bay, the Algoma Central from Sault Ste. Marie, the Thunder Bay, Nipigon and St. Joe from Port Arthur, the Manitoulin and North Shore from Wiarton and others.

As a railway only develops a farming country about twenty miles on either side, there will be business for all these roads when built. In traversing the forest country south of the Great Clay Plain, these roads



Pioneer Road-Making Through a Pulp-wood Forest, Temiskaming District.

# Agriculture in the Province of Quebec

By G. A. Gigault, ex-M.P., Deputy Minister of Agriculture

will develop traffic also, for this Laurentian table land is enormously rich in minerals besides the timber wealth, much of which will have to be taken out by rail. This same timber instead of being a drawback to the settlement of the land as was the case in Southern Ontario where it had to be burned up in the early days, is a great advantage to the settler as representing material that he can exchange for cash.

The Great Clay Plain is at present covered with a forest of pulp wood, and what this means to the settler if settlement is made solidly and not scattered, may be seen from the fact that the settlers in the Temiskaming District receive for their pulp wood \$2.25 to \$2.50 per cord hauled to the bank of the nearest stream.

Aside from the proof afforded by actual growing crops of grain and vegetables as far north as James Bay, the records of the meteorological service of the Dominion has shown the climate of this north country to be very little different from that in the rest of the Province. The days are somewhat longer, the rays of the sun more direct, which more than makes up in the growing and ripening of crops for any shortening of the summer season. The snow generally falls before the ground is frozen very deep and remains on until spring. Thus farmers are able to begin their spring's work as soon as the snow is off owing to the absence of frost in the ground.

It has been the aim of the Bureau of Colonization, under direction of the Commissioner of Crown Lands, Hon. Mr. Davis, to acquaint our own people with the merits of our own new lands for farming purposes and thanks largely to the co-operation of the Canadian press, this object is being reached. This land in Ontario cannot be settled so rapidly as the prairie country, owing to the difficulty in building wagon roads.

Main wagon roads are constructed by the Government in the new districts being settled, to enable settlers to reach their lands. It has been deemed advisable to employ the labor of settlers on these roads, rather than to import laborers, and consequently roads have not been built much in advance of settlement. It is perhaps possible that the Government could get more work done for the money by the contract system, but this would mean the employment of regular "navvies" to the exclusion of the regular settlers, and it is by no means certain that more, or better work would be done, for the settler is interested in getting as much work done on the roads as possible.

A very important factor, however, in this system of road building is that the money paid out for building roads is distributed among the settlers and furnishes them with a further source of income, in addition to their sales of timber, and thus helps in their successful establishment in their new home.

In no country under the sun are there better opportunities for a man with little capital to acquire a farm for himself than in New Ontario, and it is gratifying to know that many young farmers and others of Old Ontario are finding this out.

The Department of Agriculture in the Province of Quebec was established immediately after the formation of Confederation, under the title of Department of Agriculture and Public Works, its existence being recognized by an act of the Provincial Legislature, adopted in 1868, at the first session of the first parliament, 31 Vict., chap. 8. It was regularly organized by an act assented to on the 5th April, 1869 chap. 15, 32 Vict.

Its name was changed into that of the Department of Agriculture and Colonization by a law assented to on the 18th day of May, 1887, chap. vii. 50 Vict., which came into effect by a proclamation on the 8th day of May, 1888.

By a law assented to on the 9th day of January, 1897, chap. 22, Vict. 60, it became simply the Department of Agriculture, another department having been formed for colonization and mines.

The chief, or head of the department, had always been known as the Commissioner of Agriculture, but at last session (1901) his name has been changed into that of Minister of Agriculture.

## AGRICULTURAL SCHOOLS

The Province of Quebec has three agricultural schools: Oka, Sainte-Anne-de-la-Pocatière and Compton.

To each of these schools is annexed a butter and cheese factory, where, every year are to be found good cheese or butter makers. In 1892 the Provincial Government began to subsidize a school of domestic economy, previously established at Roberval, in the Lake-St.-John region, under the control of the Reverend Ursulines ladies. The course of domestic and rural economy given in this institution is as follows:

1. All the pupils, irrespective of age, are trained to be good housekeepers, especially in order and cleanliness. They are also instructed in the principal rules of the culinary art. In order to accustom them to regulate expenditure or receipts, they keep a detailed account of their expenses and of moneys received. The whole is submitted to the approbation of their families.

2. Each pupil mends and repairs her linen, and must know how to sew and knit before learning fancy work. The work room is open every day for at least three-quarters of an hour for the pupils who wish to learn carding, spinning, weaving, etc.

3. To all who are in a position to benefit thereby, two lessons are given weekly on the theory and practice of keeping a dairy and making butter and cheese for family use. Afterwards, lessons are given in agriculture, horticulture, poultry keeping, etc.

4. Thirty-seven young ladies follow-

ed these lessons in 1893, and this year their number is still larger. The school was destroyed by fire in January, 1897, and rebuilt during the same year with great improvements.

## THE DAIRY SCHOOL

In 1892 a dairy school was established at St. Hyacinthe, under the control of the Dairymen's Association of the province, the Government having given for that purpose a grant of \$10,000. The makers who have followed the courses of the school since its opening are:

Courses	Butter Makers	Cheese Makers	Total
1892-93	60	151	211
1893-94	98	176	268
1894-95	59	253	312
1895-96	102	172	274
1896-97	147	155	302
1897-98	82	105	187
	548	1,009	1,557

In this school are also trained inspectors for cheese and butter syndicates; the latter in virtue of article, 1753, 54 Vict., ch. 20, sect. 1, which reads as follows: "The Association (Dairymen's), with the view of obtaining more prompt and complete diffusion of the best methods to be adopted for the production of milk, the manufacturing of dairy produce and in general the advancement of the dairy industry, may sub-divide the province into regional divisions, in which syndicates, composed of proprietors, of butter and cheese factories, and other like industries, may be established. The formation and working of such syndicates are governed by the regulations made by the said association and approved by the Lieutenant-Governor-in-Council, and such syndicates shall be under the direction and supervision of that association. To such syndicates the Lieutenant-Governor-in-Council may grant, out of the consolidated revenue fund, a subsidy equal to one-half of the expenses incurred for the service of inspection and instruction organized therein, including the salary of inspectors, their travelling and other expenses directly connected therewith, but not to exceed the sum of three hundred dollars for each syndicate."

The inspectors, including the inspector general, are appointed by the Lieutenant-Governor-in-Council, and are experts who hold certificates of competence from the Board of Examiners formed by the Dairymen's Association. For these syndicates, the association established regulations, which were approved by the Lieutenant-Governor on the 24th of January, 1891. Many syndicates were established. In 1900, there were forty-two in the province. These associations have greatly contributed towards bringing more uniformity into and improving the quality of our dairy products.

In 1882, a Dairymen's Association was formed for the province. It has done much useful work in the promotion and progress of the dairy industry. Every year a general meeting of its members takes place. Interesting and instructive lectures are then given, the report of which is often consulted with advantage by those interested in dairying. Since 1896 inclusively, the Provincial Department of Agriculture holds, during the summer, dairy competitions organized after the Danish system, in which silver and bronze medals, diplomas and money prizes are distributed according to merit. As soon as the makers have received a despatch or a letter to that effect, they forward by the next train or boat, a box of butter or cheese made by them for market. The cheese, or butter, must be shipped exactly as it was ready for exportation. Those whose butter, or cheese, is considered of 1st and 2nd quality receive prizes, as to the other exhibitors, they are informed by private letters of the defects in their products. The exhibits are examined by very experienced judges chosen from among the leading exporters and from the professors of the dairy school, they are also analyzed by a chemist. They are paid for by the Government according to market price, and the Government also pays for the freight. These competitions produce the very best results.

#### FRUIT CULTURE.

Fruits are cultivated in every region of the province. The Montreal district is renowned for its apples, and chiefly its Fameuses, which can not be excelled. The Quebec district produces most delicious plums. Two pomological and horticultural societies exist in the province. Their reports always contain most useful information on fruit culture. In 1898 the Government established in the province four fruit experimental stations, one of them being in the County of Gaspé, another in Chicoutimi. By means of these stations, the farmer obtains a thorough knowledge of the fruits that are adapted to the climate of the region where he lives. The results of the investigations and experiments of these stations will certainly develop fruit-growing and make more lucrative that important branch of our agriculture.

#### FARM COMPETITIONS

In 1890, a law was enacted establishing competitions of agricultural merit for the whole province. The farms of the competitors are visited by judges appointed by the Government. The distinctions conferred upon the successful competitors consist of:

1. A diploma and silver medal for the person who at the competition has obtained the degree of "distinguished merit."
  2. A diploma and bronze medal for the person who has obtained the degree of "great merit."
  3. A diploma for the person who has obtained the degree of "merit."
- "Distinguished merit" is granted to

the person who has obtained at the competition 85 out of 100 points allowed for perfect cultivation, "great merit" is granted to the person who has obtained 75 per cent. of the same points; and "merit" to the person who has obtained 65 per cent. The judges forward to the Minister of Agriculture a detailed report upon the farm and farming of each laureate. Such reports, published annually, are very instructive to the agricultural class. The number of laureates who have received silver medals were: 7 in 1890, 42 in 1891, 20 in 1892, 31 in 1893, 18 in 1894, 27 in 1895, 30 in 1896, 8 in 1897, 5 in 1900.

#### ROAD IMPROVEMENT

In 1896 the Government appointed J. A. Camirand, of Sherbrooke, as a special officer intrusted with the mission of improving public highways. He gave lectures on that subject in several municipalities and had roads improved by two road machines and a stone crusher, put at his disposal by the department. The Hon. Louis Beaubien, then Commissioner of Agriculture, also offered to every county municipality to pay one half of the first stone crusher's cost and



Compton Model Farm, Quebec.

of the first road machine which it would purchase for the improvement of its public highways. The Hon. F. M. Dechene, the present Minister, modified this policy by offering to each local municipality a grant equal to one-half of the price of the first road machine which it would acquire, to the extent of three municipalities in every county. A great many municipalities have availed themselves of his offer; many miles of public highways have been worked with the machines bought with the government grants, and it is hoped that before long, there will be a marked improvement in the making and maintenance of our roads.

In 1896 the Council of Public Instruction approved of a book entitled, "Agriculture in Schools in 41 lessons." This agricultural manual is now taught in many of the rural schools.

#### AGRICULTURAL SOCIETIES

The first agricultural society was established in 1789. It had H. E. Lord, of Dorchester, as Patron and President; Lieutenant-Governor Hope as Vice-President, and many leading men as directors. Only the first report of this society is in existence. It contains the remarks of some

members and the results of the experiments made by them. In 1900, there were in the province, 68 agricultural societies in operation with 15,599 members. The amount they spent for agricultural purposes during that year was \$81,131.85. According to law, every society should, once in every two years, hold an exhibition of agricultural produce, and organize alternately competitions in regard to the best cultivated farms. The intention of the Legislature was that the societies should devote as much money for farm and standing crop competitions as for exhibitions. Some of these associations comply with the spirit of the law and do a good deal towards improving agriculture, but, unfortunately, the majority hold only exhibitions and neglect the exercise of the most useful part of their powers. Competitions for standing crops or the best managed farms encourage the farmers to increase the fertility of their farms and to improve their cultural methods; improvement which has the most beneficial influence upon agriculture and consequently upon the production of the soil.

#### FARMERS' CLUBS.

In 1893, a law was enacted authorizing the formation of Farmers' Clubs and the payment of a grant to such associations. During the year 1900 there were 512 clubs in operation, with 39,822 members, and they spent for agricultural purposes \$81,431.85, including \$6,824.49 for the purchase of thoroughbred animals. Each club had seven directors. Their object is to promote improvement in agriculture and horticulture:

1. By holding meetings for discussion and for hearing lectures on subjects connected with the theory and practice of improved husbandry.
2. By promoting the circulation of agricultural papers.
3. By offering prizes for essays on questions of theoretical or practical agriculture.
4. By importing or otherwise procuring animals of superior breeds, new varieties of plants and grain, and seeds of the best kinds.
5. By organizing ploughing matches, competitions respecting standing crops and the best cultivated farms.
6. By procuring books, reviews and newspapers, treating of agricultural subjects for the use of their members.
7. By promoting and favoring experiments in farming, manure, and improved agricultural machinery and implements.

Many of these clubs have every year several meetings in order to hear lectures and discussions on agricultural subjects. They hold no exhibitions, but have organized many competitions respecting standing crops, chiefly for the purpose of encouraging the production of green fodder, roots and the use of fertilizers. Many experiments have been made with fertilizers, the use of lime, wood ashes, etc., and the publication of the results obtained has been useful to the whole agricultural class. At the same time as the farmers' clubs were established, the Journal of Agricul-



ture, published by the department, was enlarged and greatly improved. In 1892 the Journal had only 7,516 subscribers for both the French and English editions, and it now has 53,031 readers. Before the establishment of farmers' clubs, about one-third of the parishes or municipalities had no members of agricultural societies, or only a few members. To-day, we find a large number of members of agricultural associations in almost every municipality, while the Journal of Agriculture penetrates into every region of the province.

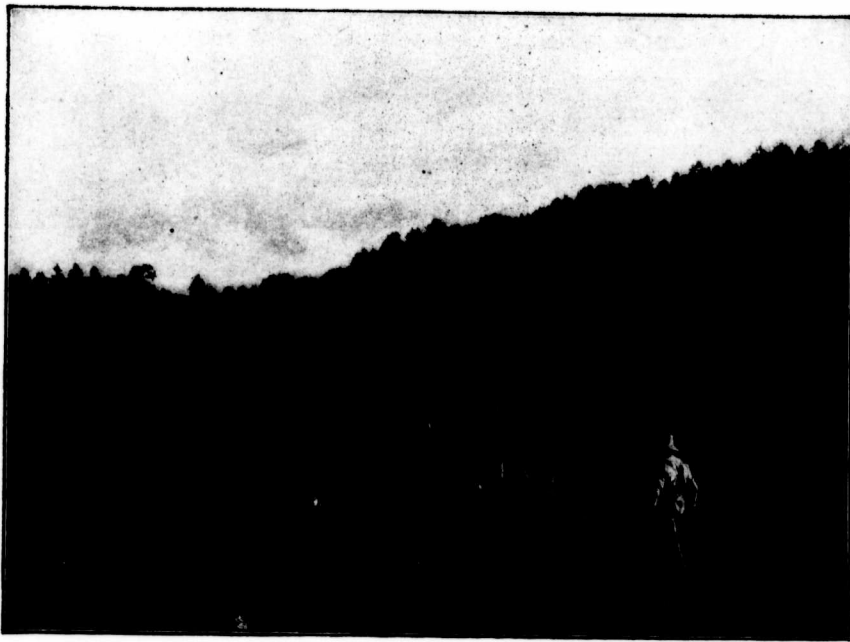
The lectures and discussions before farmers' clubs, the competitions and experiments organized by these associations, and the reading of the Journal of Agriculture by thousands of farmers, have led to a wide-spread diffusion of the theories and facts up-

Wheat.....	1,553,544	bushels
Barley.....	1,505,600	"
Oats.....	16,905,800	"
Peas.....	1,806,943	"
Buckwheat.....	2,009,448	"
Beans.....	79,078	"
Corn.....	790,685	"
Potatoes.....	15,024,644	"
Turnips and other roots.....	2,532,853	"
Flax Seed.....	27,647	"
Apples.....	1,034,139	"
Plums.....	60,513	"
Hay.....	2,243,435	tons
Maple Sugar.....	18,875,231	pounds
Honey.....	758,557	"
Hops.....	180,297	"
Tobacco.....	3,958,737	"
Home-made Butter.....	30,113,226	"
Home-made Cheese.....	4,260,941	"

The value of the Creamery Butter produced was \$555,932.00 and that of

Denmark and other European countries in order to collect information regarding the dairy industry abroad, the agricultural methods generally in vogue in the different European countries, and the best means to be adopted for the furtherance of the exportation of our products to the English market. Besides Denmark we visited Belgium, France, Ireland and England. In our report, published in the same year (1894) we stated the following conclusions:

1st. To develop our butter trade with England it is absolutely necessary that the vessels doing the service between that country and Canada be supplied with refrigerators. It is also necessary to ship the butter weekly, that it may arrive fresh and without that stale taste which relegates it to the last class.



Summer Fallowing. A Canadian Farm Scene.

on which are based agricultural improvements. That diffusion has produced most beneficial results which are visible everywhere. The agricultural production, and chiefly the production of milk, has largely increased; the farmers pay more attention to the maintenance and increase of the fertility of the soil, and there is a most satisfactory improvement in the methods of cultivation. According to statistics gathered by the Dairymen's Association, for 1898, there were in the province 337 creameries, 1,263 cheese factories, and 217 combined butter and cheese factories, while, according to the census, there were in 1890, only 111 creameries and 617 cheese factories.

QUEBEC PRODUCTS.

According to the last census (1891) the Province of Quebec produced:

the cheese made in factories \$2,362,595.

Since that date the production of butter and cheese has largely increased, if not doubled. In 1890, the Province had 549,544 milch cows, 730,286 sheep, 369,608 swine.

The swine industry is making great development and will add considerably to the revenue of the farming class. Fruit culture is becoming every year more and more important. This year the crop of wheat is much larger than usual, which is due to the increased fertility of the soil, dairying having largely contributed towards that result.

LESSONS FROM EUROPE.

In 1894, I might add here, Mr. J. D. Leclair, Superintendent of the St. Hyacinthe Dairy School, and myself, as Assistant-Commissioner of Agriculture, were sent by the Government to

2nd. The Provincial Dairy School should be enlarged and improved.

3rd. A competition in dairy products, organized after the Danish system, would aid in improving the methods of manufacturing these products.

4th. If we desire to increase our pork exports, we should try to procure hogs suitable to make bacon, that is to say, not too fat; to fatten the pigs when they are young, and to kill them when they do not weigh over two hundred pounds. This trade should be developed at the same time as that of butter, from which, moreover, it is inseparable.

5th. The poultry export trade is susceptible of development, and can be made remunerative to the raisers, provided the killing, dressing and packing are properly done.

6th. Our apples are in favour on the

English market, but if we wish to encourage the multiplication of our orchards and increase the production of the fruits, without overcrowding the local market, our nurserymen and the owners of the orchards should produce apples that can be shipped without being bruised, and that will keep a few months after having been picked; these apples should command attention by their quality and appearance.

7th. In England, they attach the greatest importance to the uniformity of the products put up for sale. This uniformity should exist in the case of our butter, cheese, apples and all our products.

8th. The schools for instruction in the Domestic Economy of the farm house must be greatly increased.

9th. An elementary treatise in agriculture should be published and taught in our primary schools.

10th. The establishment of agricultural lectures has done good service in our country and elsewhere to agriculture, and we must try to increase their efficiency.

Parochial Competition of Milch Cows.—Since 1898, the Department gives, each year, a special grant to the agricultural association that, in each county, offers the highest prizes

for competitions of milch cows in which the yield and percentage of fat and milk only are taken into consideration. Some agricultural societies and many farmers' clubs organize such competitions which are very popular and stimulate a rational selection of cows.

The cows are milked in the presence of the judges three times during two consecutive days, the two last milkings being alone reckoned in the competition. The Department keeps a register in which is inscribed the name, age, breed, colour and weight of every cow which in those competitions has given at least thirty pounds of milk a day.

#### IMPROVEMENT OF HORSE BREEDING.

Lately, the Council of Agriculture has adopted regulations giving the agricultural societies greater facilities for procuring funds for the improvement of horse breeding. It is hoped many societies will avail themselves of these regulations; they would thereby render a great service to the agricultural community.

#### AGRICULTURAL PRODUCTIONS.

For some years past the agricultural production of Canada has largely increased and the statistics gathered

by the Department of Agriculture, particularly as to the production of cheese and butter prove that the Province of Quebec has contributed to that increase as much if not more than any other province.

The exports by Canada of animals and their produce as well as of agricultural products, have been as follows for the years hereafter named:

	Value.
1890	\$37,915,925
1897	57,227,898
1899	69,696,915
1900	83,665,416

The excess of agricultural exports over exports of manufactures has amounts:—

in 1890 to	\$31,273,841
" 1897 "	47,705,884
" 1899 "	57,069,338
" 1900 "	69,411,129

These figures show the importance of agriculture in our midst and justify the generous efforts made to improve it. That the dissemination of agricultural knowledge has contributed to those satisfactory results there cannot be any doubt, because in agriculture as in any other arts, science enlightens the mind and increases the productive power of man.



A View at Kingsclear, York Co., N.B., showing St. John River and Island's.

## Agriculture in New Brunswick

By Thos. A. Peters, Deputy Commissioner of Agriculture

In writing upon this subject, in which a general idea of the agricultural situation of the Province is given, one must be particularly struck with the change which has taken place during the last few years. This change has been consummated, no doubt by the progressive spirit of a progressive people, coupled with the assistance given by the Local Government toward the development of all agricultural pursuits.

About three years ago a new portfolio was created by the Government, at which time this Province got her first Commissioner for Agriculture, and since that time an active interest has been taken toward the rapid development of our agricultural resources.

#### ASSISTANCE TO DAIRY WORK

In 1891, in order to encourage co-operative dairy work, assistance was offered to any one who would build and equip cheese factories and creameries, the former receiving \$150, the latter \$250. A dairy instructor was also sent to visit all sections of the Province with a view to encouraging and stimulating the work by trying to establish a uniform system of manufacturing, in order that the factories could export, when a sufficient quantity was made over the amount required for the local markets. The increase in the output from year to year of both cheese and butter has been very satisfactory, and now the

factories are making annually about two million pounds of cheese and half a million pounds of butter.

Three dairy superintendents have the work of inspecting and organizing dairy companies and the number of factories increasing each year.

#### LIVE STOCK INTEREST

The live stock interests are increasing in a very satisfactory manner, having frequently been stimulated by importations of thoroughbred animals of nearly every class. These animals are sold mostly to the Agricultural Societies, which now number fifty-nine. By disposing of the animals in this way every section of the Province is benefited. The only condition

imposed by the Government is that no animal shall be sold to go outside the Province, inside of three years, but each Society has the right to exchange with another.

**AGRICULTURAL SOCIETIES AND INSTITUTES UNITED.**

These Agricultural Societies have been doing good work in the sections where they are formed, and have been receiving from the Government an annual grant of from \$140 to \$200 each. A change, however, is just now being made, with a view of accomplishing still greater good. Since 1898, Farmers' Institutes have been under the direct control of the Department of Agriculture, which has borne the expense of obtaining speakers and paying the expense of sending them to the

ceive assistance equalling one-fifth of the cost of the plant. The result is that we now have nineteen mills running, which have greatly stimulated the growth of wheat. The following taken from the official report will give an idea of the leading crops with the averages per acre.

		average.
Hay	700,000 tons.	
Wheat	404,301 bus.,	18.8
Oats	5,281,690 "	29.5
Barley	120,222 "	23.7
Buckwheat	1,527,610 "	22.
Potatoes	4,797,799 "	126.
Turnips	1,950,424 "	275.

About 1,700,000 acres of land are now under crops, 1,000,000 under pasture and 500,000 under garden cultivation. There is still plenty of undeveloped land in the province, which can be had at one dollar per acre, 100

statement I have no doubt will be received with some incredulity by readers of The Farming World outside of Nova Scotia, and even in Nova Scotia itself there will be some readers, no doubt, who will pause for a moment and ask themselves the question if it is not going it pretty strong. A glance at the "occupation of the people" as given in the census returns for 1891, will show the relative proportions of the people engaged in these three important industries—

Farmers	34,563
Fishermen	14,478
Miners	5,660

In addition to those put down as farmers, which probably means, their owning and cultivating farms, there were 7,761 farm laborers and 18,787 farmers' sons, giving a total male population of those living on or by the farm of some 61,000 souls. It is estimated that there has been a large increase in the number of people engaged in mining in Nova Scotia since 1891, probably at the present time there are at least 10,000. Allowing for this increase, and not anticipating anything like a corresponding increase in our agricultural population there is still a wide disparity between the number of people engaged in farming and the people engaged in mining, and the same is true in regard to the people engaged in the fisheries. The value of our fisheries' export last year was in round numbers \$7,000,000 and the output of our mines, coal and gold principally, was estimated at \$16,000,000. This is a good record and the people of Nova Scotia are justified in taking much pride in the figures, but if there were any method of tabulating the value of the products of the farm they would be astonished to find how far they exceeded the above figures.

I find by reference to the census returns of 1891 that Nova Scotia owned that year 85,000 horses, 28,000 oxen, 142,000 milch cows, other horned cattle 151,000, sheep 331,000, swine 48,000. There were slaughtered that year 60,000 cattle, 152,000 sheep and 58,000 swine. Nova Scotia produced 9,000,000 pounds of butter and 600,000 pounds of cheese; of fine wool 717,000 pounds and coarse wool 355,000 pounds. It produced 1,951,660 bushels of apples and large quantities of plums, pears, cherries, grapes and small fruits. Oats were the principal grain crop of which there were 1,600,000 bushels; barley, buckwheat and wheat followed in the order named. Potatoes 3,113,000 bushels; turnips and other roots 1,500,000. Hay 655,000 tons.

The figures giving the lands occupied improved, under crop, in pasture, and woodland and forest, show that we have millions of acres and I may say from my own knowledge that much of it is valuable farm land that still awaits the hand of the intelligent and industrious settler to make it blossom as the rose. They are as follows:—

Total occupied lands	6,080,695
" Improved "	1,993,697
" Under crops "	969,548
" Woodland and Forest	4,086,998

**ASSISTANCE TO AGRICULTURE.**

For a great many years the Government of Nova Scotia has in many



A Herd of Dairy Cattle, Sussex, Kings Co., N.B.

different sections where Institute meetings have been held; but, when the change referred to has been fully completed, each Agricultural Society will be a Farmers' Institute within itself, and will make all arrangements for meetings, cost of advertising, etc., while the Department of Agriculture will send one or more speakers whenever application is made. In adopting this system, any Agricultural Society may hold as many meetings as the officers may deem advisable, and, as before intimated, be in a position to obtain speakers who are thoroughly capable of addressing the meetings upon the subjects chosen by the Society.

These societies have power to hold local exhibitions, import stock, seeds, etc., and distribute among its members at cost or by auction sale.

**DAIRYING AND WHEAT GROWING**

The branches of agriculture that are being especially fostered by the Government are dairying and wheat growing. In 1898 the Government established a wheat policy, with a view to encouraging our farmers to at least grow sufficient wheat for their own consumption. An Order in Council was passed to the effect that any person establishing a full roller process mill on a site approved by the Commissioner for Agriculture would re-

ceive assistance equalling one-fifth of the cost of the plant. The result is that we now have nineteen mills running, which have greatly stimulated the growth of wheat. The following taken from the official report will give an idea of the leading crops with the averages per acre.

**UNDEVELOPED LANDS.**

The greater part of the undeveloped lands are in Victoria, Madawaska, Kent and Gloucester Counties, which are well covered with timber, which are the source of a large revenue to the Province.

The amount of money appropriated for agricultural purposes the present year is \$34,526.00, which will be divided as follows: Grants to Agricultural Societies, \$8,000; Dept. of Agriculture, \$4,500; Butter and Cheese Factories, \$3,000; Roller Mills, \$5,000; Dairying, \$4,500; Dairy School, \$500; Farmers' and Dairymen's Association, \$268; Dairy Associations, \$883; Farmers' Institutes, \$2,500; School for Horticulture \$150; Exhibitions, \$5,000.

Hardy fruits, such as apples, pears, cherries and plums, and the small fruits thrive in nearly all parts of the Province.

# Nova Scotia Agriculture

By B. W. Chipman, Secretary for Agriculture

Nova Scotia is so justly celebrated for the extent and value of its mineral deposits and for its splendid fisheries, that it is sometimes almost for-

gotten that its agricultural resources and capabilities are of a first-class order, and much more valuable than its mines and fisheries combined. This

ways aided in the development of the agricultural interests of the Province. At no time have they been wholly neglected. By the importation of improved breeds of animals, horses, cattle, sheep and swine, by encouraging exhibitions, by liberally aiding Agricultural Societies by bonusing creameries and cheese factories, by liberal grants to the Fruit Growers' Association, the Farmers' Association and the Stock Breeders' Association, by establishing an Agricultural School and a Horticultural School and a Provincial Farm—the various Governments of Nova Scotia have done much to encourage, stimulate and develop the agricultural production of the Province. While I have said that in no time in the history of the Province has the Government wholly neglected the agricultural interests, it must be admitted that the assistance given was for the most part of a desultory and spasmodic nature up to a comparatively recent date. It is only within the last ten years or so that a systematic and persistent effort has been made to put the agricultural industry on an advanced footing, with the exception of the organization of a system of Government aided Agricultural Societies in 1864. This was a most beneficial forward movement from which the best results have flowed and are still continuing to flow. That year there were 37 societies having 1744 members, subscribing themselves \$1,859 and receiving \$3,010 from the Government. Last year there were 131 societies subscribing \$9,322 and receiving \$10,000 from the Government. This year there will be some twenty more societies added to the roll. It may be mentioned here as a noteworthy fact, indicating a vastly increased interest in farming in Nova Scotia within a recent period, that the close of this year will show an increase of seventy Agricultural Societies since 1894. The method of forming these societies is simplicity itself. All that has to be done is for twenty-five people to sign an application paper pledging themselves in the aggregate to the extent of \$10 a year, asking to be created an Agricultural Society under the provisions of the Act governing such societies, forward it to the Secretary for Agriculture, who duly presents it to the Government for recognition, if in his judgment it is all right, and the thing is done. It then becomes legally entitled, provided the Government recognizes it, to its proper proportion of the \$10,000 a year, which is the present appropriation, for equitable distribution among these societies. The society may extend its membership without limit, and its subscription the same, but \$250 is the limit which any society is entitled to draw from the Government grant in any one year. The money so obtained is used chiefly in the purchase of improved stock of all kinds, in the agricultural districts in which these societies exist, and the benefit is so manifest as to need no argument. These societies which are now diffused all over the Province, last year, combining their own subscriptions with the Government grant, spent nearly \$20,000 in this way, and this year the amount will be considerably beyond

this. I know of no system in vogue in any of the Provinces of which Canada is composed, which is working out such splendid results as this, and I am devoting my energies to the formation of as many societies as possible, having the utmost faith in their usefulness. The principle on which the system is based is simply Government help to farmers who are willing to help themselves, and to what extent they are willing to do the latter is practically the measure of the Government's assistance.

In respect to Exhibitions, the Government and the City of Halifax four years ago entered into an agreement by which a Provincial Exhibition is to be annually held at Halifax. It is largely an Agricultural show and the prizes offered are sufficiently generous in all departments of farming, stock raising, fruit culture, dairying, grains and roots, etc., to act as a stimulus to excellence in all these directions. In addition to this method of encouraging Agriculture, every kind mmm each County may draw \$230 for the purpose of holding a County Exhibition, or in lieu thereof may, with the consent of the Governor in Council, use the amount for the importation of stock or to any other purpose for the improvement of Agriculture.

#### AID TO DAIRYING.

In 1891 an Act was passed granting bonuses to creameries and cheese factories. It provided for the establishment of three in each County, under certain conditions, allowing \$400 to each one established. About ten Counties took advantage of the Act, and twenty-five or thirty creameries and cheese factories were established. In order to make provision for Counties that failed to take advantage of this Act, in 1899 an Act was passed by which the Government was authorized to purchase the necessary plant and machinery for the establishment of one creamery in any such County. An Act to further encourage dairying was passed at the last session of the Legislature. It provides for the annual expenditure of a sum not exceeding five thousand dollars, on the recommendation of the Secretary for Agriculture, in the establishment of creameries giving satisfactory assurances that they will for the space of five years manufacture not less than 20,000 pounds of butter or 40,000 pounds of cheese, or the equivalent in butter and cheese combined annually, in the encouragement of winter dairying in such manner and by such means as may be recommended by the Secretary for Agriculture; and for the operation of a Travelling Dairy School. In pursuance of that policy a Travelling Dairy School, under the direction of Miss Laura Rose, formerly a teacher at the Agricultural College at Guelph, with a competent assistant, has been operating with great success, being cordially received by the rural population in the Island of Cape Breton this season. Next season it will operate in Nova Scotia proper and will for some years form an important part of the machinery provided by the Government of Nova Scotia for

the advancement of the dairy interests of the Province.

Another Act passed by the Legislature at the last session, provided for the establishment of model orchards as object lessons in fruit culture in each County of the Province. One thousand dollars a year is allowed for this purpose, to be expended on the recommendation of the Secretary for Agriculture assisted by the Director of the School of Horticulture.

#### HORSES IMPORTED

In 1895 the Government imported a lot of pure bred Hackney horses, which were sold at public auction regardless of cost, and which were pretty well distributed throughout the various sections of the Province. Last year a further effort to raise the standard of our horses was made by the Government importing a lot of pure bred Clydesdales and Hackneys from the Upper Provinces and from Scotland and also some thoroughbreds. These, with one or two colts a few months old, were shown at last year's Provincial Exhibition where they were very much admired for their splendid points, and after which they were sold as the previous lot were and were well distributed throughout the Province, where their influence will be felt for many a year in the improvement of our horse stocks. There were twenty-four in all, and cost the Government with expenses of keeping etc., till the time of sale, some \$15,000. They brought at the sale about \$8,000. So the Government in effect gave a bonus last year for the betterment of our horse stock of, say, \$7,000.

I have thus hurriedly given you an outline of what has been done by the Government of Nova Scotia in the past few years, the details of which now being worked out must show a marked improvement in the general growth of Agriculture in the near future. In the short space at my disposal I have not mentioned our marvelous progress in fruit-growing during the last twenty years, in the great Fruit Valley extending from Windsor to Annapolis. Great as has been the development of this industry during that time, the number of trees now planted and coming into bearing must double the annual wealth from that source many times during the next twenty years.

#### Had Him Secure.

In St. Paul's the other day a guide was showing a gentleman round the tombs.

"That, sir," said the man, "his the tomb of the greatest naval hero Europe or the world ever knew—Lord Nelson's. This marble sarcophagus weighs 42 tons. Hinside that his a steel receptacle weighing 12 tons, and hinside that is a leaden casket hermetically sealed weighing 2 tons. Hinside that is a mahogany coffin holding the ashes of the great hero."

"Well," said the Yankee, after thinking a while, "I guess you've got him. If ever he gets out of that, cable me at my expense." London Tid-Bits.



Simpson's Mills, Cavendish, P.E. I.

## Agriculture in Prince Edward Island

By Hon. B. Rogers, Commissioner of Agriculture

With the exception of about a million dollars annually derived from the fisheries, the total wealth of Prince Edward Island may be said to be produced on its farms. The commercial interests of the province are dependent upon the prosperity of the farmers and its manufacturing industries prosper or decline with the progress of agriculture. Nearly all valuable timber has been cut away, and the forests have ceased to contribute any appreciable amount to increase the national wealth. There are no mines of any kind whatever. It will thus be seen that agriculture plays a very important part in the development of the Island province.

A gradual change has come over the practice of agriculture during recent years. The Prince Edward Island farmer, like many of his fellows in other parts of the Dominion, to-day sells more of the finished products such as butter, cheese, beef and bacon, and less of the raw materials i. e., hay, grain or potatoes than he did ten or fifteen years ago. The breeding of improved live stock is accordingly receiving greater attention each year, and farmers are realizing more and more the benefits to be derived from the introduction of pure bred animals into their flocks and herds.

### CO-OPERATIVE DAIRYING.

Co-operative dairying although of recent introduction having been begun in 1891, occupies the foremost place among the farming industries of the Province. During the year previous to the above mentioned date no cheese was exported. In 1900 the output of the cheese factories was valued at \$449,852. In the same year the sum of \$122,152 was realized from the sales of creamery butter. The country is well adapted for dairying being well watered, fertile and of an equable temperature, hence a much greater development in this line may be expected in future. To Professor J. W. Robertson, acting on behalf of the Federal Government, is due the

credit of establishing the dairy industry upon so firm a basis in Prince Edward Island.

### BEEF AND BACON.

Enough heaves are raised to supply the local market and also to furnish a considerable number for the export trade to the neighboring provinces. Occasionally a few are shipped to Great Britain. The introduction of Shorthorn and Polled Angus blood is doing much to improve the size and quality of beef stock. Sheep raising is considered to be a paying business with many of the farmers. The meat is of excellent quality and commands the highest price on the markets of the Dominion and the United States.

With the advent of dairying the production of bacon received a new impetus. This industry has been further stimulated by the erection of a large and well equipped packing house in Charlottetown. The good prices realized for hogs during the past two years will no doubt tend greatly to increase the hog raising business.

Horses which were once a staple commodity now constitute only a small fraction of the agricultural exports. The product of the comparatively insignificant hen continues to be a source of very considerable revenue to the farmer. The trade in dressed poultry is growing slowly as the requirements of the markets and the process of fitting the birds are better understood.

Fruit growing is still in the initial stages. True, there are a few orchardists who have demonstrated the practicability of growing fruit here, but the great majority are ignorant of the first principles of fruit culture. That apples, plums, pears and the small fruits can be produced in abundance and excellent in quality is proved wherever the proper care has been bestowed upon the crop. It would seem that here is a splendid opportunity or employment for anyone who is willing to give the necessary care and attention to the business.

### AGRICULTURAL PROGRESS.

The progress of agriculture in Prince Edward Island was for many years largely dependent upon individual enterprise. Apart from the benefits derived from the sales of pure bred stock at the Model Farm, which was established near Charlottetown almost forty years ago no government aid was afforded to the tiller of the soil. Finally the necessity for a change in farm practice led the Government to take action in the matter. At the beginning of the present year a Commissioner of Agriculture was appointed, and a Department of Agriculture became established in the Island. In March following a bill entitled "An Act for the encouragement of Agriculture" was passed by the Provincial Legislature, which provided for the introduction of the Farmers' Institute system and also for the appointment of a Professor of Agriculture whose duties it will be to superintend the work at the Government Farm and lecture before the students of Prince of Wales College.

### INSTITUTE WORK.

For Institute work the province has been divided into thirty-three districts. The societies formed in each district must have not less than fifty members enrolled, and are required to subscribe forty dollars annually in order to receive the Government grant of fifty dollars per year. More than half of the Institutes have already been organized, and it is expected that all of them will be working before the end of the present year.

### GRANTS TO AGRICULTURE

The expenditure by the Department of Agriculture for the year 1901 will amount to about \$3,500.00. Of this sum nearly \$2,000.00 will be expended in grants and other disbursements in connection with Institute societies, as already described. A grant of \$50.00 goes to the Fruit Growers' Association, and \$300 to the Dairymen's Association. This latter sum is used to help



A Harvesting Scene near Charlottetown, P.E.I.

in defraying the expenses of a Dairy Inspector. About six hundred dollars will be spent on the Farm where experimental work has been instituted this year. Salaries and contingent expenses make up the remainder. All indications point to a rapid agricultural advancement in the near future. The new order of things possesses the confidence of the people. We have al-

ready experienced the benefits of co-operation in the manufacture and sale of farm products. With the means of education within reach a still greater development in agriculture may reasonably be expected.

The land in Prince Edward Island is nearly all settled, and with the exception of small portions which are still occupied by forest is all under

cultivation. The production of the farms, however, can be greatly increased by improved methods of cultivation. The natural resources of the province are such that a population double that of the present day might be supported comfortably. A more intensive system of farming in which the orchard will enter largely seems likely to supplant the old methods.



Threshing the Wheat Crop. A Familiar Scene in Western Canada during September and October.

## Manitoba Agriculture and Immigration

Prepared Under Direction of Hugh McKellar, Deputy-Minister of Agriculture

In a Province like Manitoba, which is entirely dependent upon the prosperity of the agricultural industry, it will be supposed that the Department of the Government having to do with that industry, is, and should be, the most important in the Government. The Department of Agriculture, to which immigration is naturally joined, is under the administration of the Premier of the Province, Hon. R. P. Roblin. The Premier has had a long parliamentary experience which well fitted him for that position, just as his business interests have given him an insight into the farmer's needs and the farmer's views, which is invaluable to him as Minister of Agriculture. The administration of the department was formerly in the hands of the Board of Agriculture, but in 1888 the present department was organized under the direct control of the Minister. It includes the divisions of agriculture, statistics, dairying, immigration, charities, game protection, agricultural societies, and others of minor importance. The expenditure for 1900 was \$121,682.16, and the estimates for 1901 provide the sum of \$139,445.02.

Agriculture in Manitoba has fewer sub-divisions than in the Eastern Provinces; grain, live stock and dairying embrace the whole industry as practised here. Consequently, the department has fewer branches or

ramifications than is the case elsewhere.

### AGRICULTURAL ORGANIZATIONS.

The work of the department is supplemented by various agricultural organizations, receiving government aid. The sum of \$17,500 is provided in the estimates of the present year for farmers' institutes and agricultural societies. Of the latter there are over 50 receiving from \$150 to \$350 each. In addition to the yearly fair these are required to hold a certain number of meetings each year for agricultural discussion. Twice in each year these meetings are attended by lecturers sent out by the department. The farmers' institutes differ from the foregoing in holding no fair, and are assisted in a large degree, receiving from \$12.50 to \$50 each, according to membership. The following associations, viz., The Horse Breeders', Cattle Breeders', Sheep and Swine Breeders', Dairy and Poultry Associations, and the Horticultural Society receive grants, which though, not large in amount, are proportionate to the revenues of the department. Grants totalling over \$10,000 are made to the Winnipeg Industrial and smaller exhibitions held at Brandon and Portage La Prairie.

### THE WORK EDUCATIONAL.

It will be observed that the work

of the department is educational in its character, in so far as it relates to agriculture. The sum of \$8,500 is appropriated this year for dairy instruction. A dairy superintendent and two assistants are employed during the entire year, the Dairy School requires two additional instructors during January, February and March. The sum of \$2,000 for noxious weeds inspection is entirely expended in giving instruction along this line by the Provincial Weed Inspector and his assistants. The Provincial Veterinarian, in addition to his work as veterinary inspector also is able to give much advice and assistance to the farmers, regarding the care and treatment of stock. All the foregoing officials are regularly employed as lecturers to farmers' institutes and agricultural societies. The work of education is likely, in the near future, to be assumed by an Agricultural College, as there has recently been much agitation for such an institution, and the Government has appointed a commission to report on the subject.

### IMMIGRATION.

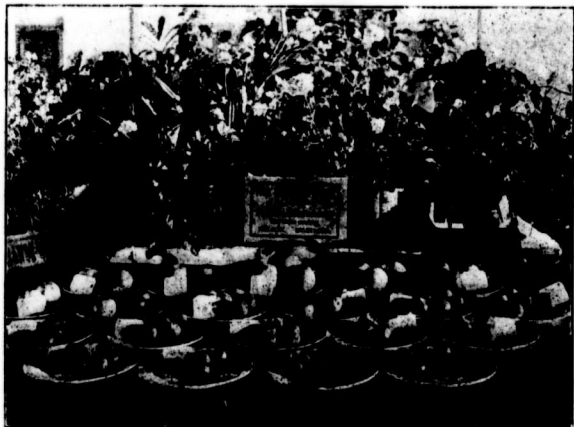
It has already been stated that immigration has been joined to agriculture in this department. Not only does the department foster the interests of the farmers, but it also seeks to increase its constituency by inducing others from more populous lands

to migrate to Manitoba, the land of cheap farms. It is a peculiarity of the West generally, that everything a man has is for sale, except his wife and family. Consequently in settling in Manitoba, a man need not go into remote districts, distant from settlement, but may purchase improved farms, complete with buildings, stock and machinery, at prices which are astonishingly low to the Eastern farmer. But if his funds are scant he may purchase government or railway lands at \$1.00 to \$5.00 per acre, and pay for them in ten yearly instalments. Thus his farm actually pays for itself. The Provincial Government holds over a million and a half acres of the finest land in the province for sale on these terms. There are also free homestead lands to be had; these are in the more distant portions of the province, but nevertheless, well situated as regards railway facilities. In the Swan River District, recently opened up by the Canadian Northern Railway, are numbers of homesteads still open for

settlement. These are equal to any lands in the province, or indeed, anywhere in the world. The question is sometimes asked, "Why is there such a vast area of uncultivated lands in Manitoba, if the land is of such excellent quality?" The answer is: "There are not enough farmers in the province to cultivate it." Manitoba's great want is more farmers. There are now over 30,000 farmers in the province who have nearly 3,000,000 acres in crop this year, with over half a million acres of summer fallow, and there is room for twice, yes three times, that number. The experienced, capable men of the East, finding themselves unable to secure lands for their sons in their own localities, where prices range from \$50.00 upward per acre, are looking to the West for cheap lands. Manitoba offers great advantages to such men, and to make known to them these advantages is an important part of the work of agriculture and immigration for Manitoba.

and sheep men, often ending in bloodshed and the wholesale destruction of sheep, it seems amazing that the settlement and live stock of this country should not increase at a more rapid rate.

That "agriculture is the backbone of the country", has become a somewhat hackneyed phrase in Canada. In view of the facts above mentioned, there cannot, however, be any reasonable doubt, that such is the state of affairs in the North-West Territories. Recognizing this fact provision was made, soon after the necessary constitutional powers had been vested in the Territorial Government, for the organization of a department of the public service charged particularly with discovering and developing the agricultural resources of the country. From a humble beginning, the Territorial Department of Agriculture has, in the course of three years, grown into one of the largest and most important branches of the public service. The immediate object of this article is to outline briefly the work the department has in the past undertaken and what it hopes to accomplish in the future.



Fruit Exhibit, Morden Fair, Manitoba, 1900.

## Agriculture in the Territories

By Chas. W. Peterson, Deputy Commissioner of Agriculture

Prince Edward Island, famous for the excellence of its agricultural products, has been named "The Garden Province" of Canada. The North-West Territories, embracing over a hundred times the area of "The Garden Province", might appropriately be called "The Great Canadian Farm". The total area of Assiniboia, Saskatchewan and Alberta is 302,335 square miles, which, reduced to acres, makes 193,494,400.

The total area under cultivation during 1900 was 695,347 acres, leaving about 193 million acres awaiting development and for grazing purposes! Briefly speaking, the present cultivated area of the North-West Territories, bears the same proportion to their total area, as a small garden patch does to a two thousand acre farm.

### OPPORTUNITIES FOR STOCK RAISING.

From a live stock point of view a

comparison with the colony of New South Wales would not seem inappropriate. That colony contains an area slightly over 310,000 square miles. In addition to carrying cattle stock at least ten times as great as that of the Territories, New South Wales contains 40,000,000 sheep at the present time, and less than ten years ago, the sheep stock numbered 61,000,000 head. The total sheep stock of the Territories is approximately 225,000, and cattle and horses will scarcely number 500,000. When one comes to consider the extensive tracts of absolutely free grazing lands in the Territories, admirably adapted to cattle, horse and sheep raising on a large scale, which have never been utilized, and the crowded condition of the Eastern Canadian Provinces and the ranges of the United States, where lack of room has frequently led to most serious conflicts between cattle

### WORK OF AGRICULTURAL DEPARTMENT.

Unlike other public works and other Government departments, that of agriculture is not, as a rule, a "spending" department. At least the policy of the Territorial Government, to some extent probably dictated by financial stringency, has been to encourage co-operation between the great land owning and transportation companies vitally interested in the development of the West and the department, in fact to make it a medium of co-operation and organization rather than a lavish dispenser of public funds. Put in a nutshell, the policy of the department is to help those who are willing to help themselves, and it is rather a boast of ours, that we get so much useful work done with so modest an expenditure. The total appropriation available for the purposes of agriculture and statistics during the present fiscal year is only \$20,000, to which, of course, should be added the cost of the departmental staff, etc., about \$7,000.

### THE CO-OPERATIVE WORK

The following instance illustrates how the efforts of the department in the direction of co-operation, work out in actual practice. An excellent market exists in the Territories for cured pork; the amount produced locally is infinitesimal. Northern Alberta is particularly well adapted to hog raising, but it was apparent that the breeding stock in that portion of the Territories was of a very unprofitable class, chiefly owing to inferior importations by American immigrants. Under the most favorable conditions, many years would have elapsed before a marked improvement could have been brought about by grading up. Here was clearly a case calling for departmental exertion. There are two large land owning corporations particularly interested in the development of Northern Alberta, the Canadian Pacific and the Calgary and Edmonton Railway Companies.



A Hay Crop, Salt Spring Island, B.C.

The department placed itself in communication with both, explained the existing state of affairs and proposed as a remedy that three car loads of purebred boars and brood sows of approved type should be procured in Eastern Canada, brought to Northern Alberta and sold by public auction to the highest bidder, at well distributed points, so as to form a nucleus of an improved type of hogs in each district. The Canadian Pacific was asked to furnish free transportation for the shipment and the Calgary and Edmonton Railway was requested to guarantee the department reimbursement of any financial loss that would be sustained on the other hand, the department would consent to undertake the whole burden of the organization work. This was immediately agreed to, and as a result over two hundred boars and sows were sold at eight different points. The effect of this scheme upon the future pork production in that portion of the Territories can hardly be overestimated, and the cost to the public exchequer was nil. It is only fair to state, that the success of the undertaking was largely due to the efficient manner in which Mr. A. P. Westervelt, Secretary of the Ontario Live Stock Association, managed the purchasing in Ontario, and the valuable assistance rendered by Mr. F. W. Hodson, Live Stock Commissioner. Similar work is being done in connection with the importation of purebred bulls. The Canadian Pacific gives free transportation for the bulls, the various importers pay the sum of \$5 towards the care and attendance en route of each animal and the department does the organization work.

**IRRIGATION AND OTHER MOVEMENTS.**  
In addition to active efforts in the way of encouraging the importation



Breaking New Land, Gulf Island, B.C.

of purebred stock, the department has a multitude of varied and more or less important duties to perform. Some seventeen acts relating to agriculture are administered, and, owing to the enormous extent of the country and the total absence of municipal or local organization, a large amount of detail work necessarily devolves upon the department. The volume of official work can be gauged fairly well by the number of communications received and sent during the past year,



Home Farm, B4 Ranch, Okanagan County, B.C.

which reached over 11,000. Among the more important agricultural experimental work under irrigation. Some 60 acres of land in the vicinity of Calgary are devoted to this purpose. The recording of cattle and horse brands is also a very important item of work. Upwards of 12,000 brands are now on the records of the department. Stock inspection, destruction of noxious weeds and predatory animals, game protection, prairie and forest fire protection, Farmers' Institutes and live stock associations, administration of stray and impounded animals, the collection and compilation of agricultural, vital and health statistics, the care of incurables, administration of the charity vote and public health, all come within the purview of the Territorial Department of

Agriculture. In fact, from the management of an experimental corn to the destruction of noxious weeds on abandoned lands, from important live stock shipments to the impounding of stray pigs, and from the burial of dead tramps to the suppression of smallpox and tuberculosis, the department is in constant request.

#### DAIRY STATIONS AND AGRICULTURAL SOCIETIES

In addition to the assistance rendered by the Dominion Department of Agriculture to co-operative dairy stations in the Territories and agricultural societies, the Territorial Government gives a large grant to the latter. Disinterested expert judges of live stock for agricultural exhibitions are also provided at public expense. A substantial grant is given annually to the Territorial Purebred Cattle and Horse Breeders' Associations, and the Entomological Society. Associations receiving grants from the Government are under close supervision and are required to assist in the good work of furthering the agricultural and pastoral interests of the country. The Live Stock Associations do an excellent work. A successful sale of purebred cattle was held under the auspices of the Territorial Purebred Cattle Breeders' Association in April last,

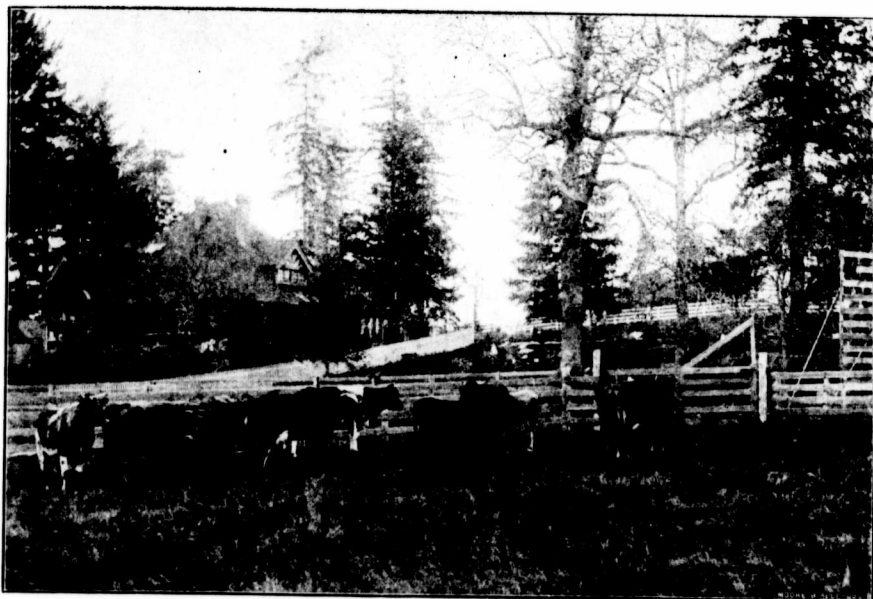
and the Horse Breeders' Association is one of the most active organizations in the West with a membership of several hundred.

#### THE FUTURE

What are our hopes and aspirations? The Territories exported in 1900 some 2,200 horses, 55,000 head of beef cattle, half a million pounds of butter and three millions bushels of wheat. I hope to see the day when our annual export of beef is 250,000 head, wheat 25 million bushels, and other commodities in proportion—and, if I live, I will not be a very old man then.

Stout man (struggling and crowding to force himself on to the packed step of a Broadway open car)—“Humph! What's this—the hog car?” Elderly Passenger—“Yes! Jump right on.”





Home Farm, Near Victoria, B.C.

## British Columbia Agriculture

By J. R. Anderson, Deputy Minister of Agriculture

At the present time Agriculture plays a comparatively small part in the development of British Columbia. A glance at the enormous imports of agricultural products into the Province makes this quite evident. It can be safely asserted however that the production of Agricultural products, owing to more enlightened methods, increased number of people engaged in farming, and of land under cultivation, the erection of creameries etc., has materially increased during the past few years. In spite however, of this accession in volume of products there has been a large increase in the imports of Agricultural products. This is explainable no doubt by the great accession to the mining population of the Province, the opening up of new districts such as Atlin, where practically nothing is produced, the increase in the lumbering, fishing and sealing industries, and lastly the opening of the Yukon country, the supplies for which are drawn principally from this Province.

The topography and climatic conditions seem to lend themselves to a natural division of the Province into three distinct divisions as follows: The Upper Mainland being all that portion to the eastward of the coast range of mountains, and including within its limits the large cattle ranges and what is known as the Dry Belt owing to the small precipitation. The Lower Mainland, being all that portion, on the sea coast to the Westward of the Coast Range and including within its boundaries the rich Delta lands of the Fraser. This part

of the country is generally wooded heavily with forests of magnificent timber and is the most humid portion of the Province. The Islands being all that portion including Vancouver Island and the islands adjacent thereto. This portion of the Province partakes somewhat of the characteristics of the other two divisions and resembles the first part in the distribution of the flora, and its lessened precipitation.

### CEREALS AND FRUIT.

The production of cereals, with the one exception of oats, is not increasing throughout the Province. Wheat it is true is produced in considerable quantities in the Okanagan and Spallumcheen country and in the vicinity of Shuswap, but even there under the most favourable conditions for its production many farmers are awakening to the fact that it is not always the most profitable line of Agriculture.

The orchards which have been set out during the last few years are gradually coming into bearing with the result that the production of fruit is largely increased and improved methods of picking, packing and shipping are forcing themselves on producers in order to compete with their active competitors to the South.

### DAIRYING AND LIVE STOCK.

Co-operative dairying is finding more and more favour with the farmers generally, and advantage is being taken of Government assistance in several localities for the erection of

creameries. The product is however, far short of the demand, and since the industry is certainly profitable it is a matter of some curiosity why this branch is not developed more rapidly. One condensed milk factory is in operation, it is situated at Mission City.

The production of beef cattle is reported a profitable business in nearly every section of the country whether produced in large herds on the extensive ranges of the upper country, or in the smaller numbers of stall fed animals. The seasons of late have also been of such a favourable character that losses have been comparatively few and feeding has been done at a minimum cost. Dairy cattle in consequence of the increased interest in this branch have of late acquired a value far in excess of that of former years. The importations of pure bred live stock from the Eastern Provinces through the efforts of the Dairymen's and Live Stock Association aided by the local Government have been most successful and will result in great good to the herds of this Province and profit, it is hoped, the breeders in the east.

Horses from various causes, possibly the demand for military purposes being one of the concomitant reasons, have been much more profitable of late and the industry has in consequence had a considerable impetus given it. Large draft horses are on the whole the most profitable.

Sheep are only produced in limited numbers principally on Vancouver and Gulf Islands. Whilst it is conceded by some that sheep would be more pro-



A Forest Scene in British Columbia.

table than cattle on the large ranges of the interior, the consensus of opinions is against their introduction on the ranges. Another reason against the keeping of sheep on the ranges is the prevalence of coyotes and other beasts of prey. Wool may be said under present conditions to be worthless and therefore sheep for mutton alone are bred.

The swine industry is capable of great expansion, and in proof of this one has only to look at the table of imports where the hogs and its products amount to the value of \$915,960 or nearly a million dollars. The expansion of the dairying industry which is so intimately connected with the production of the pig will no doubt have a great influence in increasing the production of this valuable article of food.

The production of poultry is probably one of the most remunerative branches of Agriculture, and although not prosecuted on a large scale there are many breeders of fine poultry in the Province who are reaping a good harvest from a comparatively small outlay.

Soiling crops and ensilage, which in the past have been lamentably neglected are now receiving that attention in many quarters which is due to them, and we may in the near future look for a great accession in these important branches for the successful feeding of dairy cows during the dry months of summer and in winter.

#### ASSISTANCE TO AGRICULTURE

The Department of Agriculture was originated in 1891 by the Hon. J. H. Turner, Minister of Agriculture, ap-

pointing the present Deputy Minister to take charge of it and see what could be done. It has since grown into comparatively large proportions.

The total amount voted at the last session of the Legislature in favor of Agriculture and its branches amounted to \$21,919, and is distributed as follows:

Salaries	\$4,860
Fruit Growers' Association	1,250
Dairymen's & Live Stock Assn.	1,000
Flock Masters' Association	250
Farmers' Institutes	4,250
Board of Horticulture	1,000
Permanent Show at Vancouver	250
Poultry Associations	300
Agricultural Associations	11,759

21,919

Under certain conditions the Government assists co-operative creameries by advancing a loan to the extent of one half the cost of building and plant at a low rate of interest repayable in ten years.

However, work of recent years has been principally educational through the medium of Farmers' Institutes and the distribution of literature. It is proposed in the future to extend this work and the prospects are most encouraging. General dairying and fruit-growing are fostered to some extent.

There are still undeveloped agricultural lands in several parts of the province. The reason they are not occupied seems to be on account of their inaccessibility and in some cases the great difficulty of bringing them under cultivation either by clearing, dyking or irrigation.

The old-time Puritans who merit admiration despite their strictness, had these quaint rules for a selection of a wife:

"A good wife should be like three things, which three things she should not be like. She should be like a snail, to keep within her house, but should not be like a snail to carry all she has on her back. She should be like an echo, to answer when she is called, but she should not be like an echo, always to have the last word. She should be like a town clock, always keeping time with regularity; but she should not be like a town clock, speaking so loud as to be heard over all the town."



Scene at Douglas Lake, B.C., Showing Cattle Range and Dry Belt.

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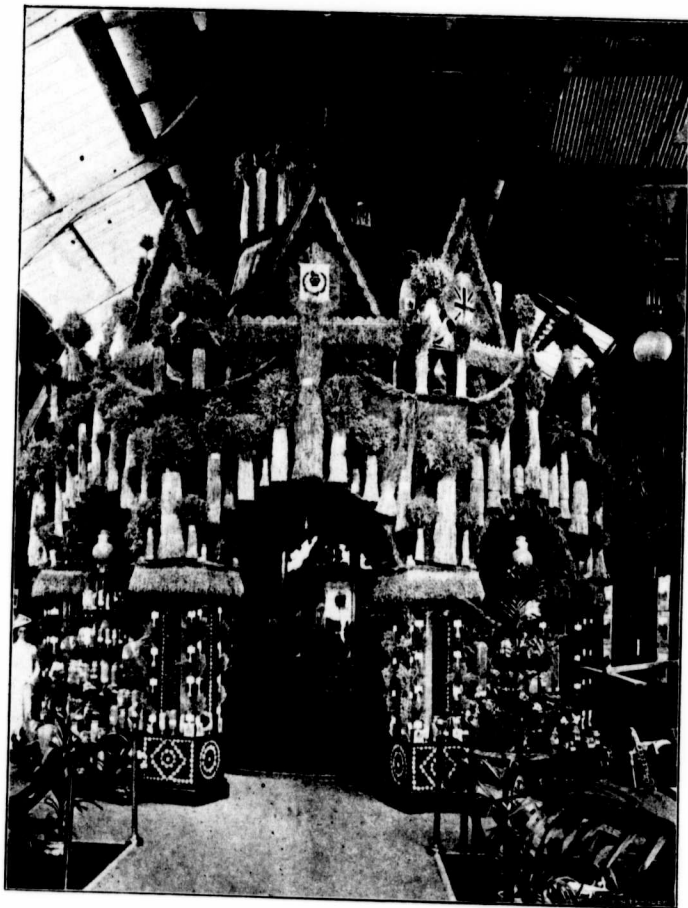
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Canada's Agricultural Trophy, Glasgow International Exposition.

## Canada at Glasgow

By W. H. Hay, Experimental Farm, Ottawa.

The Glasgow International Exhibition, for its size, is one of the best ever held in any country, and judging from the attendance which has averaged upwards of 59,000 people per day since the eventful morning when Her Royal Highness, the Duchess of Fife, unlocked the doors to the thousands of eager sight seers, who kept coming in increasing numbers from all parts of the world, it bids fair to be a great success. The location of the Exhibition grounds is simply magnificent, occupying as they do a considerable portion of Kelvin Grove Park, with the majestic University towering in the back ground and the river Kelvin flowing through its walks.

The prominent position that Canada has taken in this important and successful exhibition is attracting well-merited attention. The Canadian pavilion is a spacious building, well adapted for the purpose, and is

charmingly situated on a high ridge of land opposite one of the main entrances to the grounds. The building contains nearly 11,000 square feet of floor space and 7,000 square feet of wall space, and is full to overflowing with the choicest specimens of the products of our great country. The work of placing the exhibits in an attractive manner, and at the same time so that they may be seen to the best possible advantage, is of the utmost importance, and entails an enormous amount of thoughtful labor. That this has been successfully accomplished in connection with Canada's display at Glasgow is evidenced by the throngs of interested visitors to the pavilion and by the many flattering press notices that have appeared in almost all the leading European newspapers. It is worthy of note that on the day of the opening of the exhibition Canada was the only country that had

its exhibits installed and ready for inspection.

### "TEMPLE OF CEREALS"

On entering the Canadian building, the first object to claim attention is the magnificent trophy, or "temple of cereals," which occupies the space in the centre. This trophy is octagonal in shape and rises to a height of thirty-four feet. The wealth of grains, grasses and fodder plants shown at once impresses the observer with the fact that Canada is rich in agricultural resources of almost endless variety. Some idea of the magnitude of this exhibit may be gleaned from the fact that the collection comprises upwards of 10,000 samples donated by three hundred and forty of the leading farmers throughout the Dominion and supplemented by the Departments of Agriculture for the various provinces and by the Domin-

ion Experimental Farms. The many fine specimens of grains which have been originated on the Experimental Farms are receiving a great deal of attention from the grain merchants and farmers who daily visit this section.

The large and varied collection of bottled fruits, together with the display of fresh apples, fully demonstrates to the visitor that the possibilities of fruit-growing in Canada are practically unlimited.

#### CANADIAN WOODS.

The excellent collection of woods indigenous to Canada occupies a prominent position in the pavilion. This section is particularly interesting not only to lumbermen, but also to the public at large, who cannot but admire the many beautiful specimens of our native woods in all the various stages of finish from the

rough sawlog to the most highly polished panelling. To those fond of canoeing, the dozen or more exquisitely finished canoes are objects of more than passing interest and many are the questions asked as to the cost, etc., of these articles. The carriages sent from Canada are models in their line, both as regards style and finish. The light weight of these vehicles as compared with those of British make, is what surprises the people there; but when it is explained to them that the second growth hickory is largely used in their construction, and samples of this valuable timber are shown to them, they then realize how the carriages are strong without being heavy.

That the ladies have a weakness for examining stoves is quite apparent by the way they collect around the very interesting display made by the McClary Manufacturing Co., of Lon-

#### AGRICULTURAL MACHINERY.

don, Ont., and from the many expressions of delight and approval which are heard of this very necessary piece of kitchen furniture, it is safe to predict that the demand for Canadian made stoves will be something enormous in the near future.

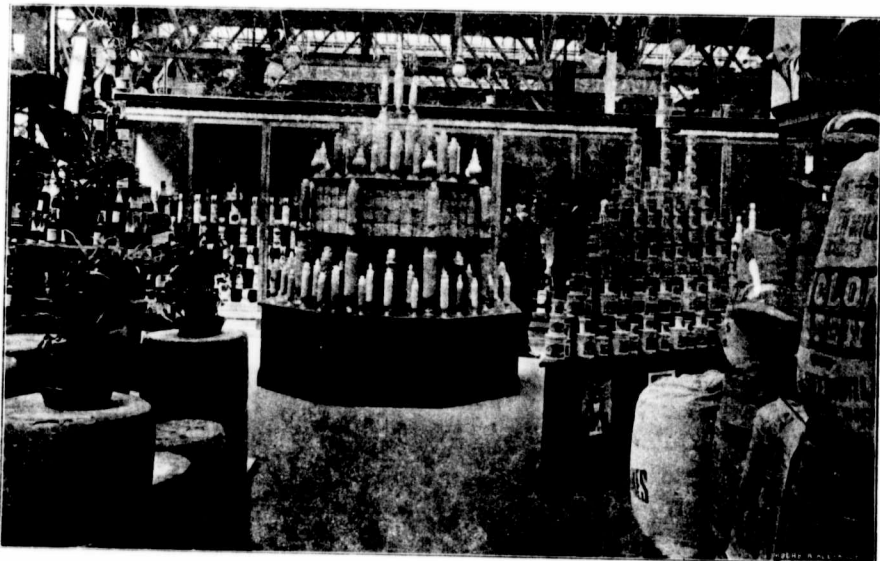
That Canada leads the world in the manufacture of up-to-date agricultural machinery is fully demonstrated by the splendid exhibits of our leading manufacturers. These excellent exhibits go to show that we can not only produce the raw material, but that we can turn out a finished article second to none. The firms represented are the Noxon Co., Frost & Wood, Maxwell & Sons and Massey-Harris Co., all of whom have made attractive exhibits. They have sent nothing but their best machines with all the latest improvements and all

requirements of the people. Mr. Mercer in emphasizing the good points of his machines never fails to sound the praises of Canada. Maxwell & Sons, in addition to their regular display of agricultural implements, are showing a number of churns, lawn mowers, etc.

#### CANADIAN MINERALS.

Besides having a building of her own, Canada occupies a large space in the Industrial Hall. Here may be seen one of the most collective exhibits of minerals ever sent from the Dominion. A considerable proportion of the space is devoted to an exceptionally good display of manufactured goods, such as household furniture, school desks, organs and other musical instruments, textiles, boots and shoes, wall papers, harness and leather goods.

The Montreal Fur Company have a



Canada's Food Products Exhibit at Glasgow.

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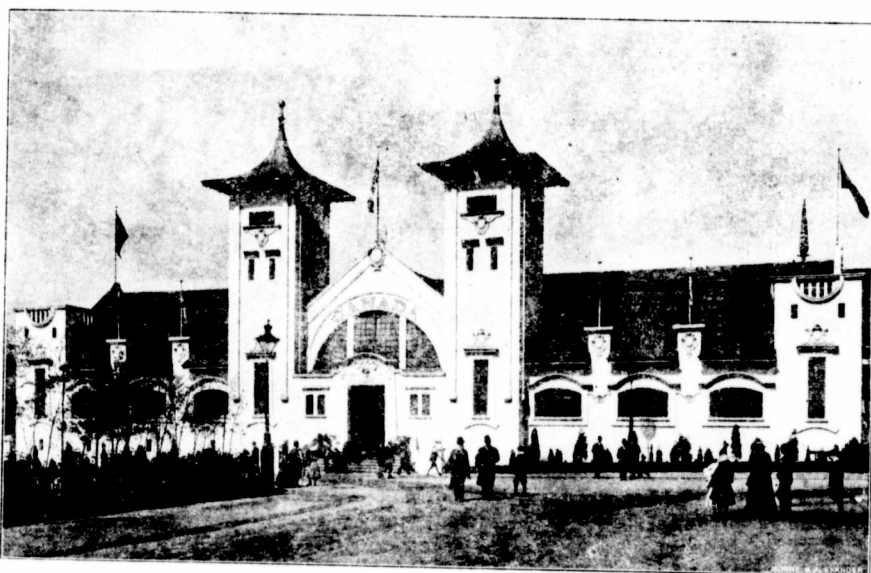
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#### FOOD PRODUCTS.

The food products section is claiming the well-deserved attention of the majority of the sightseers, and well it may, for no other spot in the exhibition appeals more strongly to the taste than the tempting appearance



Canadian Pavilion, Glasgow International Exposition.

of the Canadian cheese, honey, canned goods and other food stuffs shown. One particularly interesting feature of the exhibit is the cold storage plant. The latter consists of a large glass case kept at a low temperature and containing a fine collection of our best varieties of winter apples, together with some of the more perishable food products.

There is a growing feeling among all thoughtful men that the future welfare and greatness of the British Empire depends in no small degree upon closer trade relations between Great Britain and her colonies. Many

of the leading merchants of Great Britain have now come to consider it almost a national duty to favor, as far as possible, the products of the colonies rather than the exports of foreign nations. The marked improvement which has taken place of late years in the quality of our food products sent abroad, encourages the hope that all well wishers of the Empire in the Motherland will lend their support to the efforts at present being made by Canadian farmers to supply the British public with pure and wholesome products off the farm, orchard and garden, and it will only

remain for the Canadian farmer, having gained the confidence of the people of Great Britain and created a demand for his produce to put forth every effort to retain and increase that demand. This can only be accomplished by eternal vigilance on the part of our people. Send nothing abroad but the very best that your farm and dairy can produce, and see to the careful packing and shipping of the same, and you will have the satisfaction of knowing that you are one of the builders of the Empire.



Canadian Mineral Exhibit at Glasgow.



Interior View Canadian Building, Pan-American Exposition, Buffalo.

## Canada at the Pan-American

(Specially Reported for this Issue)

A visitor to the Pan-American Exposition cannot but be impressed by the prominent position which Canada occupies among the countries making exhibits. This is all the more striking when we consider that only two or three of the provinces are represented, and that comparatively few exhibits of Canada's resources and leading industries are to be found there. No doubt, wisdom has been displayed in confining the exhibits to a few and making these especially attractive. Designed as it was to show the progress of all America during the century and to promote a better understanding of each other among the peoples of the new world, there was nothing to be gained by way of increasing the markets for Canadian products in making a more elaborate display. The Canadian exhibits, though not varied, are sufficient, however, to show visitors that this country is a land of plenty, with a climate admirably suited to the production of the finest quality of food products, besides having resources in timber and mineral wealth second to no other on this continent.

### CANADA'S BUILDING.

The Canadian pavilion, which by the way, is well located for the con-

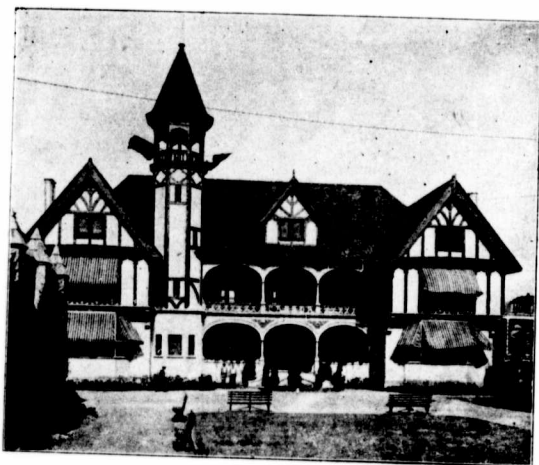
venience of visitors and exhibitors, is a model of neatness and comfort. There is no better place on the grounds for a quiet rest after several hours of sight-seeing. Not only Canadians, but Americans make this the meeting place for seeing and chatting with friends.

To Wm. Hutchinson, Canadian Commissioner to the Pan-American is largely due the credit of this homelike and inviting appearance. The building itself, though not large, is ample for the purposes for which it is intended. The interior is decorated by grains, an artistic arrangement of mirrors, etc., and presents a most attractive appearance to visitors. Offices are fitted up for the Commissioner and his staff, while special rooms are set apart for ladies. Many have asked why the building was not located among the State buildings and those of foreign countries. To the Minister of Agriculture is to be attached the blame or praise of the location chosen. He chose, and we think wisely, a position adjacent to the agricultural building and the live stock stables. The real benefit of being located at this point will be more forcibly seen during September and October, when the live stock exhibits are in place.

### AGRICULTURAL EXHIBITS.

Only one province is represented in the agricultural building, that of Manitoba. As would be expected, its display consists nearly altogether of cereals and grasses. Wheat, oats, peas, barley, rye, corn, flax and cultivated and natural grasses in the straw, are very neatly and artistically arranged after a plan designed by Mr. Robert Nelson, Elgin, Manitoba, who is in charge of the exhibit. A few western farm scenes adorn the walls, while a large number of sacks of Manitoba No. 1 hard are in convenient places for visitors to sample. The general effect of the display from a distance is striking, and must convince the on-looker that our great Canadian West is a land of plenty.

We have said that Manitoba is the only province represented in this building. But upstairs, in a somewhat out-of-the-way place is to be found two Ontario exhibits; that of the Ontario Cannery Association and of the Ontario Beekeepers' Association. The former shows a large quantity of Ontario canned fruits, and the latter the products of the apary. The Beekeepers' exhibit is attracting considerable attention from the fact that the honey is put up in neat and convenient jars and



Canadian Building, Buffalo.

bottles, quite different from those to be found south of the line.

#### THE MODEL DAIRY.

The only live stock at the Pan-American at the time of writing were the fifty cows in the model dairy. Our readers are already familiar with the general plan of conducting this dairy, and with the reports of the tests that have been published in these columns from week to week. A six months' milking competition is being conducted, in which twenty-five Canadian cows are competing, representing the Shorthorns, Holsteins, Ayrshires, Jerseys and French Canadian cattle. So far the Canadian cattle have more than held their own with the Americans. They are an even lot in point of profit and on the profit as a whole, are ahead. The profit on butter production, the best individual record so far, has been made by the little Canadian Jersey, Primrose, her test having run as high as 7.4 per cent. With regard to breeds the Guernseys have so far shown the best record in butter production, while the Holsteins are a long way ahead in total solids. Mr. G. W. Clemons is in charge of the Canadian cows, and Mr. Jas. Stosehouse is Canada's representative in the conduct of the test.

The live stock exhibit proper begins on August 26th, and will continue during September and October. Canadian Live Stock Commissioner Elderkin, who, by the way, is most energetic in the interest of Canadian breeders, reports a large number of entries from the Dominion. It is therefore expected that Canada will hold her own at least in the coming live stock competitions.

In the dairy products classes Ontario so far has carried off the palm. In the July competition out of fifty-seven cheese exhibits Ontario makers captured fifty-seven premiums. Another competition for dairy products takes place in September, when it is expected that Ontario will make a

much larger display than in July; with equally successful results.

#### ONTARIO FRUIT.

No exhibit in the horticultural building attracts more attention than that of Ontario fruit. Already over 12,000 names have been registered on the visitors' register, and comprise people from all parts of the world. This display is artistically arranged and presents a most attractive front. The exhibit is made up of our staple

fruits, such as peaches, plums, pears, apples, berries, cherries, red currants admirably arranged on tables for inspection. Early in the season cold storage fruit was used to fill the tables, but later, early varieties of apples, etc., have taken its place. There are exhibits of fruit from Essex County in the west to Prince Edward in the east. In a number of cases the local horticultural societies have made representative exhibits of the fruits in their respective districts. Where there is no society, individual growers have sent their exhibits direct to the Superintendent, who has selected from these specimens for display. The tables are nicely decorated by some fine specimens of Ontario flowers, including roses, gladioli, etc. A very fine showing of domestic canned fruits, put up by farmers' wives is made. This was supplemented later in the season by a nicely arranged technical exhibit of bottled fruits from the Ontario Agricultural College.

The exhibits are judged every day by experts appointed by the Pan-American authorities. At the end of the season it is expected that diplomas and medals will be awarded to the societies and individuals making the most creditable displays.

An exhibit attracting considerable attention, and which is proving an eye-opener to many who have looked upon Canada as a country of almost perpetual snows and cold, is that of some Mediterranean figs grown at Niagara-on-the-Lake. These figs grow to maturity at this point, and demonstrate beyond cavil that the climatic con-



A Section of Ontario Fruit Exhibit at the Pan-American.



Ontario's Mineral Exhibit, Pan-American Exposition.

ditions of Ontario, at least, are not far separated from those in countries much nearer the equator than we are.

Visitors are accustomed to compare Ontario fruits with those grown in New York State. And it will surprise people unacquainted with Ontario conditions, and many of the people of this province as well, to know that a great many fruits can be produced in Ontario six to ten days earlier than in New York State. The general quality of the Ontario exhibit compares very favorably with exhibits of a similar kind from that state and with any others of the same kind in the horticultural building.

The exhibit is in charge of Mr. W. H. Bunting, of St. Catharines. While the fruit display has been criticised as not containing the best selections in some instances that could be made for the purpose, no blame has been attached to Mr. Bunting, who has discharged his duties very well indeed. With a larger grant for the work no doubt a much better selection could have been made. And even yet it would be a profitable investment for the province to have some expert appointed to select fruit and have it forwarded to Mr. Bunting in proper condition for use during September and October.

In sending us the photographs from which the accompanying illustrations have been made, Mr. Bunting says:

"There is no doubt that the exhibit of fruit from our Province will prove of great value in many ways. The remarkably vague ideas that so many American people have with reference to the country to the north of them is astonishing, and expressions of wonder and amazement are continually heard from visitors from the Southern and Western States, as well as from the large cities in the East, as to the variety and quality of the fruits that are shown upon the Canadian tables. Since the fresh fruits have been in season our people from the various sections of the Province have been sending in a very liberal supply of all kinds of fruit, and our tables, so far, have been kept very well supplied. I have no doubt as the season advances and fruit becomes more plentiful and more varied that our space will be found altogether inadequate for a full and proper display of the fruits that will be sent in. In the meantime, I would like you to assure our exhibitors, through the columns of your valuable paper, that every effort will be made by those who are in charge to secure for our Province every possible advantage that may be obtained both for the individuals and the Province at large."

In the flower displays and competitions so far Ontario florists have captured many of the best awards.

notably for gladioli, carnations and dahlias. And thus the capabilities of Ontario as a country of moderate climate and varied product is attracting considerable attention, and which should result in much advantage to the province and its people.

#### ONTARIO MINES.

Sometimes we have to go from home to learn about ourselves. This is about the feeling one has when inspecting Ontario's mineral display at the Pan-American. There is no more attractive exhibit on the grounds. It is arranged in such a way as to attract attention from almost every point of view. The whole display is massive and gorgeous, conveying to the onlooker the impression that Ontario is one of the greatest mining countries on the continent. And a closer inspection of the exhibits themselves will bear out this view. Indeed, a Canadian who studies this exhibit in detail and learns where the splendid specimens come from cannot but be convinced that the "Land of the Maple" has millions of wealth in the bowels of the earth that he knows not of.

If the exhibit strikes the average Canadian in this way, what must be its effect upon the foreigner who knows nothing of our resources in mines and mineral wealth. There is a notable instance recorded in this connection. The great inventor, Mr. Thos. A. Edison, visited the exhibit a few weeks ago. He was so impressed with what he saw and learned of Ontario's nickel and graphite deposits, that he has since visited the Sudbury district to ascertain if all that was said was correct. That he found it so is proven in the fact that he has opened an office in Sudbury, and engaged a number of prospectors to examine the district. Edison's new storage battery, which is likely to work a revolution in transportation requires large amounts of nickel and graphite in its construction, and hence his desire to locate claims where these can be had in abundance. If nothing further results the province will be repaid many times over for its expenditure on the mineral exhibit at the Pan-American.

The mineral exhibit is in charge of Mr. F. N. Speller, who is to be commended for the enthusiasm and interest shown in his work. He is thoroughly conversant with our mines and the different minerals, and is, therefore, in a position to give valuable information to inquiring visitors. No attempt was made in arranging the exhibit to collect a lot of select specimens which might deceive the unlearned as to the nature of our mineral deposits, but not the skilled miner. Average specimens were selected and these have been brought forward on such a massive scale as to attract the experts attention at once and cause him to make inquiries. The space is not sufficient for all the specimens, and consequently, a number of samples of copper and nickel ores, etc., have been placed at the entrances to the mines building and labelled "Ontario." This gives many the idea that the whole building is taken by Ontario, a not unimportant advantage.



FORESTRY.

In the forestry building is located another exhibit that is attracting much attention. The space allowed for this display is not as large as was expected, and consequently the exhibit is not so massive in appearance as that of mines. Nevertheless, it is doing much to advertise the great timber belts of the country. A number of specimens of staple Canadian woods, finished and unfinished, are shown. Several rolls of dry pulp, staves, handles, canoes, etc., are to be seen and the whole effect is good. An attractive feature of the exhibit is a canoe specially decorated by Miss Heming, of Hamilton, and valued at \$500. The decorations consist largely of maple leaves, acorns, fish and Indian figures which have been made in the wood by burning. Mr. M. C. Swanson is in charge of the exhibit and reports several large sales of Ontario wood and wooden goods, through parties seeing the exhibits.

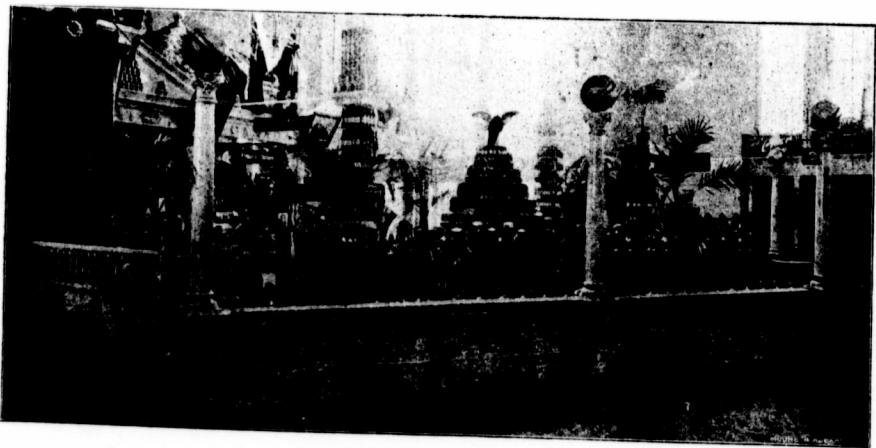
OTHER EXHIBITS.

These include the leading exhibits made by Canada. In the art building and in the ethnological building exhibits are also made, but it will hardly be necessary for us to deal with them here.

Though Canada as a whole, has not made the display at the Pan-American that she is capable of making, yet the attractive character of those sent over will give visitors a better impression of our country and of its people than they have had heretofore. We are an important part of the American continent and it is well that our neighbors should have this fact impressed upon their minds.



A Section of the Canadian Forestry Exhibit, Glasgow International Exposition.



Ontario Fruit Exhibit at Buffalo, Showing Tables of Fresh Fruits and Pyramids of Canned Fruits.

# The Agricultural Gazette

The Official Bulletin of the Dominion Cattle, Sheep and Swine Breeders' Association, and of the Farmers' Institute System of the Province of Ontario.

## THE DOMINION CATTLE, SHEEP, AND SWINE BREEDERS' ASSOCIATIONS.

Annual Membership Fees:—Cattle Breeders', \$1; Sheep Breeders', \$1; Swine Breeders', \$2.

### BENEFITS OF MEMBERSHIP.

Each member receives a free copy of each publication issued by the Association to which he belongs, during the year in which he is a member. In the case of the swine breeders' Association this includes a copy of the Swine Record.

A member of the swine breeders' Association is allowed to register pigs at 50c. per head; non-members are charged \$1.00 per head.

A member of the sheep breeders' Association is allowed to register sheep at 50c. per head, while non-members are charged \$1.00.

The name and address of each member, and the stock he has for sale are published once a month. Over 10,000 copies of this directory are mailed monthly. Copies are sent to each Agricultural College and each Experiment Station in Canada and the United States, also to prominent breeders and probable buyers resident in Canada, the United States and elsewhere.

A member of an Association will only be allowed to advertise stock corresponding to the Association to which he belongs; that is, to advertise cattle he must be a member of the Dominion Cattle Breeders' Association, to advertise sheep he must be a member of the Dominion Sheep Breeders' Association, and to advertise swine he must be a member of the Dominion Swine Breeders' Association.

The list of cattle, sheep, and swine for sale will be published in the third issue of each month. Members having stock for sale, in order that they may be included in the gazette, are required to notify the undersigned by letter on or before the 30th of each month, of the number, breed, age, and sex of the animals. Should a member fail to do this his name will not appear in that issue. The data will be published in the most condensed form.

A. P. WESTERVELT, Secretary,  
Parliament Buildings, Toronto, Ont.

## Tent of Live Stock Associations and Farmers' Institutes at Toronto Industrial.

A tent for the accommodation of members of the Live Stock Associations and Farmers' Institutes will be located, as usual, near the cattle ring on the grounds of the Toronto Industrial Exhibition, August 27th to September 6th. Mr. A. P. Westervelt, secretary Ontario Live Stock Associations, and Mr. G. C. Creelman, superintendent of Farmers' Institutes, will be in the tent each day from 2.00 to 5.00 p. m. and will be pleased to meet any one connected with the Farmers' Institutes or live stock work. Mr. F. W. Hodson, Dominion Live Stock Commissioner, will be in the tent from 9 a. m. to noon each day of the second week of the Fair.

The tent will be provided with seating accommodation, and will be at the disposal of the Agricultural and Live Stock Associations for the purpose of meetings.

Writing supplies will be provided, and it is hoped that those interested may make this their headquarters while attending the Exposition.

Hy. Wade, Registrar of Live Stock, will, as usual, have his headquarters in this tent.

### FARM HELP EXCHANGE.

The Farm Help Exchange has been started with the object of bringing together employers of farm and domestic labor and the employees. Any person wishing to obtain a position on a farm or dairy, or any person wishing to employ help for farm or dairy, is requested to forward his or her name and full particulars to A. P. Westervelt, secretary, Live Stock Associations. In the case of persons wishing to employ help, the following should be given: particulars as to the kind of work to be done, probable length of engagement, wages, etc. In the case of persons wishing employment, the following should be given: experience and references, age, particular department of farm work in which a position is desired, wages expected and where last employed.

These names when received together with particulars will be published FREE in the two following issues of the "Agricultural Gazette" and will afterwards be kept on file. Upon a request being received the particulars only will be published, the names being kept on file.

Every effort will be made to give all possible assistance, to the end that suitable workers, male or female, may be obtained. Every unemployed person wishing to engage in farm or dairy work is invited to take advantage of this opportunity.

### Help Wanted.

Hired man wanted, young and willing to learn; not necessarily experienced. No. 851. a.

Man wanted by the year. Steady employment for suitable person. State wages expected. No. 850. a.

### Domestic Help Wanted.

A housekeeper wanted for man and one child on a farm five miles from St. Mary's. First class references required. Address, Geo. H. Ridley, Wildwood, Ont. a.

### Situations Wanted.

Position wanted on a farm by an Englishman, 22 years of age. Good references furnished. No. 945. a.

Experienced stockman, Scotchman, wants a position as stockman on a dairy farm. Age, 28 years. Recommendations from last employer. Salary \$25 a month, with board and washing. No. 943. a.

Position wanted by young man 23 years of age. Englishman with three years training at an Agricultural College, and six years practical farming. Thoroughly understands butter making also breaking young horses and horse breeding. Strong and not afraid of work. No. 944. a.

**N.B.—Where no name is mentioned in the advertisement, apply to A. P. Westervelt, Parliament Buildings, Toronto, giving number of advertisement.**

### Farmers' Institutes.

Under this head the Superintendent of Farmers' Institutes will each week publish matter relating to Institute work. This will include instruction to secretaries and other officers, general information about Institutes and Institute work, suggestions to delegates, etc. He will also from time to time review some of the published results of experiments conducted at the various Agricultural Colleges and Experiment Stations of Canada and the United States. He hopes to give Institute members some valuable agricultural information which they might not otherwise receive, on account of not having access to the original publications. If any member at any time desires further information along any of the lines discussed, by applying to the Superintendent he will be put in direct communication with the Institution that has carried on the work.

G. C. CREELMAN,  
Superintendent Farmers' Institutes.

## How the Farmers of Ontario Have been Assisted in their Work during the past year by the Farmers' Institute System.

More than one hundred and forty thousand farmers, farmers' wives, farmers' sons and farmers' daughters attended one or more Institute meetings last winter. What they profited, they alone know, but more than twenty thousand were sufficiently interested to pay their membership fees and ask to have sent to their homes all of the literature published by the Ontario Department of Agriculture.

For the readers of the Gazette we are pleased to enumerate at this time some of the things we tried to accomplish, and at the same time we note with pleasure a few good results achieved.

### POULTRY.

At a number of meetings held in different parts of the province during the past winter, poultry has been the special subject for discussion. In or-

Man wanted to work on a farm near Goderich. Must thoroughly understand farming, raising and care of horses, cattle and pigs. A man from 45 to 55 preferred, with wife and either grown or half grown family, who would be willing to work under their father and mother. Must be willing, capable and trustworthy in every respect. No. 842. a.

Wanted by September 1st.—Competent farm hand, to work by the year on a farm in Brant County. Must be able to milk and tend to stock; must be thoroughly trustworthy and capable of taking temporary management. Young man with some education preferred; also one who neither uses tobacco nor any alcoholic liquors. Good wages and permanent employment for the right sort of man. Correspondence solicited. No. 843. a.

Man wanted to look after bees, poultry garden, and to help on a farm. Married man preferred. State wages expected. No. 844. a.

Man wanted to work on a 300 acre farm near Toronto. Everything very convenient. Good wages paid to suitable person. No. 845. a.

Single man wanted to work on a farm. Must be steady and willing to do his best. Farm consists of 250 acres and all kinds of live stock is kept. Man must be a good milker and kind to stock. Wages \$200.00 per year to right man, with board. No. 846. a.

Farm hand wanted by the year to attend to stock in winter and work on the farm in summer, must have some experience in feeding stock or willing to learn. Married or single, if married a convenient house with wood provided. May commence work in October. Permanent situation for suitable man. No. 847. a.

Comfortable house for man and wife on a fruit farm, would not object to one child. No. 848. a.

Man wanted for year to work on farm. Must be good ploughman and milker and willing to do all kinds of farm work. Married man preferred. House and wood furnished, also garden. No. 849. a.

der to obtain reliable data a series of poultry experiments were conducted under the joint auspices of the Farmers' Institute and the Ontario Poultry Association. A full report of these experiments will be found in the report of the secretary of the Poultry Associations.

At these special poultry meetings Mr. W. R. Graham, manager of the Poultry Department of the Ontario Agricultural College; Prof. A. G. Gilbert, of the Experimental Farm, Ottawa; Mr. J. E. Meyer, of Kossuth, or Mr. G. R. Cottrell, of Milton, led in the discussions. The meetings were all of a practical nature, the speaker having live birds before him which were afterwards killed, plucked and dressed, according to the requirements of the home and foreign markets. These poultry meetings became so popular that we have already many requests for similar meetings next year, and as there seems to be a ra-

also received a copy of the report of the Experimental Union, which contains the addresses delivered by such well-known ladies as Miss E. L. Richards, of Boston, Mass.; Mrs. Hoodless, of Hamilton; Miss Laura Rose and Miss B. Maddock, of Guelph during the time of the annual meeting of the Union at Guelph in December.

EXCURSIONS TO ONTARIO AGRICULTURAL COLLEGE

Many thousand farmers again took advantage of the cheap excursion rates and visited the Agricultural College during June. The popularity of this institution continues to increase year after year, and already every date between June 11 and 30 inclusive (Sundays excepted) has been secured by some Institute for an excursion this year.

PROVINCIAL WINTER FAIR.

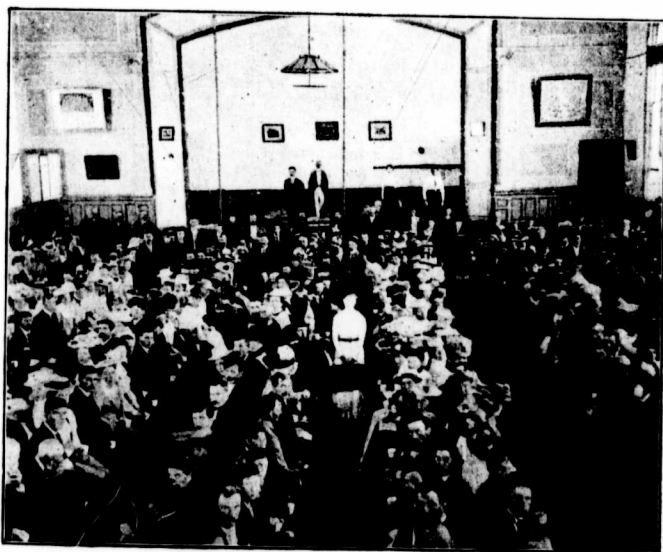
We started early last year to ad-

cultural College; Prof. I. P. Roberts, of Cornell University; Mr. F. W. Hodson, Live Stock Commissioner; Profs. G. E. Day, J. B. Reynolds, H. H. Dean, C. A. Zavitz, and W. R. Graham, of the Ontario Agricultural College; Mr. Thomas Southworth, Director of Colonization and Forestry for Ontario; Mr. Thomas Crawford, M.P. P.; Mr. G. W. Clemons, St. George, and Mr. Dan Drummond, Myrtle.

EXTENSION OF THE WORK.

One new Institute was organized during the past year, namely, "West Nipissing." The Superintendent attended the organization meeting at North Bay, and afterwards meetings were held at Warren, Sturgeon Falls, North Bay, and Cache Bay.

This is a portion of New Ontario where considerable settlement has been made within the last few years, and our efforts to help them in the way of better methods are being appreciated.



At the Ontario Agricultural College, Guelph. Members of the Farmers' Institutes and their Families take Luncheon.

pidly increasing trade for this form of farm produce, we propose to continue special poultry meetings next season.

WOMEN'S INSTITUTES.

Last June we addressed a letter to the women of Ontario asking their co-operation in the formation of Women's Institutes, as far as possible one in each riding, as the Farmers' Institutes are now. We hoped by interesting the officers of the Farmers' Institutes in the work to see at least a dozen Women's Institutes organized during the year. We were hardly prepared, however, to see the ladies take the matter up so enthusiastically, and we are pleased to report that thirty-one Institutes are now organized and holding meetings once a month. Some of these organizations have already over one hundred members, and are doing excellent work.

A special report was published for them this year, and their members

vertise the Provincial Winter Fair and to endeavor as far as possible to secure the attendance of a large number of Institute members. The Fair Board allowed each Institute the privilege of free admission to all its members on payment of five dollars. Thirty-four Institutes took advantage of this offer and 1,518 members passed through the gates. We have heard nothing from these members but the highest praise of the management of the Fair and the educational phases thereof.

All of the speakers who were to address Institute meetings during the winter also attended the Fair, and the annual meeting of the Experimental Union, which was held at the college during the same week.

A special programme was provided for the Institute workers, and the following speakers delivered instructive addresses, viz.: The Hon. Minister of Agriculture for Ontario; Dr. James Mills, President of the Ontario Agri-

Special meetings were also held at Port Arthur, Fort William, and the adjoining settlements of Murillo, Haymer, and Slate River. A splendid meeting was also held at Dryden in March, 170 people being present.

SEED FAIRS.

Four Institutes, namely, East York, South Wellington, West Wellington, and South Grey, have each established an annual seed fair, in March which is reported as a supplementary meeting. The farmers of the vicinity bring in their best samples of grain, and each sample is labelled with the owner's name and address, the amount he has to sell, and the price at which it can be secured. A competent judge awards the prizes and gives his reasons for doing so. A practical grain grower gives a talk on the best varieties of grain for that particular section, and the members arrange to buy or exchange these varieties with one another before seeding time.



The Farmers' Institute and Women's Institute of South Bruce, holding an Orchard Meeting in June at the Fruit Experimental Station near Walkerton.

#### HORTICULTURAL SOCIETIES.

At the request of the Ontario Fruit Growers' Association you saw fit during the past year to transfer the lecture work in connection with the Horticultural Societies to the Department of Farmers' Institutes. We have arranged and held thirty successful meetings. In the programme of these meetings some changes were made. Instead of one speaker as heretofore, two delegates were sent; one lady and one gentleman, and whereas up to this time evening meetings only were provided for in each place, it was arranged this year that the delegates should address the school children in the afternoon. Several secretaries have written to us to say that the innovation has been a most pleasing one, and that they hope the same arrangements will be made again next year.

#### COLD STORAGE

The subject of cold storage and transporting and marketing of our perishable products has been a favorite theme at Institute meetings this year.

During the meeting of the Exper-

imental Union all of the delegates visited the new cold storage plant at the Agricultural College, and were instructed in the different processes of refrigeration by the professor of physics. They also inspected the special car, which was fitted up under your direction for the carrying of perishable fruit from the Niagara peninsula to Montreal for shipment to the Old Country. Each member of the staff also received copies of the Hantsman Pamphlet, and the Pamphlet on cold storage and the utility of collecting stations. They were thus well equipped for their work, and from reports received, much valuable information on this subject has been distributed, and has been highly appreciated.

#### ASSOCIATION OF CANADIAN FAIRS AND EXHIBITIONS.

At the last meeting of this association, held at the Old Court House, Toronto, on February 20, 21, 1901, the Superintendent of Farmers' Institutes was appointed assistant secretary and editor of the association. A number of valuable papers were read and some excellent addresses delivered

by the former superintendent, Mr. F. W. Hodson, Mr. C. C. James, Capt. McMaster and others. We are now at work upon the report, which we hope to have ready for publication at an early date.

#### POULTRY AT FARMERS' INSTITUTE MEETINGS.

One year ago last December the Provincial Winter Fair offered prizes for dressed poultry at their show held in the city of London. They also arranged with Prof. Graham of the Agricultural College, Mr. J. E. Meyer of our Institute staff, and Prof. A. G. Gilbert and his estimable wife of Ottawa to give practical talks and demonstrations on the different phases of the subject, with a view to improving this industry in Ontario. Our eyes were then opened to the possibilities of the poultry industry. Acting under the instruction of the Minister we have this winter held practical poultry meetings and given instruction to more than 5,000 farmers and their wives and daughters.

Meetings were held at the following places:



A Summer Meeting of the Women's Institute, South Ontario, on the Lawn of Mrs. W. L. Smith, near Whitby.



Fruit Experimental

perintendent, Mr. F. C. C. James, Capt. ers. We are now at port, which we hope r publication at an

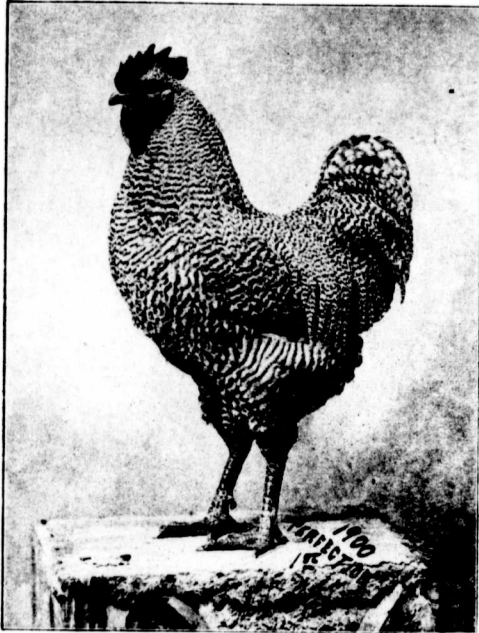
FARMERS' INSTITUTE MEETINGS

last December the Fair offered prizes try at their show of London. They h Prof. Graham of College, Mr. J. E. Institute staff, and bert and his estim- wa to give practi- onstrations on the f the subject, with ng this industry in s were then opened s of the poultry in- nder the instruc- ster we have this ical poultry meet- nstruction to more and their wives

ld at the following



Whitby.



A Typical Barred Rock Fowl.

St. George	January	9th
Foxboro'	"	11th
Havelock	"	12th
Stoney Creek	"	12th
Pakenham	"	19th
Finch	"	23rd
Uxbridge	"	24th
Glen Williams	"	24th
Glen Allen	"	24th
Norval	"	25th
Drayton	"	25th
Bloomfield	"	26th
Cobourg	"	28th
Lansdowne	"	29th
Aurora	"	30th
Oakwood	"	31st
Whitby	"	31st
Oakville	February	8th
Clandeboye	"	14th
Simcoe	"	23rd
Selkirk	"	25th
Wheatley	"	26th
Waterdown	March	1st

Prof. A. G. Gilbert had charge of the meetings in the district east of Toronto, Prof. Graham and G. R. Cottrell covered the western peninsula, while J. E. Meyer addressed the meetings of Division 6, which comprises the ridings of North Grey, Centre Grey, DuRoi, East, South and West Simcoe and North York.

All of these gentlemen agree on the following points:

1st. Our home markets are glutted with a lot of poor, scrawny fowl.

2nd. There is an unlimited demand for plump, young birds.

3rd. Merchants in Toronto and Montreal are paying as high as 10c. per pound for chickens properly fed and dressed.

4th. A flock of chickens properly handled would return to their owner at least one dollar per head per year.

5th. A hen is not a profitable ani-

mal on the farm after two years of age.

6. Pullets are the most profitable winter layers, but they must be hatched early.

7th. During the laying period, to get the best results, hens must be made literally to work for their living. Whole grain should be scattered each day in the litter, so that in hunting for it the hens will get exercise, keep healthy and fill the egg basket.

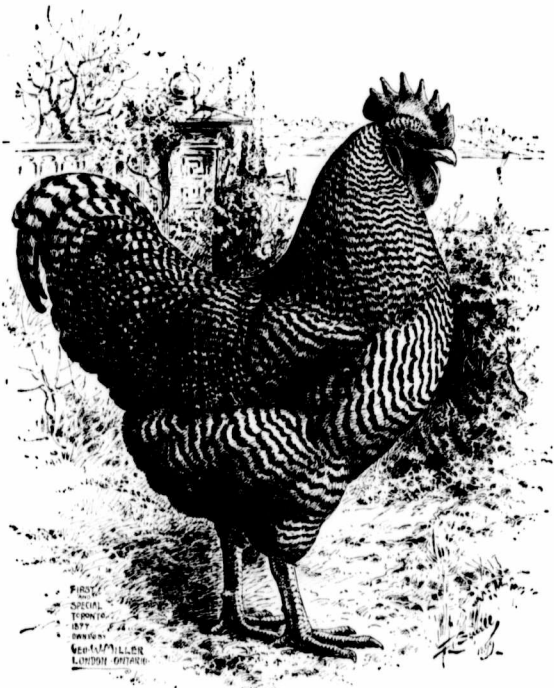
8th. Ground bone is the best form in which animal food can be fed to laying hens. If this cannot be obtained meat scraps from the house and an occasional liver give good results.

9th. Grit must be supplied in some form, as in the absence of teeth it serves to grind the food in the gizzard.

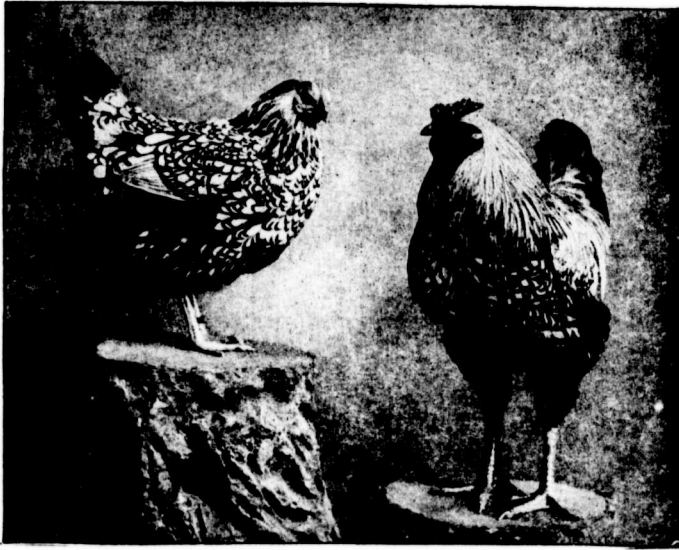
10th. Laying hens must have access to some form of lime from which to manufacture the shells for their eggs.

World's Wool Supply.

The world's supply of wool for 1900 is estimated as having been 2,025,000,000 lbs. This was the smallest supply for any year since 1890, when it amounted to 1,944,000,000lb. According to the calculation of Helmuth Schwartze and Co., the 1900 supply gave a return of clean wool of 1,121,000,000lb. This was a little less than a 50 per cent. shrinkage in cleansing. According to these figures the supply and consumption of wool per head of population in the world for 1900 was 4.45lb. of wool in the grease, and 2.46lb. clean. This was the smallest per capita consumption of wool for a great many years. In 1895 it amounted to 2.91lb. of clean wool per capita.



A Prize Winning Barred Rock



A Pair of Silver Laced Wyandottes.

## Poultry for the Table and for Egg Production

By W. R. Graham, O.A.C., Guelph.

Among the most successful Institute meetings of the campaign were those held at Whitty last winter. The attendance was good, the attention was better, questions were put freely to the speakers, and thirty-three members were enrolled as a result of the day's work.

Significant of the importance of the new development that is taking place in connection with agriculture was the prominence given to poultry, and the interest evoked by the discussion under this head.

The discussion was led by W. R. Graham, superintendent of the poultry department at the O. A. C.

### SEES NO DANGER OF OVER-PRODUCTION.

"One of the principal sources of profit in poultrying," said Mr. Graham, "is in egg production, and to make the most of this you must have eggs in winter. A winter egg will sell for three times as much as an egg produced in the summer."

"But," Mr. Graham was asked, "with the increase of winter eggs will there not be a tendency towards a levelling up of prices the year round?"

"I do not think there is much cause for fear on that score," replied the speaker. "The first year I was engaged in the production of winter eggs the best price I received was 40 cents per dozen. I was offered that same price last winter on board cars at Guelph, and in Montreal at the same time some sales were made at 50 cents—the highest price I ever heard of being paid in this country. And in the big markets of New York and Boston—despite the enormous increase in production due

to the introduction of incubators—prices to-day are not more than 5 cents per dozen below the ruling figure of ten years ago."

### HOW TO GET EGGS IN WINTER.

"One of the first conditions necessary to the production of winter eggs," Mr. Graham went on, "are regularity of food and kindness. The dairyman will tell you how important it is to feed your milkers in the same order and at the same time every day. It is just as important to follow this practice in feeding hens. Hens have a better idea of time than you, without the aid of a watch, would have. And if the fowls are not fed when they think they ought to be fed, they become fretful and uneasy, and the result is loss. When I am away from the college flock they will fall off sometimes, despite the careful training given the students who handle these flocks, as much as 25 to 30 per cent. in egg production in two or three days; and it often takes four or five days to bring them back again to their regular yield."

### WATER IS NECESSARY AS IN DAIRYING.

A plentiful supply of pure water is another of the essential points in handling hens. The importance of this will be more fully understood when it is stated that 66 per cent. of the contents of an egg is made of water.

### ROCKS AND WYANDOTTES.

Are the best winter layers, Minorcas, Leghorns and Andalusians are regular egg machines in summer, but in winter the Rock and Wyandotte beat these all hollow, and, taking the

average of the year, the heavier fowl will come out even, and sometimes ahead. That is where the advantage comes from keeping the Rock and Wyandotte. They give you eggs at a time when the eggs not only bring the highest price, but when they are of the best flavor.

### AND NOW ABOUT FLAVORS.

There are different causes for these. One potent cause is found in the feed used. If you don't believe this, just feed your hens onions for a week. I once fed some chickens onions for a while, and when I killed one of the pullets for the table the carcass was simply so much onion juice. We could not eat it ourselves, and even the pigs, which will eat almost everything, refused that.

### KILL OFF THE SURPLUS COCKERELS.

Another cause of bad flavors is in keeping male birds where they should not be. Vastly too many male birds are kept anyway, and the country is sustaining a very large annual loss in feed alone. It costs 75 cents to keep a rooster for a year, and there are about six times the number of these birds that are necessary for the purpose for which they are required, viz., breeding. But this is not the only way in which loss is caused by keeping too many roosters. The eggs are spoiled for table use. When eight or ten roosters are running with 100 hens, and you frequently see this number in barnyards, the chances are that all the eggs produced in summer will be fertile. If these eggs are exposed to a temperature of 85 degrees for six hours the germs will develop; if the egg is then placed in a lower temperature the

germ will decay and the flavor of the egg goes.

#### OUR EXPORT TRADE THREATENED.

The worst part of it is that the defect in the egg is not shown by candling, and the defective egg is owing to this, often placed in cold storage with good ones. Since the shells of all these eggs are porous, one or two bad eggs will give off a flavor that will injure a whole case of good ones. It is, I believe, mainly owing to this cause that such complaint has been made regarding the quality of our cold storage eggs shipped to the Old Country during the past season. Seventy-five per cent. of these eggs were stale, and if like cause of complaint continues for another year or two our export trade will be ruined. I believe buyers have been paying all that our good eggs are worth, and

you decrease, rather than increase, the egg yield.

"How long can you hold eggs that have not been fertilized?" asked Mr. McGill of Oshawa.

"I kept half a dozen in my dining-room for thirteen months," answered Mr. Graham, "and although all the moisture evaporated in that time the solid matter that remained was not really bad, even then."

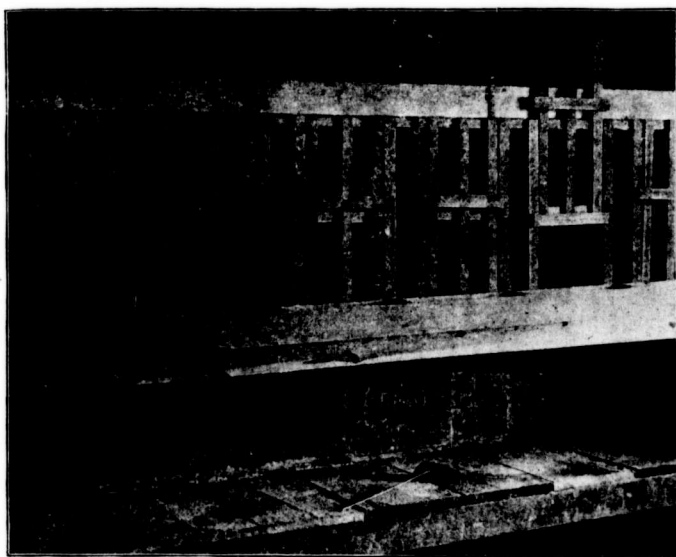
#### HOW TO GET FERTILE EGGS FOR HATCHING.

"But," continued Mr. Graham, "there are times when you want fertile eggs, and it is difficult to obtain them. The eggs produced last March were practically all useless for breeding purposes. The trouble was not local, it prevailed all over Ontario. The difficulty was, I think, due to the extremely cold weather, this preventing fowls from exercising and

in March, while those that gave better results came in April.

"I know," said Mr. Graham, "that Will Secker, formerly of Dunbarton, disapproved of feeding mangels in spring for this reason, but my experience does not show any injury from this cause. I tried an experiment along this line with two pens of layers, one lot were given mangels and the other lot did not get mangels. In this test the proportion of fertile eggs was greater from the fowls that got mangels than from those that did not.

"I will tell you one thing that I have observed. We use our breeding cocks for object lessons in the classroom work with students. The cocks are then in sight of each other for perhaps the first time in days, and they at once begin to crow defiance and get ready for a scrap.



Crates for Fattening Poultry.

unless a better quality is supplied next year, the prices that have ruled during the past two years cannot be continued.

This matter affects our local as well as our export trade. You may gather your eggs every day, but if these are not used at once, and are kept by the purchaser in a warm place, they will be off flavor before they are consumed.

#### FERTILE EGGS EVEN WHEN FRESH ARE NOT A L.

Even absolutely fresh, fertile eggs are not equal in flavor to those not fertile. I have tested this matter, and, as a result of what I have observed, I believe that 75 per cent. of those who eat eggs will detect the difference in flavor between one that is fertile and another that is not. Save for breeding purposes the males should never be allowed with the hens, you spoil the flavor of the egg by allowing this; you waste the feed taken to maintain useless cocks, and

keeping up their vitality. The best results that I have ever had in breeding from March eggs was once when I had a house with a south and southeast exposure, and with free access for the fowls to a pile of horse and cow manure."

"But what would be the effect on eggs for table use of the freedom of the hens with the manure pile?" Mr. Graham was asked.

"I am afraid it would not be any too good," Mr. Graham answered.

#### MANGELS AND FERTILITY.

"What is the effect on the fertility of the eggs of feeding mangels to hens in the spring?" asked John Davey. "I had poor results from my sittings when the hens were fed mangels last spring, and when I stopped feeding the roots the results were better."

In answer to a question by Mr. Graham, Mr. Davey said the eggs that turned out badly were produced

This seems to stimulate the vitality of the birds, and we get a high proportion of fertile eggs directly after the cocks are taken back to the pens."

"Then," suggested an auditor, "it would seem as if it would be a good thing when a lot of fowls are kept for breeding purposes to occasionally bring the males from the different pens in sight of each other."

"I think it would," said Mr. Graham, "and I am trying experiments along that line now."

#### AS LONG AS COMBS DO NOT FREEZE.

"How about the temperature required for a poultry-house?" asked another.

"It is all right as long as the combs of the fowls do not freeze," answered Mr. Graham. "And injury to the fowls, even in a moderately cold house, may often be prevented by dropping a curtain from the ceiling in front of the roosting place."

"How do you provide for ventilating your pens?" was another question.

"I have never had a ventilator that worked satisfactorily," answered Mr. Graham, "and now I trust entirely to doors and windows. In moderate weather I allow the door to stand open for some time every day, and feel disposed to recommend opening it a little no matter what the weather is like."

"How do you provide for the escape of vapor where there is no ventilator?" was asked again.

"I admit the advantage that would come from the use of a perfect ventilator—one that would give you ventilation without creating a draft," replied Mr. Graham, "but I have not yet found one that would do that."

#### ROUPE AND ROUP.

"One of the principal troubles," Mr. Graham went on, "is that hens have too little room in the pen during the day, and are too much crowded on the roost at night. When

"chickens will naturally crowd together in winter time," said Mr. McGill.

"Especially if they are allowed to get into that habit when young," answered Mr. Graham.

"Old fowls will crowd too," said Mr. McGill again.

"So long as the roost is long enough they will not hurt," responded Mr. Graham.

#### HOW TO DETECT ROUP.

"Where a fowl suffers from roup," the speaker went on, "there is a discharge from the nose, and the odor from the discharge is so pronounced there is no mistaking it. I can tell if there is roup in a poultry house as soon as I open the door. Drafts are one of the chief causes of the trouble. The disease is contagious, too. The discharge from the nose gets into the water the fowls drink, and thus creates a regular hot-house for propagating the disease. Unless the healthy fowls have sufficient constitutional vigor to shake off the disease

contribution will bear up for days under conditions that cause disease, while the weakly ones succumb.

#### ONIONS FOR A COLD.

"Where you find your fowls suffering from colds you will find a couple of raw onions a week a great help. Onions are bad for egg flavors but they help with a cold in the case of hens, just as they do in the case of people. Coal ashes in the dust bath have a good effect. The ashes go up the nostrils of the fowls and thus cause benefit. In many cases these will cure a mild cold. A little coal oil on top of the water, with no other drink near, so that the suffering fowls are forced to drink the oil, will also prove helpful.

#### WHAT TO DO WHEN ROUP APPEARS.

"Where you find roup fowls isolate them at once. If the house is badly infected, spray it with a five per cent. solution of carbolic acid, and, while the walls are still damp, fumigate with sulphur. Sulphur fumes are of little use on dry walls, but where the walls are damp the fumes are almost certainly fatal to germ life. If roup germs are once firmly planted in a poultry yard it will take years to get rid of them; they seem to get into the ground. As one precaution against infection we use a pint of crude carbolic acid to a bushel of lime, and spread some of that over on the dropping-board. If you have only one or two fowls affected with roup—unless they are exceptional value for breeding purposes—I would recommend immediate slaughter and burning of the carcass. In fact, I would be inclined to advise this course in any case, as I do not like breeding from birds that have once suffered from disease."

#### MASH NIGHT OR MORNING.

Speaking of feeding, Mr. Graham said: "There is a difference of opinion as to whether the mash feed should be given at night or in the morning. Those who favor giving it in the morning say the fowls need something to warm them after the cold night. Our practice is to feed the mash in the afternoon and to rely on other means for warming in the morning.

"This is how we do it. Late in the evening the hens are given a ration of whole grain scattered among litter that covers the floor to a depth of six or eight inches. All of that grain is not taken up by the fowls at night. In the morning, when the hens get off their roosts they begin to scratch for the remainder, and the exercise warms them up better than any mash would do.

#### PULPED ROOTS IN THE MORNING.

"The first regular feed of the morning consists of pulped roots, and is given at nine o'clock. In roots I place sugar beets first, mangels second, and turnips third in point of quality. I aim to make roots one-third of the total weight of the ration, and by pulping the roots and making these the first regular feed of the morning I get the fowls to take more of these than they otherwise would. Two to two and a half



A Crumming Machine for Fattening Poultry.

on the roost they are jammed together, and when on the floor they have not room for exercise. That is one of the most prolific causes of disease, particularly roup, and roup is one of the chief difficulties in connection with poultry production. Although I have read all the roup literature I have been able to lay my hands on, I have not yet been able to find a positive cure for the disease. The wise thing is to try and prevent the disease from getting in. One of the best means of protection is to allow plenty of roosting room. Each fowl should have at least ten inches of space on the perch. Where fowls are crowded together on the roost if you put your hand between the bodies of the hens in the centre you will find the feathers are damp, owing to the excessive heat, causing perspiration. When a hen in that condition gets down into the colder air next to the floor, you have conditions exactly calculated to cause colds, from which roup springs."

they are almost certain to suffer.

#### EFFECTIVE METHODS FOR BREEDING.

"This is one point, where the importance of care in selecting your breeding stock comes in. Breed only from your strongest stock. One of the evidences of the possession of constitutional vigor is found in the beak. Select as a breeder a cock with stout, well curved beak; look, too, for a fairly broad head and a bright active eye. A good constitution nearly always goes with these points.

"Other points of importance are a broad breast and broad shoulders, with the breadth carried moderately well towards the tail. You have heard of the 'sickle back' in horses; beware of a like defect in cockerels. Select a male with legs well apart and that stands straight on his supports. I have demonstrated by experiment that this leg weakness is hereditary, and I have also proved by experiment that fowls with a good



bushels of roots are required for 300 hens."

#### EARLY FEEDING IN THE MORNING.

Then you think it a mistake to feed hens early in the morning?" said a hearer.

"That depends," Mr. Graham answered. "If I made mash the first feed I would give it as early as possible. But you see the little grain left over from the night before not only keeps the hens going until nine o'clock, but gives them exercise as well. It may be remarked just here that this exercising may be overdone. What is exercise for the Leghorn? work for the Rock. I like to weigh hens every two weeks or so, and if I find them putting on weight I reduce the grain ration somewhat.

#### MEAT EVERY DAY.

"At noon," Mr. Graham went on, "I feed cut bone or cooked meat—about two handfuls for a dozen hens. By feeding meat every day, and a little at a time, you are less liable to bowel trouble than when you feed a lot at once and at less frequent intervals."

#### MASH AT FOUR O'CLOCK.

"At four o'clock I feed the mash; this is usually made up of bread crumbs, clover leaves, bran and fine ground oats. In extremely cold weather I add a little cornmeal or pea meal. This mash is mixed with skim milk, and the hens get all they want of it. The last feed is whole grain—a handful per bird—and this, as I said before, is not all taken up at night—about half of it will be left over till morning. Briefly, then, my system of feeding is:

"Pulped roots at nine.

"Cut bone or cooked mash at noon

"Mash at four.

"And whole grain last thing."

#### THE COST OF MAINTENANCE.

"And what do you figure the cost of feeding at?" asked Mr. McGill.

"Eighty cents a day."

"Then you must get your feed cheaper than farmers can if you feed 365 handfuls of grain besides all that roots and mash per hen."

"It depends on what you call a handful," answered Mr. Graham. "In our case a peck of grain serves for 250 hens at night and we consider that equal to a handful each. I am satisfied I could bring fifty hens through, feeding in this way, at a cost of fifty cents per hen."

#### WHY MASH IS NOT FED IN THE MORNING.

Speaking of his objection to feeding mash in the morning, Mr. Graham said: "If you give mash in the morning a few hens will boss the pen and get more than their share; then after their gorge they will go to the roost and stay there all day. Where grain is fed in the morning, and scattered in the litter, each hen gets a fair share. When we feed mash at night we give the hens all they will eat, and then all get enough, and the gorging does not hurt them, because the work of laying is over for the day. There is no danger of the crops freezing. We have a hen house sheeted with matched lumber where

this system of feeding is followed, and we have never had any trouble.

#### DANGER IN TOO MUCH GRAIN.

"I am satisfied that the majority of people feed too much grain in winter. Where this is done a lot of fowls are lost in spring. If the dead fowls are opened their livers will be found twice the natural size, and of dark purple color. This is the result of feeding too much starchy food and a lack of meat and vegetable diet. We aim to make a third of the weight of the ration vegetable food and ten per cent. of the whole meat."

#### EARTH FOR LAYING EGGS.

In reply to a question, Mr. Graham said he had experimented with putting earth in the nests of setting hens; he had set twenty in a row and put earth in alternate nests, and in all cases obtained the best results from those nests in which the earth was.

"Still," said Mr. McGill, "you will often find an eye-bolt hatch come from a stolen nest in a haymow. I think that with eggs, as with corn, a good deal depends on the quality of the seed."

#### ABOUT INCUBATORS.

Speaking of the handling of incubators, Mr. Graham said the incubator should not be opened when the eggs were shipped, as it was necessary for the good of the chicks to retain the moisture. Unfertile eggs should be removed from the incubator as soon as discovered, because they take in but do not give off heat, and thus cause an unevenness of temperature among the hatching eggs. Where the big percentage was made in hatching by machine this was sometimes due to the starting of three machines at once and then placing the eggs with strongest development of germ all in one machine, selected for the test, before the conclusion of the trial. Still, after all, an incubator would give as large a percentage of chicks as a hen, and the incubator did the hatching when desired.

A two-hundred egg incubator would use a gallon of oil per week in weather such as that of last week. The machine that was doing this was in a stone cellar, two feet below and two feet above ground, with the wall banked. "We must remember," said Mr. Graham, "that the shell of the egg is porous, and that it is therefore as necessary to have pure air before hatching as it is after hatching."

#### THE FATTENING SIDE OF IT.

"There is money in fattening poultry as well as in producing eggs," said Mr. Graham. "But to make the profit it is to have the right type in fowl as it is to have the right type in a beefing steer.

We made our experiments along this line for the purpose of showing the relative gains with Wyandottes or Rocks and common fowl. The pure-bred pens gained 14, 17, 19, and 23½ pounds respectively, while the common fowls gained 8, 11, 9 and 17 pounds. Moreover, the cost per pound of gain was three cents in the case of the pure-breds, and five cents

in the case of the mongrels. We thus made from about 30 to over 100 per cent. greater gains in the case of the pure-breds, and the gains in the case of the pure-breds were made at a little over half the cost incurred in making gains with the mongrels. In buying for feeding I would have more profit and satisfaction out of pure-breds than out of scrubs bought at half the price. In addition to all this the pure-breds sold for more per pound. For choice fowls I was offered by a Montreal dealer 10 cents on board cars at Guelph for all I could produce. One pure-bred made a gain of 3½ pounds, making 7½ pounds all told, and this I sold at 14 cents dressed, or a little over \$1.

#### DORKING RIGHT IN TYPE, ETC.—

There is no better type of a table fowl than the Dorking, but the Dorking is a natural forager, and does not thrive in confinement. Rocks and Wyandottes, on the other hand, fatten well in confinement.

In feeds for fattening we have found fine ground oats give better satisfaction than coarse ground. Ground wheat has not proved a success, even where it constituted only a third of the ration. It makes a sticky food. We lost, from indigestion, a twelfth of the birds fed in this way.

We got our best results from two parts cornmeal, two parts ground buckwheat and one part ground oats. This gave us a greater gain in a given time and at less cost than any other feed.

A ration that gave very good results was one composed of equal parts of cornmeal and fine ground oats, with a small quantity of potatoes added. Where there are a lot of small potatoes to be disposed of, this will be found a very satisfactory ration.

"In all cases we mixed milk with the meal in the proportion of pound for pound. This was for feeding from the trough. Where we used the crammer the proportion was two pounds of milk to one of meal.

#### LOSS IN MOVING FOWLS.

We found our chickens made a greater gain in the second than in either the first or last week. The slow gain in the first week is due to the excitement and crowding incident to removal from the barnyard where raised to the fattening station. My brother tells me he has known chickens to actually shrink one-fifth as a result of driving twenty miles in a crowded coop on a hot day. For this reason I am inclined to think it would be better for each farmer to do his own fattening, unless fattening stations can be built up so near together that the birds will not need to be driven more than four or five miles in order to reach them.

#### CRAMMED FOWLS BEST FOR THE TABLE.

There is an advantage in cramming fowls. I had one lot of twenty, half of which were crammed and half not. In every case, save one, the crammed birds were reported to have plenty of meat, and to be well fattened, while those fed from the

trough only had plenty of fat, but lacked meat. There was a difference, too, of three-quarters of a cent per pound in the selling price, and of half a pound per bird in the gains, in favor of the crammed birds. The flesh of the crammed bird is much more juicy and tender, and people who have become accustomed to this class of bird do not care for those fattened in the ordinary way. They can tell the difference, too. I have tried experiments with officers of the College, have tried to unload uncrammed birds upon them, but in all cases, those who ate the fowls noted the difference.

#### COLOR OF FLESH CONTROLLABLE

The color of the flesh of the carcass is a matter of importance. So far as my experience goes, the demand both here and in England is for a creamy white flesh. You can largely control the color by feeding. Cottonseed meal, yellow carrots and yellow corn will give a yellow carcass, while ground buckwheat and skim milk, ground oats and skim milk or a mixture of these, will give a creamy white. I tried five or six experiments with fall brothers along this line, and they all turned out the same.

#### A Curtain in Front of the Roosting Place.

F. C. Hare, speaking at the Farmers' and Dairymen's Convention, held at Frederickton, N. B., on winter egg production, said it was a good thing to have a curtain in front of the roosts and to drop this down at night. One man, who's hens had not been laying in winter, adopted this simple device, and in three weeks' time he was getting forty eggs per day. Mr. Graham of the O. A. C., it will be noted by the report given of that gentleman's address at Whittby, also commends this practice. Mr. Hare advised against using too much soft food, and urged the use of plenty of green food, such as mangels, turnips and cabbage.

#### A Poultry Course.

Superintendent Graham, of the poultry department of the O. A. C., says that anyone who wishes to take a special poultry course at the college may do so on payment of a fee of \$5 for tuition. Students taking this course may stay as long or as short a time as they wish, but they have to pay their own board, and do not receive payment for any work they may do. There are scores of young men in the province who could not do better than to take a month's poultry course this winter. There is no more profitable industry, in a small way, than poultrying, and no man is better fitted to tell how this business should be carried on than is Superintendent Graham.

#### Never Too Late

"I'm eighty years and never smoked in my life."  
"Well, don't get discouraged; you probably will afterward."

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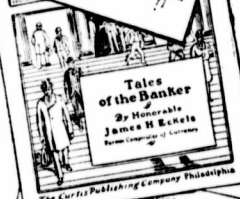
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#### Strayed and Stolen.

"A little nonsense now and then  
Is relished by the best of men."

What makes the rabbit wiggle its nose so? Because its tail is too short to wiggle. Like the little boy with holes in the toe of his socks, said toes wiggle and heels don't.

Mike (to chemist)—"The doctor said: "Take wan of these pills three toimes a day." I took wan av thim wanst, but the man doesn't live thot kin take wan av them three toimes!"

Miss Gull—"Mr. Joakley was telling me about a remarkable tadpole he has in his aquarium." Miss Gill—"What

was remarkable about it?" Miss Gull—"Why, he says when he got it it was only an inch long, but in a week or so it had grown two feet."

"Why did that young man leave so suddenly?"

"It was my fault," answered Mammie. "I thoughtlessly got to talking about the beautiful autumn haze by the river. I forgot he was a West Point cadet."—Washington Star.

Wigwag (finishing his story with a smile) — And that's the way he killed the goose that laid the golden egg.

Guzzler (just waking up) — Well, we ought to be glad he didn't kill the cow that gives milk punches.

## Studies in Nature

### A Review of Insect and Bird Life on the Farm

Edited by C. W. Nash.

During the past twenty-five years, the progress made in the productive branches of the science of agriculture has been great, our farmers having, as a rule, fully realized the fact that if they are to succeed in keeping the productions of their soil in quality and quantity equal to that of other nations, they must acquire a thorough knowledge of the natural laws which govern the production of plant and animal life and apply that knowledge to their every day practice on the farm. There are no people in the world engaged in farming who are possessed of greater mechanical skill in working the land than are our people, and our farmers are generally supplied with the very best implements that are produced in the world; but the best implements and the greatest possible skill in using them will fail to give the desired result if used upon a barren or a worn-out soil. In other words, the necessary elements of plant life must be in the soil before skillful cultivation, with good tools, can render them available for the proposed crop. The why, when and how to provide the essentials for each particular plant we raise, are slowly, but surely, being mastered by those who are willing to learn and the nature and habits of the plants themselves are being carefully studied, so that their necessities may be provided for in the most economical way. So far but little original work has been done with the object of producing new varieties of the plants we cultivate. In this direction there is great scope for the scientific agriculturist who will devote some of his energy to nature study and experimentation. Careful work would no doubt result in the production of varieties much better adapted to their surroundings in this country than those we now have, and in much profit and honor to the producer.

The laws of nature which govern the production and feeding of our domestic animals and poultry are of late years being much more closely studied than formerly, with the result that our specialist stockmen have in most cases been able to keep their animals up to an equality with the best types of the various breeds to be found in other lands. There are, however, still far too many of our farmers who are content to proceed with their stock raising operations in a happy-go-lucky sort of way, their horses are just horses, and their cows are cows, none of them adapted for any special purpose, and consequently, of no great value anywhere. These men can hardly be made to understand that there are certain laws and processes of nature, which, if known and rightly used, would enable them to build up from the comparatively worthless animals they now have, a herd of great value.

yet such is actually the case; they forget or perhaps never knew, that all the splendid breeds of domestic animals we have to-day were gradually built up from very inferior types, by men who had studied the laws of nature bearing on the matter, and who put into actual practice the knowledge they gained.

I do not very often, in these columns, refer to the productive or constructive side of the science of agriculture, this department being more particularly devoted to the destructive forces, which counteract our best efforts at production, and to the protective agencies, which assist us in preventing the destruction. As, however, the whole science of agriculture is but one branch of "nature study" the field legitimately belongs to me, and, therefore, I shall not hesitate about wandering over any part of it when occasion requires.

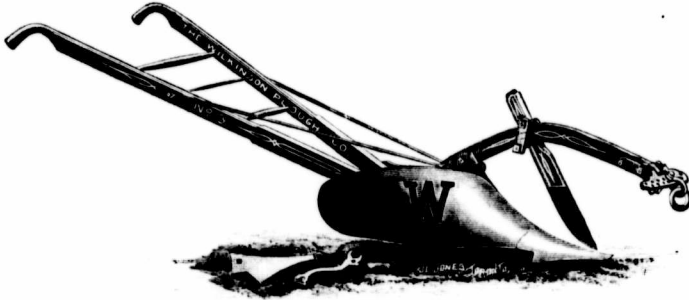
When our politicians and government officials want to flatter us, they tell us that agriculture is the source of all the wealth produced in the country, and that the farmers are the most necessary and important class of people in the community. If this be true, and no doubt it is, why is not more attention paid to the proper education of the young people who are to grow up into the famous cultivators of the lands of the country? Why not give these young people a chance to acquire, at any rate, the elementary principles of their future profession whilst they are at school? The art of farming can only be learned by practice on the farm, but the more important part, the science of farming must principally be obtained by studying the results of the work of specialists in each branch of it, and this study can hardly be entered upon too soon nor continued too long. A little work in a half hearted sort of way, has been attempted. Our people should see to it that in future, it be done in earnest. Mr. C. C. James, M. A., Deputy Minister of Agriculture for Ontario, recently published a pamphlet on "The teaching of Agriculture in our public schools," which should be carefully read by every man and woman who takes an interest in the welfare of our country.

While we have, undoubtedly, increased our knowledge of the productive side of the science of agriculture, and are putting that knowledge to practical use, we have not made as great an advance in the knowledge of how to protect the product of our lands from the destructive forces that prey upon it; and there are far too many of our people, who having the knowledge of what to do and how to do it, are neglecting to act upon the knowledge they have. Now it must be obvious to everybody that it can serve no good purpose to raise large crops of the best quality, if we are

going to permit those crops to be damaged or destroyed by some disease or natural enemy before we can harvest them, and turn them to profitable account. A perfect knowledge of how to protect our crops is of more importance to the country than a knowledge of how to produce them, because if a farmer, by reason of his want of skill, fails to produce a profitable crop, he alone suffers, but if he fails to protect his crop and permits some pest to destroy it, that pest will so multiply and spread that the crop of the whole neighborhood, or even the whole country, may be endangered; and just here is where we meet with the greatest difficulty in inducing people to take proper measures for the destruction of noxious weeds and insects. Many of them will argue, that it is of no use their preventing the weeds in waste places from going to seed, because their neighbors won't do it, and for the same reason they refuse to spray their trees or make any effort to check a plague of insects. If we are to stop the spread of noxious weeds and to get the upperhand of the swarms of insects and other pests that cause so much loss every year, the work must be general. If the individual farmer will not do it the municipality should do it for him at the proper time and charge him for it. Fortunately for us the whole work of keeping in check the various enemies of our cultivated plants does not entirely depend upon our own efforts. There are certain protective forces provided by nature, which by preying upon the destructive ones, prevent their increasing to such an extent as to entirely destroy the balance of life. In many cases, however we have in our ignorance of the subject, or in mere thoughtlessness, made war upon our best friends, and have so decreased their numbers that they are no longer able to exert their proper influence in restraining the increase of our crop enemies, we are therefore compelled to supplement their work by mechanical devices of our own, at the cost of much money and hard labor. An important case in point is that of the hawks and owls; a few of the hawks, viz.: The goshawk, sharp shinned hawk, Cooper's hawk, pigeon hawk and duck hawk, and the great horned owl may be considered injurious to the farmers' interest by reason of their destruction of poultry and useful birds. The six other species of hawks which occur regularly in the province, and all the rest of our owls are more or less beneficial, some of them particularly so, their food consisting almost entirely of the small rodents (rats, mice, etc.) which are so terribly destructive to our property. The loss caused by these little animals is now large enough, but as yet, we

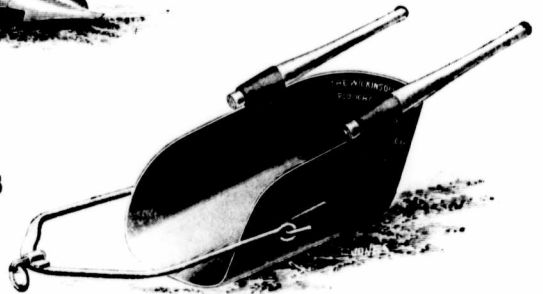
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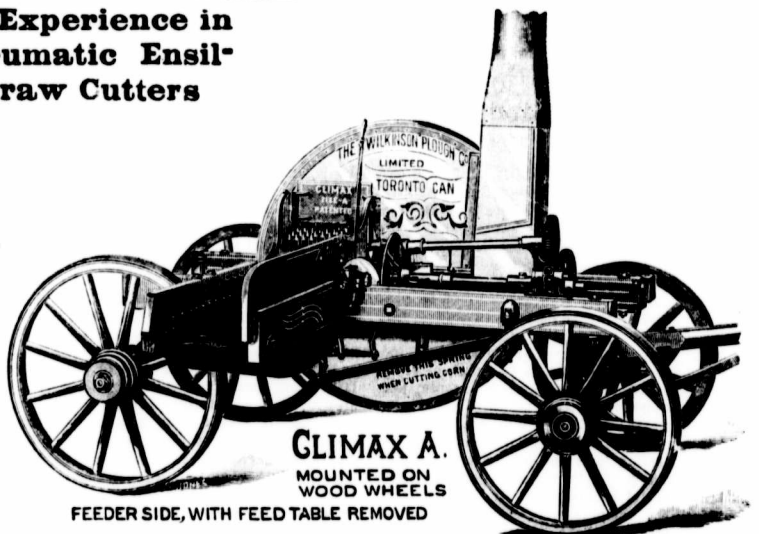


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have never in Canada experienced a real plague of them, as they have in other parts of the world, and therefore, we do not realize the danger that we may perhaps have to face. Among the six species of hawks that are beneficial, there are two that are particularly valuable, viz., the rough legged hawk, the largest of our Canadian hawks, and the marsh hawk, which may often be noticed sailing low down over the fields and grass lands. These two have, I believe, been more persecuted than any others, because as they fly low when feeding they are easily shot. Yet they are never guilty of injuring anything that is of value to us, but on the contrary, render us such valuable service, that they may justly be called the guardians of the meadows. These two together, with some of the other large hawks are popularly known as "hen hawks," why, I don't know, possibly because they never, under any circumstances, do kill a hen. But because this name has been applied to them, people assume that their whole mission in life is to destroy poultry, and they consequently, shoot them at every possible opportunity. The inability to distinguish between the beneficial and injurious species is at the bottom of the trouble, when that is removed it is safe to predict that the beneficial hawks and owls will be allowed to exercise their vocation of destroyers of vermin in safety, to the great advantage of the country. Although, as I have remarked, we have not as yet suffered from a real plague of rats and mice, we are continually meeting great loss from the depredations of insects, which affect every form of vegetable life. Borers work their way into the trees and destroy them; leaf eaters by individual and combined attacks devour all the foliage, curculios and grubs of various kinds, enter the fruit and render it worthless, while weevils and some others attack the grain after it is harvested and rob the farmer of his reward. While these classes are at work upon the exposed portions of our plants, others, and by far the most injurious kinds are beneath the soil eating away the roots and fibres which provide them with nourishment, whilst cut worms, by severing the stalk at the surface of the ground entirely destroy every plant they attack. How to reduce the number of these pests is a question of the greatest importance to the whole country. Something is being done, but at considerable cost by our own mechanical devices. Much more, however, can be done at little or no cost by intelligently encouraging and protecting our birds, until they shall have increased sufficiently to be able to do the work for us. Every class of bird has its particular work to do, and the destruction or serious reduction of the individuals comprised in any class, means a corresponding increase in the number of insects which it is the special mission of those birds to keep in check. The woodpeckers are specialized to enable them to dig out the borers that live in the trunks of trees. The thrushes, meadow larks and blackbirds feed

largely upon such insects as hide beneath the surface of the ground. Warblers, vireos, cuckoos and orioles gather their food from among the branches. The flycatchers from some post of observation, dart out and capture every winged insect that passes within their range; whilst the swallows and nighthawks are constantly engaged in clearing the air of the myriads of flies and midges, which if not kept in check, would render life unendurable to man and beast. Nor must it be supposed that the birds are the only forces in nature which assist in reducing the number of our insect foes. Bats, snakes, toads, frogs and a great number of predaceous and parasitic insects all exert a beneficial influence in that direction, but many of these creatures, like the birds, have been so persecuted that their numbers altogether are insufficient to enable them to cope with the prolific forms of life that devour our crops. What then can we do to stop the destruction of the birds and other forms of life that are beneficial to our interest, experience has shown that laws are of but little use in accomplishing any reform unless sustained by an intelligent, sympathetic public opinion, and this is what we require to cultivate on behalf of our birds. We have a protective law which is amply sufficient if it was only properly enforced, supplement this by educating our young people as to the real value of our feathered friends, and then if every farmer would protect those upon his own lands the question would be solved.

There lives in Paducah, Ky., a blind mechanic who can and does place laths as evenly and drive nails as truly as any workman gifted with sight. He puts up his own scaffolds, and does as much work in a day as any man in his trade.

Professor Hats Tietgen is reported to have discovered plants which are sensitive to music. One of them is said to unfold its leaves at the sound of a melody but to close them at once if discords are played. Music, it is further stated, stimulates the growth of certain varieties.

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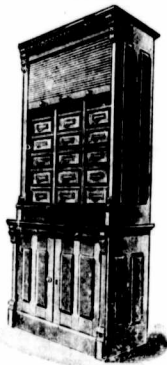
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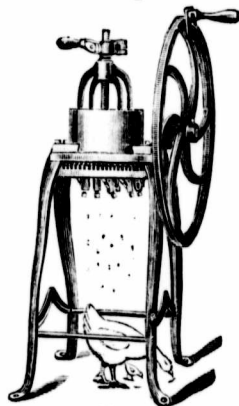
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Devoted to Sugar Beet Culture in Canada and Allied Industries. Specially  
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Edited by JAMES FOWLER

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## Sugar Beetlets.

Over 68 per cent. of all the sugar manufactured in the world is made from sugar beets.

You are using beet sugar every day if you use any granulated sugar at all.

Beet sugar is absolutely pure white granulated sugar.

Each man, woman and child in the United States consumes on an average 78 pounds of sugar a year.

The inhabitants of the United States spend more money for sugar than they do for flour.

Over 306,000,000 pounds of sugar was imported into Canada last year.

There is no more need of importing sugar than there is wheat. Canada can produce her own sugar.

The sugar beets are the finest table beets.

The sugar beet is not a tender plant, and will not be injured by spring frosts that would kill corn.

The value of a sugar beet is in quality, not quantity.

The farmer is the one most benefited by the establishment of a sugar factory.

The establishment of the beet sugar industry will enhance the value of all farm properties.

Beet tops furnish excellent cattle feed.

The beet pulp from the factories is a very valuable stock food.

A few acres of beets will support more people and give more employment than any other crop.

It requires \$500,000 to build and equip the average beet sugar factory.

It would require 30 beet sugar factories capable of slicing 500 tons of beet every 24 hours to supply the people of Canada.

The natural conditions of Ontario for growing sugar beets and the manufacturing of beet sugar exceed any country on earth.

The Ontario farmers are the most successful growers of root crops in the world.

At four dollars per ton the farmer can make five times as much per acre from sugar beets as from the average farm crop.

The sugar beet is a cash crop, and the introduction of a new cash crop to diversify the old system, is full of promise to the farmers and the business public.

The children can work in the beet fields, and earn as much money as a man working in the harvest field.

Sugar beets require but a small acreage and offer special advantages for the boys and girls to make some money and get started in farming for themselves.

## Walkerton.

Mr. Patrick Heffernan, Provisional Director of the Walkerton Sugar Co., has been trying to interest Hamilton capitalists in a factory to be built at the former place, and reports meeting with considerable success. The Walkerton people have an understanding with some capitalists that so soon as a certain amount of stock is subscribed, the balance required will be forthcoming, and strong efforts are being made to secure the amount necessary to assure the building of a plant.

## Newmarket.

The proposition under consideration for some time in regard to the building of a 600 ton sugar plant, made by an American gentleman, has been rejected by the Finance Committee of the town and the deal is off. Another and more favorable proposition has been made by parties, mostly Canadians, and the matter is now under consideration with every prospect of it being accepted.

## The Beet Sugar Industry.

The beet sugar industry, which bids fair to become one of the most important industries in Ontario, has, like every other industry, had a hard struggle for existence in other countries, but by persistent effort every obstacle has been overcome and it is now recognized as one of most vital importance. In Germany, Russia and some parts of France the farmer would not be able to exist without raising sugar beets. The United States has spent millions of money in encouraging the growing of sugar beets, and conducting experiments in mostly every state in the union. The wonderful results shown in the State of Michigan alone fully justifies the expenditure of all the money and labor. Michigan has at the present time 13 factories, all built within the past three years, and this year it is expected they will produce at least 90,000,000 pounds of granulated sugar.

The soil and climatic conditions of Michigan are not more favorable to the growth of sugar beets than in most parts of Ontario, and what has been done there can be accomplished here. The Ontario farmer is the most successful grower of root crops in the world, and he only needs to become familiar with the requirements of the sugar beet and the methods of cultivating it to produce large quantities, containing a very large percentage of sugar. It is the sugar in the beets that is of value, and a proper method of cultivation with good soil will put the sugar into them. That we have the soil and climatic conditions, has not only been demonstrated by actual experiment and the growing of beets, but we have it upon the highest authority on this continent. Mr. P. H. Wiley, of the Department of Agriculture of the United States, in his report to his government, after a very careful and exhaustive study, says: "It is easily demonstrated that the great centre of the sugar beet industry on this continent would be in Canada and not in the United States."

### HISTORY OF THE BEET SUGAR

The history of beet sugar dates back to the time of Napoleon I., when in March, 1811, he gave his first encouragement to the industry by appropriating \$200,000 for the study and culture of the beet. From 1812 to 1835 France was the chief nursery of the industry, in the meantime Germany struggled along with the industry, and later became the leader in the production of sugar in Europe, which it has maintained, and during the year 1900 had under cultivation in sugar beets over 1,250,000 acres, and has at the present

time over 100 sugar factories. Austria, France, Russia, Belgium and Holland have erected a large number of factories, while in the United States there are 38 ready for operation this year.

#### IN THE UNITED STATES

The history of the industry in the United States is interesting. Away back in the thirties the Society of Shakers began the growing of sugar beets, and in 1838 the first factory was built, but was not a success. Many other efforts were made with varying successes, and it was not until 1890 that it could be said the business was successful in the United States. It was not until 1897 that the industry began to take a stride. In 1899 there were 18 factories in operation, and the year 1901 will close with 38 successful sugar plants.

#### QUEBEC'S EXPERIENCE

In our own country, encouraged by a bounty from the Dominion Government and further assisted by the Quebec Government, three attempts were made during the eighties to establish the industry in this country at Coaticook, Berthierville and Farnham, but the results were disastrous, and the attempts were abandoned. Viewing the efforts from our present knowledge of the business, the only wonder is, that they did even so well as they did, under the same conditions the results would be the same to-day. Any one of the several adverse conditions is enough to put any sugar plant out of business.

In the first place, the capacity of the plants was too small, averaging only 100 tons of beets per day. Second, the buildings were not adapted to the business, and the type of machinery was such that everything that is now done automatically, such as handling and washing the beets, etc., was then done by hand, and the amount of sugar extracted as shown by reports, was in some cases only forty pounds from a ton of beets, while to-day 210 pounds to 220 pounds is looked for. Third, the supply of beets was limited, the aver-

age Quebec farmer, not being accustomed to growing root crops, would not take to the growing of sugar beets on account of the labor involved and his lack of knowledge in cultivating and growing them properly, and of the profits in them. Very little, if any, instruction was given him, and he was never sure that the crop would be taken off his hands, or if it was taken, that it would be paid for. The trouble was not with the soil, nor was the fault altogether the farmer's, but the whole combination of affairs was sufficient to wreck any institution, and many farmers were sorry to see the project abandoned, and if given an opportunity, would gladly encourage the industry, and no difficulty would be experienced in getting the quantity and quality of beets required to successfully operate a factory in the Province of Quebec if one was established at the present time.

#### THE OUTLOOK IN ONTARIO

In the Province of Ontario no attempt has ever been made to manufacture beet sugar. Why not, no one seems able to understand. The matter has been talked about for some years, and some rather abortive attempts have been made to interest parties and to grow beets in an experimental way, but nothing tangible was done until last year, when the Government took charge of several experimental plots of beets in different parts of the Province, and quite an exhaustive study was made of the industry and its condition in the State of Michigan. So promising was the outlook that the Government was induced at the last session of the Legislature to pass an act to encourage the industry by giving a bounty upon the manufacture of sugar. The Dominion Government assisting by admitting the machinery and structural iron in connection with the building of sugar plants free of duty for one year.

The results of these concessions are already apparent. In the town of Wallaceburg work has been started upon a plant with a capacity of ab-

out 600 tons of beets per day, costing over \$500,000. Other plants are under consideration, and at least three will be in operation next year, consuming nearly 200,000 tons of beets, the product of nearly 20,000 acres of land. Phenomenal development is looked for in the next few years, and the industry will fully justify the reports of its most enthusiastic supporters.

#### CULTIVATION.

The culture of the sugar beet is the side that interests the farmer most. There is no agricultural product from which he can derive so many advantages as from the sugar beet. Sugar beet raising not only gives the farmer many times the profits that could be derived from any other crop, but improves the condition of the soil, owing to the intense cultivation which it receives, that it produces better grain and better crops than heretofore, increases the value of the land, and enables the farmer to increase his live stock. The refuse, beet tops and leaves having good feeding value, as has also the beet pulp from the factories.

There are several varieties of sugar beets, all equally good, but requiring different soils. The sugar beet thrives in a variety of soils, but best in rich, well cultivated soil. Always use your best land for sugar beets. Sandy loam, gravelly loam or clay loam are the best, but any land that will raise good corn will raise good sugar beets. The sugar beet is a hardy plant and will stand a frost that would kill other plants. They will also stand a heavy drouth, as a rule it is the most reliable crop a farmer can raise.

In planting the seed the soil must be carefully prepared. Fall plowing and subsoiling are necessary, and it is necessary to get the seed in as early as possible. The seed is sown very heavy, 16 pounds to the acre, in rows about 16 inches apart, and carefully thinned out after they are well started above the ground. Careful weeding and cultivation are required. Cultivation puts the sugar into the

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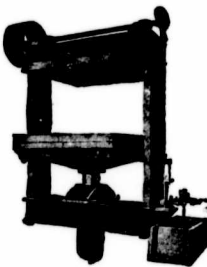
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beets, and the value of the beet is in its sugar content and its purity. Experiments have shown as high as 28 tons of beets to the acre, and some beets shipped from Western Ontario to Michigan last year brought as high as \$5.86 per ton. A fair average to estimate upon is 15 tons per acre at \$4.50 per ton. It will pay the Ontario farmer to grow sugar beets if he has a market for them.

### Go Slow

If the twenty-three different propositions in various parts of Ontario to establish sugar plants, very few of them have the faintest chance of succeeding. Most of them have very little, if anything to recommend them, and it seems a waste of energy to even consider them. It has recently come to our notice, of a case where one party was offered \$5,000 in stock for the use of his name in connection with a project. Another case, where large commissions (10 per cent in some cases) is offered to parties to sell the stock. Such propositions are not good for the shareholders, and it is advisable to look carefully into these matters when asked to subscribe. No business of such magnitude as a sugar factory, can be started without considerable expense, but when outsiders are offered such a large commission as ten per cent, and there are the promoters and others ahead of him also to be paid, it would look as though the shareholders are paying too "dear for their whistle." Don't be lead away by the promises of very large dividends; investigate the matter and find out where you are at before signing your name to any stock sheet. A business that will stand \$50,000 expense for securing stock must indeed be a good one. The sugar business will not stand it.

### How the Ontario Government Encourages the Industry.

The Ontario Government, after a very exhaustive investigation of the

beet sugar industry in Michigan and other states, and realizing the benefits that would accrue to the farming interests if the industry could be successfully established in Ontario, decided to encourage it by offering a small bounty for the period of three years. The act granting a bounty, which was passed at the last session, has been very carefully drawn, and the interests of the country, particularly the farming interests, have been well looked after. The bill as passed by the Legislature is as follows:

1. The sum of \$225,000 shall be and is hereby set apart as a special fund, to be paid out of the Consolidated Revenue of the Province, for the purpose of encouraging the growth of sugar beets, and the establishment of factories within the Province of Ontario for the manufacture of refined sugar therefrom.

2. In this Act the word "year" shall mean the twelve months from June 30 to July 1 of the succeeding year.

3. In case any person or company shall establish and erect in any part of this Province suitable buildings and instal the necessary plant for the manufacture of refined sugar from sugar beets grown within this Province, such person or company shall be entitled to be paid out of the said sum mentioned in section one, for sugar so produced of first-class marketable quality, at the rate of one-half per cent. per pound, for the product of the first and second year's operations of such factory, and at the rate of one-quarter cent per pound for the product of the third year, and no longer.

4. Not more than \$75,000 shall be paid out in any one year, and in case the total amounts claimed in any one year in accordance with section 3 shall exceed \$75,000, then the amount of \$75,000 shall be divided among the applicants in proportion to the amounts of their claims under this Act.

5. Every person or company desiring to share in the grant made under this Act shall file notice to that ef-

fect with the Treasurer of the Province on or before September 1 of the year in which claim is to be made, and the said person or company shall furnish to the Treasurer of the Province such proof of the correctness of the production and transaction of his or their factory as may be required.

6. Any moneys payable to any person or company claiming the same under this Act shall be payable only under and subject to the following conditions:

(a). That during the first year of the operations of such factory the full sum of at least \$4 per ton shall have been paid for all beets delivered at the factory, under contract, irrespective of the quantity of saccharine matter contained in such beets.

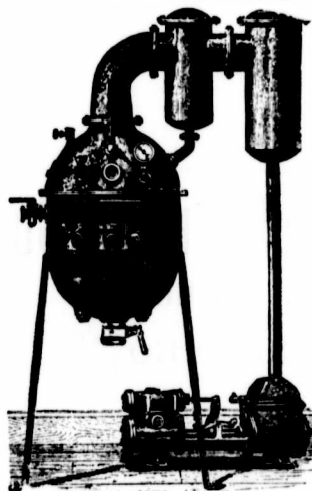
(b) That during the operations of the second and third years of such factory, the said person or company shall have paid for all beets grown according to contract and delivered at the factory at the rate of 33 1-3 cents or fraction thereof for every one per cent. or fraction of one per cent. of sugar which such beets contain.

(c). Any form of contract for the growing and delivery of beets made by any person or company claiming aid under this Act must be submitted to the Minister of Agriculture and approved by him.

7. In the event of any dispute between any such person or company and any contractor for the supply of sugar beets, as to the quantity of saccharine matter which said beets are said to contain, reference shall be made to the analyst of the Agricultural College, Guelph, or to such person as may be nominated for that purpose by the Lieutenant-Governor-in-Council, whose report shall be final.

### How the Dominion Government Encourages the Industry.

The Dominion Government, while not being prepared to go quite so far as the Ontario Government, in granting a bounty upon the production of sugar, has been quite liberal



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in another way, and has allowed all machinery and structural iron in connection with the building of a sugar factory to be admitted free of duty for one year. The act passed at the last session of the Dominion House, reads as follows:

"Machinery of every kind and structural iron and steel, when imported under regulations to be made by the Minister of Customs, for use in the construction and equipment of factories for the manufacture of sugar from beet root, until the first day of April, 1902, is placed on the free list."

### Instructions in Beet Growing.

Professor Shuttleworth, of the Ontario Agricultural College has issued the following circular of instruction to farmers who are growing sugar beets this season for experimental purposes.

The usual methods of cultivation and manuring practised in growing mangolds, turneps and potatoes would if followed in the cultivation of sugar beets, produce an unprofitable crop for factory purposes.

The beet does best in warm, moist soil, having an open subsoil which is also naturally warm and moist.

The best results can be produced only when they are available to the plant in the right form and quantity in the presence of other required conditions, the four most important constituents in the nourishment of beets, viz., nitrogen, phosphoric acid, potash and lime. It is better to apply farm-yard manure to a preceding crop. Unleached wood ashes is a valuable manure for sugar beets.

Late deep plowing is an essential part of fall cultivation for sugar beets on any soil.

Spring cultivation for planting must be shallow, the object being to prepare a seed-bed whose soil is reduced to the highest degree of tilth, resembling the surface soil of a well-prepared onion bed.

The choice of seed is a matter of very great importance. Plant, as early as soil will permit, 16 pounds of seed per acre on the flat, in rows 21 inches apart. The seed should be in moist soil, having been planted to a depth of about one inch.

After planting keep the surface soil loose and clean by the use of Breed's Weeder. During the development of the third or fourth leaf, thinning should be commenced, and finished as early after as possible.

Keep the surface soil well cultivated and clean of all weeds. Cultivation preserves moisture and promotes growth, but it must be discontinued when found to injure the leaves.

### Sugar Beet Pulp Increases Milk Flow

Mr. J. W. Edgar, of Sugar City, Col., gives us the information that his herd of sixty head consume about two tons of pulp per day, only requiring a small amount of hay and no grain; that the flow of milk is far in excess of that in any former year at this season, even when the cows were highly grained. Taking in consider-

ation that two tons of pulp at the maximum price of 50 cents per ton costs only the small sum of \$1 per day for the sustenance of sixty head of dairy stock, this demonstrates both the value of the pulp as a feed and its desirability on the part of the stock-man on account of the light expense in carrying stock through the winter months:

### An Expert's Opinion.

Prof. Smith of the Michigan Agricultural College on being asked in regard to the impoverishment of the soil by sugar beets, says:

A lot of theory has been wasted on this topic, trying to make farmers believe that, inasmuch as sugar and its components are derived entirely from the air, that, therefore, sugar beets do not exhaust the soil. This is a mistake, as shown by the practical experience of a host of farmers. Sugar beets do exhaust the soil in the same way, and perhaps to the same degree, that a crop of corn does, or a crop of potatoes. It is difficult to tell just how much a crop of beets exhausts the soil, but reason shows that where the tops are left on the ground, it is not an extremely exhaustive crop. We have grown beets on the same ground for four successive years, without the application of barnyard manure or commercial fertilizers, but giving the crop excellent cultivation, and there are no evidences of serious deterioration. The crop looks as well this year as it has in the past. Surely, the loss is too small to be recognized by chemical analysis. While the data on this subject is extremely limited, I am prepared to believe that the statements made by some pessimistic farmers that beets inflict a serious injury upon land are very greatly exaggerated.

On the other hand, if beets are well cared for they leave the field in excellent tilth, and reasonably free from weeds. If poorly cared for the crop will be small, and certainly not exhaustive. I am welcoming the crop into our state because it is one which rewards bountifully the farmer who cultivates thoroughly, while it returns nothing to the man who neglects them. There is no half way work about it. If a man wants to make money raising beets, he must sow early, thin at the right time, and cultivate so that the top of the ground is soft and free

from a crust all through the season. He must keep the weeds out completely. The man who does this will not see his land deteriorate, but will find beets one of the most paying crops he can raise if his land is adapted to it.

### Does the Beet Crop Pay?

That the beet crop pays better than any other crop the farmer can raise is shown by the following few figures from Mr. W. J. Wood, of Vassar, Michigan, which we reproduce:

From 15 acres of hay he sold \$800 worth. From this 15 acres he would probably get 70 tons of hay, which would bring about \$850, or \$18 per acre, from ten acres of beans he got \$190, from twenty acres of wheat \$310, or about \$15 per acre.

From seven acres of sugar beets he received \$548, or a trifle over \$78 per acre, four times as much as his hay, about twice what he got for his beans, and nearly five times as much as he got for his wheat. Does the beet crop pay?

### Pulp fed Stock.

Results of Experiments Carried On at Stock Farm of A. W. Wright.

During last December the Michigan Agricultural College started making some practical tests in feeding stock on pulp, and chose as one of the places the stock farm, "Grafton," owned by A. W. Wright, president of the Alma Sugar Company, and which is located near Alma. The experiments were carried on by students sent out from the college. A report handed us says:

"Results from feeding sugar beet pulp at A. W. Wright's 'Grafton' farm from December 10th, 1900 to March 12th, 1901, fourteen weeks, to growing cattle (stockers). Fifty cattle were chosen for uniformity and placed in the same barn, but circumstances were such that thirty were fed pulp and twenty received none, other conditions were equalized. For the sake of comparison with the twenty fed without pulp, the results obtained from the thirty are here reduced one-third.

The loss in weight of the twenty during the first two weeks is probably due to the fact that they had been fed pulp before and felt the effect when it was taken away. For the two weeks, ending February 4th, the small gain was probably due to

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Sugar Houses and Refineries.

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substituting corn stalks for hay with both lots. At the beginning of the experiment about 15 pounds per head was fed and gradually increased until toward the last they were fed as

high as 100 pounds per day. No ill effects were observed except when much frozen pulp was fed, then they soured some.

Though undoubtedly the above percentages are exceedingly good especially when we remember that the roots were grown on sod, I do not think it would be safe to consider them as necessarily indicating that the Lethbridge district would always yield beets with a high sugar content. The fact, already referred to, of the drying out of the beets and the small

Date.	Lot 1, Pulp Weight.	Fed. Gain	Lot 2, No Pulp. Weight	Loss Gain
Dec. 16th, 1900	15,200		11,805	
" 23rd "	15,100	200	11,725	80
Jan. 7th, 1901.	15,910	510	11,930	205
" 21st, "	16,465	495	15,250	320
Feb. 14th, 1901.	16,685	280	15,310	69
" 18th "	17,045	360	15,610	300
March 14th, 1901.	17,615	570	15,930	320
" 12th "	17,895	190	16,060	150
		2,605		1,275
Average		130.25		62.75

—Sugar Beet

**A Factory for Alberta, N W T**

Mr. Jesse Knight of Salt Lake City, who has within the last few years become immensely wealthy through mining investments, is very specially interested in the development of the Northwest Territories, particularly southern Alberta.

Mr. Knight has not only purchased a very large area of land and established a ranch, but is also arranging to put under crop some thousands of acres. Upon the lands that are now being plowed and made ready for crop this year, Mr. Knight intends to locate settlers from Utah in some holdings, and will dispose of the land to them on certain conditions, one of which is that they shall sow one-tenth each year in sugar beets. It is Mr. Knight's intention to erect in the district a beet sugar factory, which it is hoped will be ready for operation by the autumn of 1903. He has also sent out a survey party to locate a reservoir site, as the factory will require some 3,000,000 gallons of water per day. The plant to be installed in the factory will have a daily capacity of about 350 tons of beets, and the investment in connection with it will amount to fully \$500,000. It is not intended to confine the purchasing of beets to the persons in whom Mr. Knight is particularly interested, but a market will be provided for the products of many of the districts in the territory. Mr. Knight has already made tests of samples of beets produced at Lethbridge, and on examination these

were said to be very rich, the average being 18 per cent. sugar in beets and 81 per cent. purity.

Mr. Knight has already expended fully \$500,000 in purchasing land and live stock, and in other investments in the southern Alberta district, and this, together with the beet sugar industry, will make his ultimate outlay fully \$1,000,000. In making these expenditures Mr. Knight says he is simply desirous of locating homes for large numbers of poor people whom he will settle on his lands, and the industry that he has undertaken is for the purpose of affording them a profitable market for their products. He has interested in the project some very prominent gentlemen from Utah, where the beet sugar industry has been very successfully carried on for many years, and in view of the excellent results achieved there Mr. Knight feels that he has almost equal chances on this side, although possibly the market is somewhat limited as compared with that in the United States.

The analysis of the beets grown in Alberta, as shown by the reports of the Department of Agriculture at Ottawa, is as follows:

On arrival of the beets at the farm laboratories, it was found that they had dried out considerably, and consequently would show a higher percentage of sugar than present when dug. Of course, it was impossible to ascertain the degree to which concentration of the juice had taken place. Our results are as follows:

L. cality.	Number of Roots in Sample.	Percentage of Sugar in Juice.	Percentage of Solids in Juice.	Efficient of Purity.	Average Weight of one Root.
					Lbs. Oz.
Magath .....	4	15.19	21.02	72.26	1 9
Stirling .....	9	17.32	22.12	78.3	1 11

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number examined make it desirable that further data be obtained before final conclusions are drawn.

There is no doubt that further experiments will be made before building a factory, and it is hoped will warrant the carrying out of the project.

### German Methods.

The new method of drilling seeds has simplified matters very much, as it makes seeding both easier and more regular than by the old hand method. It insures more regular stands, hence makes thinning out easier. In the more favored beet raising districts of Germany, cultivating of the sprouting beetlings is already in order. And right here we want to caution the beet growers not to delay in this first careful cultivation. As soon as the beetling has sprouted and appeared above ground, at least as soon as a little crust has begun to form, cultivation will be in order. This at once loosens the soil, allowing the beetling full opportunity for proper development, giving it room for expansion, plenty of air, light, heat, moisture. This early cultivation also kills any seed that may be sprouting, and threaten to take away the plant food from the young sugar developer. This first cultivation in years gone by has been much neglected by Germany's beet growers, who have thought this early work unnecessary. But hard experience has taught them differently. Weeds killed now, in their infancy, remove a menace to the life and development of the beet at the very outset, and at the least, save hours of work later in the season. An hour of cultivating when the beet has sprouted, will save days and days of work later on. Just as soon as this first cultivation is completed, the thinning process will be in order. The sooner this thinning out work is done, the better for your beet crop. Remember that, be prepared to do this at the earliest possible moment. It may mean several per cent. more sugar contents for your beets. It may mean all the difference between success and failure.

Thinning out should begin as soon as two leaves are clearly developed on the young beetling, and as soon as the stronger, more robust beets can be distinguished from the less favored neighbors. Beet growers should pay especial attention to this thinning out work, as it is of vital importance to the success of your beet crop. It is usually done by hand, hence should be carefully watched. When the thinning out work is completed, another hoeing will be in order, to still further loosen the crust about the beet, to remove remaining weeds, and also to carefully remove double beets, always taking care to thin out the less developed ones. So much for the practical instruction, in the urgent work of the beet field at this time, on the strength of many years practical experience by thousands of Germany's pioneer beet growers.—Michigan Sugar Beet.

### The Proper Soil for Beets.

The Michigan Agricultural Department publishes a report of 429 different trials of growing sugar beets upon different soils. The averages show most decidedly in favor of clay loam, which almost invariably gives the highest tonnage with a maximum per cent. of sugar.

**Muck**—Next in that report to the clay loam, when we consider the money value of the crop, is the so-called muck. The figures are somewhat misleading, for the term muck is applied to such a variety of soils, including the deep marsh muck and the swamp, where the subsoil is so near the surface that the beet roots penetrate deeply and enjoy conditions wholly unknown on the muck where it exists in the pure state. For the past two years we have grown beets on some of the college muck land, and under no condition have we yet been able to secure beets that will test 12 per cent. sugar.

**Clay**—The difficulty with heavy clay land for beets is not so much the natural productive quality of the soil as it is its physical character. The clay soil is always underlaid with a still harder and more impenetrable layer of clay subsoil, which must be mellowed by use of the subsoil plow. Even with the best preparation the clay soils are liable to bake hard during the summer and forbid the beets from being drawn well into the ground, thus forming ill-shaped roots growing largely above the ground and containing a low per cent. of sugar. If one is to use clay soil for growing beets he must subsoil thoroughly, see that the soil contains a liberal amount of humus and provide generous surface cultivation during the dry summer weather to insure moisture and mellowness.

**Sand and sandy loam**—Numerous experiments on these soils reveal the important fact that for a crop so dependent upon a liberal and constant supply of moisture throughout the growing season, they are too liable to fail during the summer drought.

The more sandy a soil the less is its capacity to attract and hold capillary moisture, and the absence of a necessary supply of water during any portion of the life of the plant arrests the growth and a failure of the crop is the result. A large crop of sugar beets taxes the productive capacity of any soil to its limit and the lighter soils generally lack the natural fertility necessary to produce a maximum growth. There is one advantage, however, with the lighter soils which should not be overlooked, and that is the ease with which they are worked. No subsoiling is necessary, and the plowing and nearly every operation, even to the harvesting of the crop, cleaning the beets, and, we may add, the marketing, is performed with greater ease on the lighter soils than on those containing a greater admixture of clay.

So far, our experiments with the various soils teach us this, that clay loams will give one year with an-

other the highest yield and the most sugar.

The sandy loams will always produce beets of a moderately high per cent. of sugar, but a very dry season is liable to check the growth to a disastrous extent. Heavy clays are liable to produce beets of undesirable shape and low in sugar. Sandy soil is almost sure to suffer from summer drought. Muck is very uncertain both as to quality and quantity.

### Sugar Beets in Colorado.

The Agricultural Experiment Station, of Fort Collins, Col., publishes a bulletin relative to the culture of sugar beets, which runs as follows:

**Soil**—A rich, loamy soil is best, but any soil that will produce good crops of grain will grow beets, and even soils too alkali to grow grains will grow beets.

**Preparation of seed bed**—Plow in the fall, subsoiling to fifteen or eighteen inches. Plowing may be done in the spring, in this case it is best to plow immediately before planting. In either case harrow quite smooth and even.

**Subsoiling**—Results at this station show a gain of 18 per cent. in weight of crop due to subsoiling.

**Time of planting**—The time will vary with locality and soil. Early planting gives largest crops. Good results have been obtained with plantings as late as June 13 at this station, and June 15 at Rockyford, but four series of tests of ten experiments each made in different sections of the State show an average excess of 3.4 tons of beets for the plots planted from April 10 to 20 over similar plots planted from May 1 to 10; 7.3 tons over those planted from May 15 to 25, and 12.4 tons over those planted between May 31 and June 10.

**Depth of planting**—If the soil is wet very shallow planting will give good results, but the best results are generally obtained by planting from one inch to an inch and a half.

**Distance between rows**—This should be from 18 to 20 inches if in single rows. Mr. Watrous, in Bulletin 21, recommends double rows 12 inches apart and 24 inches between rows. He claims that they are more easily irrigated. Prof. Cooke, in Bulletin 57, recommends double rows 14 inches apart and 27 inches between rows.

**Amount of seed**—Good crops have been raised by planting small quantities, three to five pounds of seed to the acre, but it is advisable to sow eighteen to twenty pounds to the acre.

**Sugar beet raising promises** as well as any other industry. Sugar is not perishable, and for it there will always be a demand and probably at prices reasonably remunerative. The American people will always have sugar, no matter what may be the cost. We therefore advise that our people engage in sugar beet production as far as practicable. The results will be as assuring as any other branch of agricultural industry.

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## The Farm Home

### If We Only Understood.

"Could we draw back the curtains  
That surround each other's lives,  
See the naked heart and spirit,  
Know what spur the action gives,  
Often we should find it better,  
Purer than we judge we should,  
We should love each other better,  
If we only understood."

"If we knew the efforts all in vain,  
Knew the efforts all in vain,  
And the bitter disappointment,  
Under the loss and gain,  
Would the grim, external roughness  
Seem, I wonder, just the same?  
Should we help where now we hinder?  
Should we pity where we blame?"

"O, we judge each other harshly,  
Knowing not life's hidden force,  
Knowing not the fount of action  
Is less turbid at its source,  
Seeing not amid the evils  
All the golden grains of good,  
Oh, we'd love each other better,  
If we only understood."

—Pittsburg Press.

### Bread—Its History and Uses.

A brief glance at the history of bread, as far as it is to be learned from the records of mankind, may have a certain value in dispelling a very common notion that bread and bread-eating, like breathing and the beating of the heart, are matters about which one is fortunate in proportion to his ignorance. This is because so many bread reformers and their disciples have been dyspeptics that any attention to the subject seems to imply an over-consciousness of that useful organ, the stomach, which is so characteristic of the entire dyspeptic fraternity.

Bread has not remained the same from one age to another. It has changed greatly in the course of time, but the bread-idea has remained the same, steadily developing improvements in the article itself.

Primitive bread was undoubtedly an unfermented cake of the coarsest meal. A loaf of bread found with relics of early lake-dwellers, at the bottom of one of the Swiss lakes, is of barley corns very coarsely broken, some of the grains remaining entire. The meal was mixed with water, placed upon the hearth, and covered with hot ashes. The Bedouin tribes, like many others, beat the meal and water in a paste, and cook it on the surface of smooth, hot stones.

The floubrød of Norway is similar in character, usually of rye-meal paste, spread very thin on a sort of round griddle the size of a small table, and turned with sticks. The Scotch scones are of meal and water beaten and baked in thin layers. The New England johnny-cake of the true stamp was corn-meal and water beaten light and baked in a thin layer so that the flavor of parched corn was

imparted. This was baked on the bottom of the brick oven, which had been heated by enclosing a fire of wood, just reversing the Bedouin practise of heating the stones in a surrounding fire. A great advantage of all this kind of bread is found in the fact of its transportability and keeping qualities. It was dry food—indeed, the invention of beer is often considered as following the invention of the oven and processes of baking dry bread instead of the watery porridge. Each country, in primitive times, seems to have had a bread made in pastry form and dried in the sun or by the fire. Thus we find date bread and various pulse breads.

Fermented bread may be said to be a sign of civilization. In Moses' time the children of Israel had learned to raise their dough by means of leaven. In their flight from Egypt "they baked unleavened cakes out of the dough which they had brought forth out of Egypt, for it was not leavened because they were thrust out of Egypt and could not tarry, neither had they prepared for themselves any victuals." This bread was leavened with dough which had been allowed to sour. As sweet bread can be produced by such a process only with difficulty, their bread was, without doubt, always sour. The Hebrew word for leaven, in fact, signifies "sharp, sour." They may have adopted an Egyptian practise in thus leavening their bread. The bread used by Moses in sacrificial ceremonies was, however, unleavened "wheaten bread, tempered with oil."

Barley was still the food of the poor in the time of Christ—"With five small barley loaves He fed the multitude."

The earliest European bread, was made from barley corns. Rye came into use later, and was brought from Asia, wheat came into use still later, and is not yet in general use in Europe. Wheat was probably introduced from Egypt.

As has been stated the leavened bread of antiquity was presumably always sour, as are, in fact, the breads of the common people of Europe to-day. The Russian rye breads are sour. "Black rye bread," writes a correspondent from St. Petersburg, "is the food of all the lower classes; animals, too, are largely fed upon it. It is always sour." The Danish bread, rye bread also, is sour. The German rye and wheat, or rye and barley, or simple rye breads are sour. The German breads are, however, of varying degrees of acidity, and the sweetest and best of white breads are found in southern Germany.

The German black bread is made and sold in large quantities even in England. The German soldiers prefer a bread with ten per cent. of bran, the purified flours failing to give them satisfaction so important to good digestion. The Russian soldiers taken prisoners by the

French during the Crimean war and fed upon white bread, are said to have begged for some of the coarse, black bread of their own country to appease their unsatisfied cravings.

The very best bread of Scotland is sour; but slightly acid bread of the right sort is certainly satisfying and distinctly agreeable to those accustomed to it, but if not of the right sort is very unpleasant. Scotch bread is made with flour harm. This bread is quite popular in London also, a Scotch bakery opened there several years ago meeting with great success.

Although the common bread of Hungary is sour, the best wheat of Europe is grown there, and from it the celebrated Vienna breads are made. Robert Townson, of Edinburgh, writing in 1797 from the town of Debretzen, says: "Lighter, whiter, better flavored bread than made here I never ate." He attributed its excellence to the yeast made with bran, and it is noteworthy that the best yeast yet produced is made in southern Germany, near the wheat fields producing the best material for flours.

One of the worst breads of Europe, and perhaps the sourest, is Portuguese bread. The wheat bread of Turkey is sour. The bread of the interior of Asia is made of unbolted flour, and is very sour.

The Chinese make a bread eaten by all, from the emperor down to the meanest peasant, of a paste of kidney beans made into great flat cakes like cheese. It is very white and is eaten raw, or boiled with fish and herbs.

The pilot bread and water crackers of our time are a survival of these customs.

As the bread of a country becomes light, it tends to become sweet, but a good flour is required to produce light bread, and the improvement in flour milling has been accompanied by an improvement in yeast manufacture. Changes take place slowly, however, and custom holds fast for a long time to its sour flavors. It is especially true that when bread is the principal food—what is called in Palestine aish, that by which man lives—a strong flavor seems to be essential.

Great progress has been made in the arts which have to do with bread-making, and the common loaf of a country at the present time, and perhaps of all times, indicates the advance made in civilization. Our loaves show by their snowy whiteness the wonderful advance in the skillful use of machinery in the flour mill, and skillful culture in the wheat-field; but it also reveals a certain amount of ignorance on the part of the people as to what perfect bread should be. If the public had for some years demanded a more nutritious, and not merely a whiter and lighter bread, it is probable that we should have had it, for the miller seems able to furnish almost anything that the public

asks for. This is the lesson from the history of bread: What the people demand they can obtain if they only know what they want.

If we grind and bolt to make a pure, white flour, we eliminate the very elements which give flavor. The pure, white flour, we eliminate the "tasty" qualities of the wheat. These are taken out in high-grade milling. Some of the more volatile flavor is lost by evaporation between "breaks," and by the suction fans on rolls and purifiers. Centrifugal mill flour has the best flavor.

Again, the mineral foods of the wheat are intimately connected with its bran or covering. In order to get these substances we must have a flour which will make a dark bread, but when the flour contains coarse bran, much of the other valuable portions of the wheat is not digested. It has been estimated that:

Graham flour contains per barrel ..... 58 oz. "fibre."  
 Brown flour ..... 25 ..  
 Second-grade white flour 10 ..  
 Patent flour ..... 5 ..

When we substitute the white flour bread of modern times for the whole meal bread of barbaric days, we should do so with our eyes open to the difference, and should fully realize that such bread is not the staff of life, but needs to be supplemented by that of which it has been robbed by the refinements of modern habits.

**Hints by May Manton**

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3821 Fancy Shirt Waist, 32 to 42 in. bust.

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To cut this waist for a woman of medium size 4 yards of material 21 inches wide, 3 1/2 yards 27 inches wide, 3 1/2 yards 32 inches wide, or 2 1/2 yards 44 inches wide will be required, with 1 1/2 yards of lace insertion and 1 yard of sheer lace to trim as illustrated.

The pattern 3821 is cut in sizes for a 32, 34, 36, 38, 40 and 42 inch bust measure.

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## To Cook Potatoes

A perfect potato may be spoiled in the cooking. The starch cells of the potato swell with the heat, and just becomes gummy, a portion of the potato is done, left longer, the mass becomes gummy, a portion of the starch is probably changed to dextrine. No food needs to be served more promptly than the much-abused common Irish potato. The few mineral salts in the potato contribute largely to the flavor, and these are retained in the process of cooking if the potato remain unpeeled during the cooking. Busy housekeepers, who usually peel the potatoes, even in large families, might serve them in their

jackets at least every other time, and explain to the family the reason for so doing. A double end would thus be attained, the family would get more nutriment and the housekeeper secure more leisure.

At a country fair a conjurer was performing the old trick of producing eggs from a hat, when he remarked to a little boy: "Your mother can't get eggs without hens, can she?" "Of course she can," was the unexpected reply. "Why, how is that?" asked the conjurer. "She keeps ducks," replied the boy, amidst roars of laughter.

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**Chocolate Pudding.**

One quart of milk put on in double boiler. When it boils sprinkle in two squares of chocolate. Stir thoroughly. Let it cook two or three minutes, then remove from the fire and let it cool fifteen minutes. Add the beaten yolk of six eggs and the whites of two with eight tablespoonfuls of powdered sugar and one tablespoonful of vanilla extract. Place in a pudding dish and bake, taking great care that it shall not be watery. Beat the four remaining whites with four tablespoonfuls of powdered sugar and spread over the pudding as soon as it is baked, returning to the oven to brown slightly. To be eaten cold.

**Pancakes.**

Stir the yolks of three eggs in one pint of warm milk, with a tablespoonful of melted butter and half a teaspoonful of salt, flour for thin batter, with one teaspoonful of baking powder and the whites of three eggs beaten stiff. Fry and serve, spread with jam and rolled up; sprinkle with powdered sugar.

**A Natural Resentment**

Farmer Hornbeak—Josh Hayrake is awfully down on the automobiles. One or ten run over his poor ole mother-in-law.  
Farmer Whiffletree—Kill her?  
Farmer Hornbeak—Nope, never hurt her a gold-dized particle.



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**WHY EDUCATE THE FARMER'S SON?**

The *Farmer's Advocate* says: "We have been asked whether a lad, son of an Ontario farmer, who has a liking for a mercantile life and who expects to have a little leisure next winter, would do better after taking the Public School course, to go on to the High School or take a short course at a good Business College. From what we know of the curriculum and tendencies of the High Schools and Collegiate Institutes in that Province, we should certainly say take advantage of the business training at a Commercial College. The very existence of these institutions, of which there are now many excellent ones, shows a serious weakness in the educational system of the country."

A Course in one of the Federated Colleges will surely meet your expectations. Write the College nearest your home for new "Year Book," and copy of "The Business Educator." Free if you name Farming World.

**GOOD CHEER RANGE**

IT BAKES WHAT IT TAKES CAKE

made only by  
**The Jas Stewart Mfg Co Ltd**  
WOODSTOCK, ONT.

**SOLD BY LEADING DEALERS EVERYWHERE.**  
Jas. H. Ashdown, Winnipeg, Man., Wholesale Representative, Man. and N.W.T.

ALWAYS MENTION THE FARMING WORLD WHEN WRITING ADVERTISERS.



**Special Ten Day Offer**

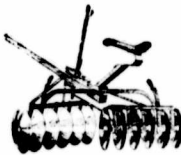
September is Fencing Month, **THE BEAVER POST-HOLE DIGGER** is the best machine on the market. Sells like hot cakes. Makes post-holes at half price.

Wanted a wide awake man in every locality to represent us at Fall Fairs. Sample Digger at wholesale introduction. Apply at once.

**HALL & SON**  
50 Bay St.  
Toronto

**BISSELL'S**

**DISK HARROW**



A powerful and effective cultivator.

Adapted for the greatest variety of work.

Built in 6 ft., 7 ft. and 8 ft. sizes.

Very successful in working hard stubborn soils.

Full particulars given free by mail.

**BISSELL'S**

**STEEL LAND ROLLER**



with all latest improvements. **Solid Pressed Steel Heads** in the drums. **Truss Rods, Heavy 2 in. Axle, Roller Bearings, Low Downhitch, Light of Draft.**

Write for Prices and Terms.

See these implements at **Toronto, London and Ottawa Fairs.**

**T. E. BISSELL, Fergus, Ont.**

**FITS**

Lebig's FIT Cure for Epilepsy and kindred affections is the only successful remedy, and is now used by the best physicians and hospitals in Europe and America. It is occasionally recommended to the afflicted by your sufferer's friends.

**EPILEPSY, FITS, ST. VITUS' DANCE,** or have children or relatives that do so, or know a friend that is afflicted, then send for a free trial bottle and try it. It will be sent by mail, prepaid. It has cured wherever tried, and has failed.

When writing mention this paper, and give full address to **THE LIEBIG CO., 179 King Street West, Toronto.**

**ALWAYS MENTION THE FARMING WORLD WHEN WRITING ADVERTISERS.**

We shall be glad to mail free sample copies of this issue of **THE FARMING WORLD** to your friends. Send us their names.

**Army Horses in the Northwest.**

Lieut.-Col. Dent, who has been in the Northwest for some weeks purchasing horses for the war office, has completed his tour and returned to Montreal. He expresses himself as being very much pleased with the assistance given him in his work by Secretary C. W. Peterson, and other members of the Territorial Horse Breeders' Association, particularly Captain Inglis and Messrs W. R. Stewart, J. A. Turner and G. S. Goddard. From the knowledge gained by a personal inspection of the leading horse breeding districts of the Northwest and British Columbia, he is inclined to think that a future visit might be much more productive of results than this has been.

Col. Dent considers that a great deal of improvement might be made in breeding the right class of horse by careful selection of mares and using a thoroughbred stallion. It would also greatly facilitate business if breeders would devote more attention to having their horses better broken in, so that they would be handier and more tractable. Col. Dent also recommends that a law be passed, similar to that in force in England, compelling the railway companies to properly clean and disinfect all stock cars after each shipment.

The following is a statement of the number of horses purchased in the Northwest and British Columbia by Col. Dent, with the prices paid for each class of horse and the total amount expended:

Horses Bought	Number	Price Paid	Amount
M. T. Cobs	377	\$ 85.00	\$32,045.00
Cavalry	255	100.00	25,500.00
Royal Art.	116	100.00	11,600.00

Total 778 \$72,145.00

Of these 778 horses twenty-six were secured at Kamloops and Vernon, B. C., the others at various points in the Northwest as follows: Calgary, 217; High River, 98; Cochrane, 61; Lethbridge, 18; Macleod, 23; Pincher Creek, 48; Medicine Hat 27; Maple Creek, 11; and Moose Jaw 8.

The Russian Government are doing everything in their power to establish on a firm basis the butter trade between their country and Great Britain. A Russian dairy expert is now in England, with the object of demonstrating the complete absence of adulteration in Siberian butter, and of establishing relations between English and Russian firms. He is meeting with great success, and a large supply of Siberian butter is being forwarded to the London market.

One Teaspoonful of Pain-Killer in hot water sweetened will cure almost any case of flatulency and indigestion. Avoid substitutes, there is but one Pain-Killer, Perry Davis'. 25c. and 50c.

**Saves Cattle**

It has saved thousands of local. Has saved farmers and stockmen tens of thousands of dollars. It will protect you against otherwise certain loss.

Lump Jaw can be promptly and thoroughly cured with

**Fleming's Lump Jaw Cure.**

We give you an absolute guarantee. One bottle usually cures one to three cases. Price 50¢ per bottle, or three bottles for \$1.00. At druggists, or sent prepaid by mail.



Altamont, Ill., Sept. 12, 1890.  
Fleming Bros.  
Dear Sirs:—I send you for another bottle of Lump Jaw Cure. I have cured the worst case I ever saw. Both jaws were bad, the bad proud flesh protruding as big as a child's head. I put the Lump Jaw Cure in several places and put the medicine in, and am glad to say it cured the store. He was not worth a dollar before we got your medicine for Lump Jaw. Such medicine cannot be praised too highly. Yours respectfully, W. F. B. HOLE.

Let us send you our Illustrated Pamphlet on Lump Jaw FREE to readers of this paper.  
**FLEMING BROS., Chemists**  
Room K. 58 Bay Street. TORONTO, Ont.

**NO SPAVINS**

The worst possible Spavin can be cured in 45 minutes. Galls, Splints and Ringbones just as quick. Not painful and never has failed. Detailed information about this new method sent free to horse owners.

Write to-day. Ask for Pamphlet No. 1.  
**FLEMING BROS., 58 Bay St., Toronto, Ont.**

**ST. LAWRENCE COFFEE HOUSE**

78 and 80 King St. East

"RESTAURANT" TORONTO

Dinner for 20c.

6 Dinner Tickets \$1 Served from 11.30 to 3

for 12 to 8 and from 6 to 8  
Farmers and their wives visiting Toronto will find this to their taste.

**Maxwell's "Favorite" Churn.**



Patent Foot and Lever Drive.	No.	Capacity	Price
Patented Steel Roller Bearings. <td>10</td> <td>10 gal.</td> <td>\$12.00</td>	10	10 gal.	\$12.00
Improved Steel Frame	15	15 gal.	\$15.00
	20	20 gal.	\$18.00
	25	25 gal.	\$21.00
	30	30 gal.	\$24.00
	35	35 gal.	\$27.00

Superior in Workmanship and Finish

**DAVID MAXWELL & SONS**  
St. Mary's, Ontario, Canada.

**International Good Roads Congress.**

The National Good Roads' Association of the United States, has issued a call for an International Good Roads' Congress to be held in the city of Buffalo, N. Y., from September 16-21, 1901.

The scope of the deliberations of the Congress will include general discussion and exemplification of the science of road construction and maintenance, together with experimental tests and experience of the several countries of the world and the States of the Union, and the solution of the problems of road making. Addresses will be made by prominent statesmen and officials, competent engineers, and scientific road experts from the various nations of the world.

**Ontario Veterinary College. Limited, Toronto.**

The annual announcement of this well-known institution has just been handed out. The session will commence this year on October the 16th, and it is understood that from the number of applications received for entrance there are excellent prospects for a successful session.

**TOLTON'S No. 1 Double Root Cutter**



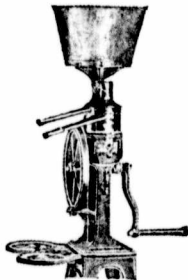
**POINTS OF MERIT**

1. To change from pulping to slicing is but the work of a moment.
2. There are two separate wheels, one for pulping and the other for slicing.
3. The united force of both wheels is always used in doing the work in either capacity.
4. The hopper is between the wheels, and does not choke.

**THE ONLY DOUBLE ROOT CUTTER MANUFACTURED**  
Fitted with ROLLER BEARINGS, STEEL SHAFING, and all that is latest and best in principle, material and construction.

**TOLTON BROS., GUELPH, Ont.**

See our exhibit at Toronto Industrial Fair.



Are you going to buy a **CREAM SEPARATER?** If so try the **"New Century American"**

MR. JOHN ROSS, Streetsville, Ont., writes:  
"I have been using your separator for three months. It is the best around here, as there are five (5) other different makes and every one likes ours the best."

Write for circulars and information to

**C. Richardson & Co.**

Box 1053 ST. MARY'S, ONT.  
AGENTS WANTED.

**The Mutual Life of Canada**

FORMERLY THE ONTARIO MUTUAL LIFE, ESTABLISHED 1870.

A Company  
Of Policyholders  
By Policyholders  
For Policyholders.

Head Office: WATERLOO, ONT.

A POLICY IN IT  
PAYS

Assurance in force January 1st, 1901	\$29,521,076
Cash Income, 1900	1,171,944
Assets, December 31st, 1900	5,182,014
Reserve for Security of Policy-holders, 1900, 4 and 3 1/2%	4,837,734
Surplus over all Liabilities, December 31st, 1900, Actuaries' 4 and 3 1/2%	310,380
Surplus on Government Standard, 4 1/2 and 3 1/2%	516,010

**The Oldest, Largest, Strongest and Best Life Assurance Co's in the World are Mutual.**

All desirable forms of insurance and annuities are issued by this Company. We have the best of everything that is good in life insurance. The Company's 20-Pay Life—15 or 20 year Survivorship Distribution is the most popular policy issued. Values handsome and guaranteed. Options many and attractive.

**MONEY TO LOAN** on improved Farms, Churches, etc., at lowest current rates. Terms of payment easy. Costs low. Debentures purchased.

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President.

A. Hoskin, K.C.  
B. M. Britton, K.C., M.P.  
Vice-Presidents.

Geo. Wegenast,  
Manager.

W. H. Riddell,  
Secretary.

The days for rejoicing are at hand.  
The harvest has been garnered.  
The people of Canada have money.  
Have you goods to sell?  
We make engravings that will help you sell them.



Here's to a prosperous season!  
Let Canadians use the vintage of their own soil.  
Our engravings are equal to the best made in the world.  
We make them for every purpose.  
Write us.

**Moore & Alexander**  
16 ADELAIDE STREET WEST  
TORONTO

**Moore & Alexander**  
16 ADELAIDE STREET WEST  
TORONTO

**A Challenge.**

I do hereby challenge any churn manufacturer in Canada to compete against my Columbia Air Churn at the Toronto Industrial Fair. Competition to be for time, quality and quantity, and will place \$1,000 with the editor of Farming World as a guarantee. The churn can be seen at the office of the Columbia Air Churn Co., Confederation Life Building, Toronto.

Witness,  
S. W. Grant, F. Tierney,  
324 Lenox Ave.,  
Newark, N. J., and New York.

**Western Fair, London.**

All the prospects point to the Western Fair at London to be held on September 5th to 14th, 1901, being the most successful ever held, it being the intention of the Directors to make the initial show of the century something to be proud of and to be remembered. All the departments are filling fast, and in many cases it is evident the only complaint will be lack of space. The Directors are full of resources, however, and it may be taken for granted that everything on the grounds will be given a good show.

**One of the Finest.**

A happy holiday is looming up in the future when the Central Canada Exhibition Association at Ottawa will hold their annual fall fair from Sept. 13th to 21st. The number and quality of the exhibits, the balloon ascension and parachute leap, the band of trained elephants, the running and pacing ostriches, the horse races, the grand spectacular "The Siege of Tien Tsin," the fireworks and the long list of special attractions go to make up a programme of amusement which cannot fail to please each and every visitor to the fair.

Liberal prizes are offered along every line of competition and Mr. E. McMahon, Secretary, 26 Sparks St., Ottawa, is receiving daily many applications for entry forms, space, information, etc., and it is safe to predict that this year's exhibition will be the finest ever seen in Canada.

The cheap rates of travel make this excursion available to all, and no one should miss seeing the Capital in gala attire for the visit of the Duke and Duchess of Cornwall and York, who by a happy coincidence will be in Ottawa during the week of the great exhibition.

A curious method of letting church and town lands which prevails at Corby, near Kettering, England, was put in force recently. The parishioners having assembled in the vestry, with the rector in the chair, a candle was lighted, with a pin stuck in the wax. Bidding then proceeded until the pin dropped, when the last bidder was declared the purchaser.



**WRITING ALWAYS IN SIGHT.**

**EASIEST TO TEACH TO LEARN TO OPERATE**

**THE UNDERWOOD**

*In the Schools*

Modern Educational Institutions that teach Touch Typewriting on the Underwood Typewriter, a system of Typewriting wherein visible writing is an indispensable feature:—

Belleville Business College	Belleville
Deaf and Dumb Institute	Belleville
Public School	Belleville
Brockville Business College	Brockville
Herin Business College	Herin
Collegiate Institute	Brantford
Public School	Brantford
Collegiate Institute	Chatham
Canada Business College	Galt
Galt Business College	Galt
Central School	Guelph
Loretto Abbey	Guelph
Hamilton Business College	Hamilton
Central Business College	Hamilton
Queen Victoria School	Hamilton
Normal School	Hamilton
Kingston Business College	Kingston
London Business College	London
Coo Shorthand School	London
Sacred Heart Academy	London
High School	Newmarket
Collegiate Institute	Ottawa
Metropolitan Business College	Ottawa
Public School	Ottawa
Northern Business College	Owen Sound
Loretto Convent	Pembroke
Peterborough Business College	Peterborough
Collegiate Institute	St. Mary's
Alma Ladies College	St. Thomas
St. Thomas Business College	St. Thomas
Central Business College	Stratford
Collegiate Institute	Stratford
Whitby Ladies College	Whitby
Collegiate Institute	Windsor
Winnipeg Business College	Winnipeg
Woodstock Business College	Woodstock
Christian Brothers' School	Ottawa
Public School	Ottawa
High School	Toronto
Central Business College	Toronto
British American Business College	Toronto
Nimmo Harrison Business College	Toronto
Wally Business College	Toronto
O'Dea Business College	Toronto
Loretto Abbey	Toronto
Miss Kilby Business College	Toronto
Western Business College	Toronto
Collegiate Institute	Toronto
St. Andrew's College	Toronto

SOLE CANADIAN AGENTS:

**Greelman Bros., Typewriter Co.**

15 Adelaide Street East, TORONTO.

**DO YOU WANT**  
**More Cream and Less Work?**  
Then Buy an  
**Improved**  
**U.S.**  
**Separator**  
That is the kind that  
Gets all the Cream

It also saves much time and labor and makes dairying more pleasant and profitable.

Illustrated catalogues are to be had for the asking.

**Windsor Salt**

The test of time proves Windsor Salt at its best—no stronger test exists. Buy Windsor Salt and you buy an absolutely pure, white, dry Salt that has no equal.

**"Best By All Tests"**

**A Great Success.**

The Gould, Shapley & Muir Co., Limited, of Brantford, Ont., report that their new line of "Ideal" gas and gasoline engines is proving very successful. Not only are the engines running perfectly and giving the utmost satisfaction, but orders are coming as fast as they can be handled. The firm is putting in still further additions of up-to-date machinery, and doing everything possible to meet the large demand for their engines.

They are preparing a fine exhibit for the Toronto Industrial Exhibition, and invite all who are interested to inspect their full line during the Fair.

**Two Important Articles.**

Mr. William Allen White has just returned from Lawton, where he went to write for The Saturday Evening Post, of Philadelphia, the story of the "opening" of the Indian lands. Mr. White's vivid account of the mushroom city that sprang up in a night is of striking and timely interest.

Lord Balfour, of Burleigh, Secretary of Scotland, and Lord Rector of the University of Edinburgh, will contribute to an early number of the Saturday Evening Post, of Philadelphia, a paper of official significance on Carnegie's Gift to Scotland. Lord Balfour is one of the trustees of the millions Mr. Carnegie has given to the Scotch universities.

**The Big Clydesdale Sale.**

We would again direct especial attention to the big sale of registered Clydesdales, to be held at Grand's Repository, Toronto, on Wednesday, September 4th, at 10 a. m. sharp. This sale is of special interest to farmers desiring to secure good breeding stock. The catalogue of sale contains the names of some noted horses, such as the bay stallion, Ned Rakerfield (2676), the bay filly Belle MacMaster (3068), the brown filly, Beulah Belle (3037), and others of equal note. All the stock will be on view for inspection two days previous to the sale.

A big sale of thoroughbreds is being arranged at Grand's for Tuesday, September 24th, for which a catalogue may be had on application. See special announcement elsewhere in this issue.

**For Safe Keeping.**

Mr. Fijit—Say, that's the rottenest tobacco I ever smoked!  
Mrs. Fijit—Oh, George, you're smoking up my fancy silk! I put it in your tobacco jar for safe-keeping.—Ohio State Journal.

"Grandmother, do your spectacles magnify?"  
"Yes, dear; why?"  
"Then won't you please take them off before you cut my piece of cake?"



Paint with  
out Oil  
or Brush.

Paint your buildings  
at one-tenth the former  
cost.

The **Spramotor**  
**Cold Water Paint** re-  
quires only the addition  
of cold water to make a  
fluid paint. It is put on  
your buildings by the  
"Spramotor" with paint-  
ing attachments. Will  
paint house or barn,  
shingles and all, white-  
wash or tint the interior.  
Color will not rub off.  
Tell us what you want  
to paint and let us quote  
you.

The **SPRAMOTOR CO.**  
LONDON, ONT.

**Manufacturers of**  
**Spramotor**  
Spraying and  
painting machines,  
Cold water paint,  
etc.

**ONTARIO VETERINARY COLLEGE, Limited**

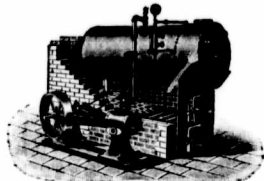
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Affiliated with the University of Toronto.  
Patrons: Governor General of Canada and Lieu-  
tenant-Governor of Ontario. The most successful  
Veterinary Institution in America. Experienced  
Teachers. Fees, \$65 per session.

PRINCIPAL, PROF. SMITH, F.R.C.V.S.,  
TORONTO, CANADA

**E. LEONARD & SONS**

Engine and Boiler Manufacturers  
LONDON, ONT.



Leonard Dairy Engine Boiler.

Engines and Boilers for Cheese and Butter Factor-  
ies, Saw and Grist Mills, and Elevators, also Portable  
Engines for Threshing. High-grade Engines for  
Electric Light and Power Plants.

It is in need of power for any purpose, write us  
stating your need, and ask for catalogue.

**Our market reports are reli-  
able and up-to-date. They are  
written specially for The Farm-  
ing World and are of inesti-  
mable value to every farmer.**

			
<b>SKY LIGHT</b>	<b>THE SAFE LOCK SHINGLE</b>	<b>BABY SHINGLE</b>	<b>CORNICE</b>
	<b>ROOFING...</b>		
<b>SIDING</b>	For houses and barns, making them fire and lightning proof.	<b>SIDING</b>	<b>SIDING</b>
	<b>SIDING...</b>		
<b>CEILING</b>	To make old buildings warm and look like new.	<b>CEILING</b>	<b>CEILING</b>
	<b>CEILINGS...</b>		
<b>WINDOW</b>	For ornamentation and wear.	<b>WINDOW</b>	<b>WINDOW</b>
	<b>Ask for free catalogue describing these goods.</b>		
<b>ELBOW</b>		<b>ELBOW</b>	<b>ELBOW</b>
<b>METAL SHINGLE &amp; SIDING CO., LIMITED, PRESTON, ONT.</b>			

### List of Fall Fairs

The following are the dates for a number of fairs to be held this fall. We would be glad to receive from secretaries of local and other fairs not included in this list, the dates of their fairs.

Industrial, Toron- to .....	Aug. 26 to Sept. 7
Eastern, Sherbrooke.	
Que .....	Aug. 31 to Sept. 7
Unionville, Unionville ..	Sept. 3-5
Harrow'snath, Harrow- smith .....	Sept. 5-6
Western, London .....	Sept. 5-14
Kingston District, King- ston .....	Sept. 9-13
Orno, Orno .....	Sept. 10-11
Hamilton, Hamilton .....	Sept. 10-12
Wilmot, New Hamburg ..	Sept. 12-13
West Durham, Bowman- ville .....	Sept. 12-13
Addington, Tamworth ..	Sept. 13-14
East Hastings, Glead ..	Sept. 13-14
Central Canada, Ottawa ..	Sept. 13-21
Nova Scotia, Halifax, N. S. ....	Sept. 14-21
Chesley Horticultural, Chesley .....	Sept. 16-17
Stephen and Ushorne, Exe- ter .....	Sept. 16-17
Newboro', Newboro' .....	Sept. 16-17
East Zorra, Tavistock ..	Sept. 16-17
Lennox, Napanee .....	Sept. 17-18
Central, Guelph .....	Sept. 17-19
South Lanark, Perth ..	Sept. 17-19
South Grenville, Prescott ..	Sept. 17-19
Scugog, Port Perry .....	Sept. 17-19
East Elgin, Aylmer .....	Sept. 17-19
West Middlesex, Strath- roy .....	Sept. 17-19
Northern, Walkerton ..	Sept. 18-19
Northern Fair, Ailsa Craig .....	Sept. 19-20
North Bruce, Port Elgin ..	Sept. 19-20
Sullivan, Desboro' .....	Sept. 19-20
North Leeds, Merrickville ..	Sept. 19-20
Eldon, Woodville .....	Sept. 19-20
Greenock, Pinkerton .....	Sept. 20
North Waterloo, Berlin ..	Sept. 20-21
Elma, Atwood .....	Sept. 24-25
Russell, Maccalf .....	Sept. 23-24
North Muskoka, Hunts- ville .....	Sept. 24-25
Clarke Tp., Orno .....	Sept. 24-25
Petrolea, Petrolea .....	Sept. 24-25
South Huron, Seaforth ..	Sept. 24-25
Drumbo, Drumbo .....	Sept. 24-25
Wellesley and N. E. Hope, Wellesley .....	Sept. 24-25
North Victoria, Victoria Road .....	Sept. 24-25
Haldimand, Cayuga .....	Sept. 24-25
Palmerston, Palmerston ..	Sept. 24-25
South Grey, Durham .....	Sept. 24-25
Uxbridge, Uxbridge .....	Sept. 24-25
Ancaster, Ancaster .....	Sept. 24-25
Alnwick, Roseneath .....	Sept. 24-25
Teeswater, Teeswater .....	Sept. 24-25
South Grimsby, South- ville .....	Sept. 24-25
Ripley, Ripley .....	Sept. 24-25
Central, Walter's Falls ..	Sept. 24-25
Centre Bruce, Paisley ..	Sept. 24-25
Great Southwestern, Es- sex .....	Sept. 24-26
Prescott, Vankleek Hill ..	Sept. 24-26
Central, Peterborough ..	Sept. 24-26
North Lanark, Almonte ..	Sept. 24-26
Northern, Collingwood ..	Sept. 24-27
Streetsville, Streetsville ..	Sept. 25
Mosa and Elfrid, Glencoe ..	Sept. 25-26
Prince Edward, Pictou ..	Sept. 25-26
Tiny and Tay, Midland ..	Sept. 25-26

### A Few Facts About

## "Cream Equivalent"

For Raising Calves on Separated or Skim Milk

"CREAM EQUIVALENT" supplies at a small cost what almost every calf rearer wants, viz: a gruel that will enable him SUCCESSFULLY to supplement the supply of milk; or enrich separated milk; or rear the calves on occasion without any milk at all.

It represents the net results of hundreds of practical tests carried out at our own Experimental Farm, at Hall o' Coole, Cheshire, Eng. This farm, with a herd of about 80 dairy cattle, is kept for the special purpose of carrying out experiments in feeding, in order to put before our patrons foods which will give the best and most economical results. It enables us to turn out products of real practical value.

"CREAM EQUIVALENT" is the most popular food on the market and probably rears more calves than all other manufactured calf foods put together. Calves take to it readily and thrive well on it. The calves reared on it are stronger, healthier, and better grown animals in every way than those reared on any other preparation of the kind.

It contains no chemicals or materials which might be in any way injurious; it is not a condiment or spice, but a plain, wholesome food containing the nutriment essential to vigorous growth.

An important point that should not be overlooked is that the cost of feeding with "Cream Equivalent" is small and there is therefore no excuse for using an inferior article. The price is: 50 lb. bag \$2; 100 lb. bag \$3 50, freight prepaid to nearest railroad station. To be obtained from local dealers, or direct from

J. BIBBY & SONS, 10 Bay Street, Toronto

THE TIME TO INSURE IS

# NOW

WHILE YOU ARE WEAK, STRONG AND INSURABLE.

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# Confederation Life

ASSOCIATION issues policies on all approved plans of insurance, and is a prosperous and progressive Canadian Company.

PROTECTION FOR YOUR FAMILY.  
PROFITABLE INVESTMENT FOR YOURSELF.

Pamphlets and full information sent on application.

HON. SIR W. P. HOWLAND, K.C.M.G., C.B.,  
PRESIDENT

W. M. BEATTY, Esq., W. D. MATTHEWS, Esq.,  
VICE-PRESIDENTS.

W. C. MACDONALD, ACTUARY. J. K. MACDONALD, MANAGING DIRECTOR.

HEAD OFFICE, - TORONTO.

Central Simcoe, Barrie...	Sept. 25-27
South Renfrew, Renfrew...	Sept. 26-27
Warton, Warton .....	Sept. 26-27
Halton, Milton .....	Sept. 26-27
Mornington, Milverton ..	Sept. 26-27
West Wellington, Harrison .....	Sept. 26-27
Parry Sound, Parry Sound .....	Sept. 26-27
N. & W. Oxford, Ingersoll ..	Sept. 26-27
East Grey, Flesherton .....	Sept. 26-27
North Brant, Paris .....	Sept. 26-27
Fullerton-Logan, Mitchell ..	Sept. 26-27
Turnberry, Wingham .....	Sept. 26-27
Brock, Sunderland .....	Sept. 26-27
Dufferin, Orangeville .....	Sept. 26-27
Walpole, Jarvis .....	Sept. 26-27
Durham, Whitby .....	Sept. 26-27
Central, Lindsay .....	Sept. 26-28
Shedden, Shedden .....	Sept. 27
West York, Weston .....	Sept. 27
Mara, Brechin .....	Sept. 27
Dundas, Morrisburg .....	Sept. 27-29
Tyendinaga, Shannonsville ..	Sept. 28
Holland, Chatsworth .....	Sept. 30-Oct. 1
Carleton, Richmond .....	Sept. 30-Oct. 2
East Simcoe, Orillia .....	Sept. 30-Oct. 2
Plympton, Wyoming .....	Sept. 26-27
North York, Newmarket .....	Sept. 17-19
West Northumberland, Cobourg .....	Sept. 26-27
East Kent, Thamesville .....	Sept. 30-Oct. 1
Centre Wellington, Fergus ..	Sept. 26-27
Watford, Watford .....	Oct. 1-2
South Waterloo, Galt .....	Oct. 1-2
Great Northwestern, Goderich .....	Oct. 1-2
Tilsonburg, Tilsonburg .....	Oct. 1-2
Peel, Brampton .....	Oct. 1-2
South Perth, St. Mary's .....	Oct. 1-2
Listowel, Listowel .....	Oct. 1-2
Huntley, Carp .....	Oct. 1-2
Proton, Dundalk .....	Oct. 1-2
Port Hope .....	Oct. 1-2
Cartwright, Blackstock .....	Oct. 1-2
North Oxford, Woodstock .....	Oct. 1-2
Bentick, Hanover .....	Oct. 1-2
Stayner, Stayner .....	Oct. 1-2
East Algoma, S. Ste Marie .....	Oct. 1-2
North Dorchester .....	Oct. 2
Ontonabee, Keene .....	Oct. 2-3
Alvinston, Alvinston .....	Oct. 2-3
Woolwich, Elmira .....	Oct. 2-3
Western Branch, Dunnville ..	Oct. 2-3
Arthur, Arthur .....	Oct. 2-3
Kincardine, Kincardine .....	Oct. 2-3
Lan-downe, Lansdowne .....	Oct. 2-3
Six Nations, Oshwekan .....	Oct. 2-4
North Grey, Owen Sound .....	Oct. 2-4
East York, Markham .....	Oct. 2-4
West Zorra, Embro .....	Oct. 2-3
Tossoronto-Alliston, Alliston .....	Oct. 3-4
Gravenhurst, Gravenhurst ..	Oct. 3-4
East Durham, Millbrook .....	Oct. 3-4
Bobcaygeon, Bobcaygeon .....	Oct. 3-4
E. Northumberland, Warkworth .....	Oct. 3-4
Coldwater .....	Oct. 3-4
Dundas .....	Oct. 3-4
East Huron, Brussels .....	Oct. 3-4
Coldwater, Coldwater .....	Oct. 3-4

North Renfrew, Beachburg .....	Oct. 3-4
Bolton .....	Oct. 3-4
Ridgetown, Ridgetown .....	Oct. 3-5
Bosanquet, Theford .....	Oct. 4
South Oxford, Otterville .....	Oct. 4-5
Moore, Bridgen .....	Oct. 6
"World's," Rockton .....	Oct. 8-9
North Perth, Stratford .....	Oct. 8-9
Glencig, Markdale .....	Oct. 8-9
North Norwich, Norwich .....	Oct. 8-9
East Peterborough, Norwood .....	Oct. 8-9
Forest Union, Forest .....	Oct. 8-9
Cardwell, Beeton .....	Oct. 8-9
Blyth and Morris, Blyth .....	Oct. 8-9
Thorah, Beaverton .....	Oct. 8-9
Peninsular, Chatham .....	Oct. 8-10
Elmvale .....	Oct. 8-10
West Nissouri, Thorndale .....	Oct. 8
Scarboro' .....	Oct. 9
Clifford, Clifford .....	Oct. 9-10
Dungannon, Dungannon .....	Oct. 10-11
Pilkington, Elora .....	Oct. 10-11
Caledonia, Caledonia .....	Oct. 10-11
Sutton .....	Oct. 10-11
Derby, Kilsyth .....	Oct. 10-11
Oxford, Highgate .....	Oct. 11-12
Corrie, Corrie .....	Oct. 12
East Luther, Grand Valley .....	Oct. 15-16
East Gwillimbury, Queensville .....	Oct. 15-16
Norfolk, Simcoe .....	Oct. 15-17
Woodbridge, Woodbridge .....	Oct. 16-17
Freelton, Freelton .....	Oct. 16-17
Erin, Erin .....	Oct. 17-18
Camden, Dresden .....	Oct. 2-3
Trafalgar, Oakville .....	Oct. 3-4
Caledon, Caledon .....	Oct. 10-11
Esquesing, Acton .....	Oct. 3-4
King, Schomberg .....	Oct. 10-11

At a banquet at Sydney, a descendant of the Macdonald's massacred at Glencoe passed a knife, "with the blade foremost," to a member of a famous old family bearing the historic name of the Macdonald's betrayers. Most of those who looked on stigmatized the action as one of contemptibly bad breeding. But one or two understood the significance and knew that the betrayal is still unforgiven.

Horse Owners Should Use  
**GOMBAULT'S**  
**Caustic Balsam**  
The Great French Veterinary Remedy.  
**A SAFE, SPEEDY AND POSITIVE CURE.**



Prepared exclusively by J. E. Gombault, ex-Veterinary Surgeon to the French Government Stud.

**SUPERSEDES ALL CAUTERY OR FIRING**  
Impossible to produce any scar or bluish. The safest best Blister ever used. Takes the place of all liniments for mild or severe action. Removes all Bunches or Humors from Horses or Cattle.

As a **HUMAN REMEDY** for Rheumatism, Sprains, Sore Throat, Etc., it is invaluable.

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Sample copies of The Farming World will be sent to any address, free of charge, upon request. Send us the name of a friend who does not subscribe and we will send the paper for two weeks free on trial. Address, The Farming World, Toronto.



There is no Chopper equal to the  
**"New Champion" or "Joliette"**  
Don't fail to look for it in the Implement Building at the Fair.

Remember that it takes one-third less power to do the work than any other.

The price is right, too.

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THAT'S THE IDEA  
**The Cyphers Incubators**

are positively warranted to last **TEN YEARS**, without repairs, and are guaranteed to **OUT-HATCH**, during three trials, any other make of incubator on the market—bar none. **THIS, OR YOUR MONEY BACK.** Used exclusively at Experimental Farms, Guelph and N.W.T. and Ottawa; Dominion Government Poultry Stations, Whitby, Truro (N.S.), and Quebec; also six American Experimental Stations. Daniels, the universal provider in Poultry Supply business, has the sole agency for the Cyphers Incubators and Brooders for Canada. Our list of poultry supplies are too numerous to mention here, but just drop us a line and state what you require. We handle nothing but the best. Satisfaction every time or money refunded.

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We want three or four canvassers for **THE FARMING WORLD**. A good income can be made. Write us.



### Ideal Farm Homes

Design No. 18, shown on this page will undoubtedly strike you at once as being a very substantial, roomy house. It is not covered with a lot of so-called ginger-bread work put on for show, and still there is enough ornament about it to take off any severe look that there might be about a house of this shape. There are four good-sized rooms down stairs, the sitting-room and dining-room opening into each other, with sliding doors between; the parlor and sitting room also can be thrown into one. The porch on one end and one side of the parlor would be a great attrac-

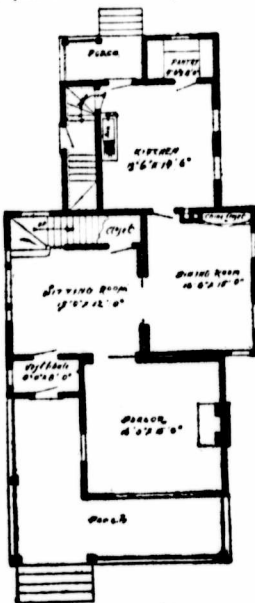
tion to many people, in fact to all who have had a chance to enjoy them. It would be even better if the porch were on three sides, but this cannot always very well be.

There are four chambers up stairs, all light and airy. There is also a bath and plenty of closet room. The rooms, if you will notice, are all square or nearly so. This of course does not make as much difference now that so many people use rugs in furnishing as it used to with the old idea that every inch of the floor must be carpeted, but there is this difference in building a house for carpets or rugs. If you build for rugs, it requires a little better flooring.

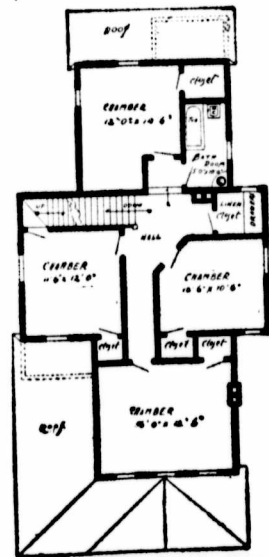
Everything about this house according to our specifications must be of the best workmanship and material. In size the house is 30 feet in width by 48 feet in length, exclusive of porches. The blue prints consist of cellar and foundation plan, front, rear and two sides elevations; wall sections and all necessary interior details. The blue prints, together with a complete set of typewritten specifications, can be had at the office of The Farming World for \$4.00. It will cost to build this house about \$1,700, exclusive of plumbing and mantels. This price, \$1,700, builds the house complete from the cellar up, taking care of the excavation and cellar wall, and leaving out nothing but what has been mentioned.

It possibly has never occurred to many, particularly to those who only build one or two houses in a life time what a saving can be made either by employing the services of an architect or buying a first-class set of plans. These plans that we present are made by a first-class architect—one who has met with great success in planning these moderate-priced houses and the services you would get from our blue prints and specifications are

exactly the same that you would receive from an architect whom you would pay ten or fifteen times as much as you would for a set of these blue prints and specifications. If anyone will stop and think for a moment he will realize wherein the saving comes. A carpenter goes to work to build you a house with a few marks on a piece of paper, perhaps giving the location of the rooms, but in the building you have to so often stop to consider whether you will have this closet here or that window there, that it is a hindrance to the construction, wherein if you have a perfect plan the work can be laid out from the start and nothing need stop.



First Floor Plan.



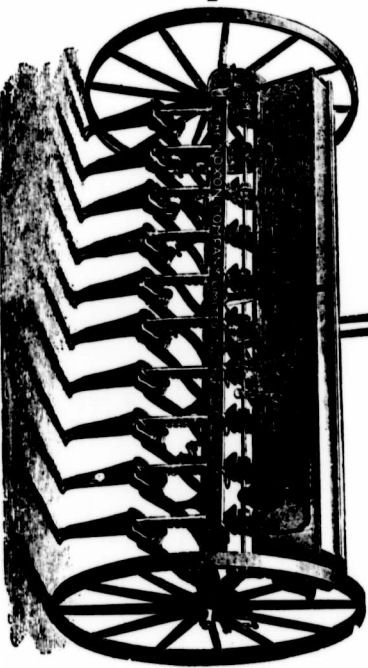
Second Floor Plan.



N O X O N



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 The Celebrated Hoosier Force Feed is Imitated by Many, but None as Good.



Every Machine is run off and Thoroughly Tested Before Leaving the Works.

Depth can be Regulated to any Desired Extent.

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**THE NOXON CO., Limited,**  
 277 KINGSTON AVENUE, 28  
 Ingersoll, Ontario, Canada.

N O X O N

**Queer English.**

We'll begin with a box and the plural is boxes.  
 But the plural of ox should be oxen, not oxes.  
 Then one fowl is goose, but two are called geese.  
 Yet the plural of mouse should never be mice.  
 You may had a lone mouse, or a whole nest of mice.  
 But the plural of house is houses, not hices.  
 If the plural of man is always called men.  
 Why shouldn't the plural of pan be called pen?  
 The cow in the plural may be cows or kine.  
 But a cow if repeated is never called kine.  
 And the plural of vow is vows, not vine.  
 And if I speak of a foot and you show me your feet,  
 And I give you a boot, would a pair be called beet?  
 If one is a tooth, and a whole set are teeth.  
 Why shouldn't the plural of booth be called beeth?  
 If the singular's this, and the plural is these.  
 Should the plural of kiss be nicknamed keese?

Then one may be that and three would be those.  
 Yet hat in a plural would never be lose.  
 We speak of a brother, and also of brethren.  
 But though we say mother, we never say methren.  
 Then masculine pronouns are he, his and him.  
 But imagine the feminine—she, shis and shim.  
 So the English, I think, you all will agree,  
 Is the most wonderful language you ever did see.

A dealer in stuffed animals, who also kept a few live creatures for sale, gave his shop boy, who was permitted to sell the stuffed specimens, orders to call him when any one asked for any of the living animals. One day a gentleman called and demanded a monkey.

"Any one of these?" asked the boy who was in charge, pointing to the stuffed specimens.

"No, I want a live monkey," answered the customer.

The boy stepped to the door of the back shop and called to his master: "You're wanted, sir."—Exchange.

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**Offers advantages not obtainable in any other Institution of Higher Education on this Continent.**



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TORONTO.

**Tell your neighbor about THE FARMING WORLD It will pay you and help him. Sample copy free. Write us.**

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**Monthly Magazine Numbers, \$1.00 a Year**

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- "The Man from Glengarry," by Ralph Connor, is the leading serial feature of this season.
- The Home, the Young People, the Missionary World, the Literary World, and all other departments are ably conducted.
- Send One Dollar and get it for One Year.

SEND FOR SAMPLE COPIES

**Weekly and Monthly Numbers, \$2.00 a Year**

- The forty weekly issues of THE WESTMINSTER are devoted specially to the life and work of the Presbyterian Church, and should be in every Presbyterian home in Canada. THE WESTMINSTER, monthly and weekly—52 issues—will be sent to any address in Canada or the United States for \$2.00.

- The opening chapters of "The Man from Glengarry," Ralph Connor's new story, will be sent to new subscribers ordering at once.



TORONTO PREMISES OF THE ATLANTIC REFINING COMPANY. SEE PAGE 232.

# THE GOOD ROADS MACHINERY COMPANY LIMITED

Office and Factory—The Late Killey Beckett Works, 144 York St., Hamilton, Ont.

Sole Manufacturers of the "CHAMPION" line of ROAD-MAKING MACHINES

"CHAMPION" Rock-Crushers, Road-Graders, Road-Rollers, Macadam Spreading Wagons, Street Mud-Cleaners, Road Plows, Wheel and Drag Scrapers.



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## The Good Roads Machinery Company LIMITED, Hamilton, Canada

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## PURE-BRED STOCK

### NOTES AND NEWS FROM THE BREEDERS

*These columns are set apart exclusively for the use of breeders of pure-bred stock and poultry. Any information as to importations made, the sale and purchase of stock and the condition of herds and flocks that is not in the nature of an advertisement will be welcomed. Our desire is to make this the medium for conveying information as to the transfer of pure-bred animals and the condition of live stock throughout the country. The co-operation of all breeders is earnestly solicited in making this department as useful and as interesting as possible. The editor reserves the right to eliminate any matter that he may consider best suited to our advertising columns.*

#### Cattle.

Mr. A. C. Hallman, New Dundee, Ont., writes:—

"My herd of Holsteins were never as complete, I have some 30 head of very choice bred animals. I am showing four calves and my bull at Toronto. They all are in breeding conditions. I only made up my mind to exhibit at the last hour, and have done no fitting. I will be pleased to see and meet my many friends very fine stock. My imported boar, at Toronto. My Tamworths are a British King, is doing me a great service, bred to such choice sows as I have for foundation stock."

#### Sheep

Messrs. Alfred Mansell & Co., Shrewsbury, England, write us as follows regarding Mr. Robt. Miller's shipment of 232 sheep

"The selection comprised 16 grand Royal Oxforde, viz., one of Mr. Treweek's 1st prize pen of ewe lambs and one of Mr. H. W. Stilgoe's reserve number pen at the R.A.S.E., Mr. Treadwell's 2nd prize two-shear ram at Cardiff Royal, Mr. R. W. Hobbs' 2nd prize pen of ewes, and one out of the third prize pen at the same show; also five grand shearing rams selected from the prize-winning flock of Mr. J. T. Hobbs.

The Dorsets consisted of the 1st prize shearing ewes at the Royal and two other ewes, three 1st prize ewe lambs and two 2nd prize lambs at the Royal Counties' Show, and two good ram lambs, all from that successful breeder, Mr. W. R. Flower. Seven Dorsets of both sexes were also bought from Mr. E. T. Culverwell.

The Hampshires consisted of two shearing rams, including one which was let at 90gs. as a lamb and one ram lamb, and three smart ewe lambs from Mr. James Flower's wonderful Royal prize-winning flock.

The Paghams Harbour Company supplied the Southdowns, a very fine lot, viz., three yearling rams, three ram lambs, four yearling ewes, and four ewe lambs.

The Cotswolds contained no less than eight 1st prize Royal winners, all bred by Mr. W. T. Garne, viz., 1st prize ewes, three 1st prize ram lambs, and two 1st prize ewe lambs; and from the same breeder 73 sheep of both sexes and various ages, including several show sheep, were procured. Two good rams and two ewes were supplied by Mr. W. Houlton.

The Shropshires were an exceedingly choice lot, and quite equal to anything Mr. Miller has taken out before. They comprised the 2nd prize (Mr. R. P. Cooper's) pen of shearing ewes at the Royal, a grand ram out of Mr. P. L. Mills' pen at the R.A.S.E., 15 smart ewes from Mr. T. S.

Minton's flock, 36 rams from Mr. J. S. Harding, and other breeders; two ram lambs and two ewe lambs, winners at the Shropshire and West Midland Show; five ewes, first at Hereford, bred by Sir J. Pulley, Bart.; the pretty pen of five ewe lambs, first at the Shropshire and West Midland Show, 23 ewes and two ram lambs, all bred by the veteran breeder, Mr. John Harding."

On the 20th July last, Messrs. Alfred Mansell & Co., Live Stock Exporters, Shrewsbury, shipped per the "s. Lakonia (Donaldson Line) to Quebec, a select shipment of Shropshire sheep, on account of Mr. C. W. S. Carpenter, comprising—1 ram, 20 ewes, and 1 ram lamb. The ram, which was an especially forward, well-grown, short-legged, deep sheep, particularly well woolled about the head and legs, was selected from the prize-winning flock of Mr. P. L. Mills and sired by Escutcheon, 10333, by Court Favour, and going back on his dam's side of Plymouth Champion, the 1st prize ram at Plymouth Royal, sold for 150 guineas. The bulk of the ewes also came from the same flock, and were a very typical nice lot of sheep, in healthy breeding condition, sired by such well-known rams as Scotland's Hero, 10116, bred by Mr. Buttar, winner at Birmingham Royal Show, and sired by Crested Knight, who, it will be remembered, is the sire of Royal Record, 1st prize shearing at Birmingham R.A.S.E., and sold to Mr. Cooper for 310 guineas; and P.D.Q., 10478, bought from Mr. A. E. Mansell for 150 guineas, got by the celebrated ram Ulster Rose. Many of these ewes traced back on the dam's side to some noted rams, including Plymouth Champion, Rudington Eclipse, purchased at 250 guineas; Sir Wilfrid Laurier, bred by Mr. Bowen Jones, which was shown successfully as a 2-shear in South Africa; The Champion, bred by Mrs. Barrs, and sold for 160 guineas; and Fortitude, 9025, sire of Mr. A. E. Mansell's successful getter Fortification.

To complete the shipment, an exceedingly well-developed and forward, well-woolled ram lamb was selected from Mr. Edward Nock's flock, sired by Thorne Chieftain, 9724, by Fnsdon Chief, dam a ewe by Carbon, 6749, and then to Young Hercules, 8339. It will be noted that these are an especially well-bred lot of sheep, and as they are only of nice ordinary condition they should do well in their new home.

#### Swine.

Messrs. Brethour & Saunders report a very strong demand for their Yorkshires. During the last week they have sold over \$1,500.00 worth which includes a carload that was purchased



THE GREAT

## Auction Sale

(F)

### Registered Clydesdale Fillies, Stallions and Geldings

Consigned by Messrs. Edmonds & McGregor, Blenheim, Ont., will be held at

### Grand's Repository

53 to 59 Adelaide Street West,

TORONTO

Wednesday, Sept. 4th, at 10 a.m.

The Catalogue, which may be had on application to the undersigned, contains complete pedigrees of the following, all foaled in 1899:

Ned Rakerfield	[2676]	Bay Stallion
Belle MacMaster	[3068]	Bay Filly
Beulah Belle	[3037]	Brown Filly
Hianche Atkinson	[3036]	Bay Filly
Denfield Pride	[3034]	Bay Filly
Granton Fancy	[3040]	Bay Filly
Jean Little	[3030]	Bay Filly
Jean McAndless	[3038]	Bay Filly
Lady Bice	[3047]	Bay Filly
Ladysmith	[2738]	Brown Filly
Maude Donley	[3035]	Bay Filly
Nora MacMaster	[3067]	Bay Filly
Rachel R.	[3078]	Bay Filly
Evening Star		Sorrel Filly
Home Girl		Bay Filly
Lady Lyndock		Bay Filly
Honest Lad		Bay Gelding
Kitchener		Bay Gelding

All on view for inspection two days previous to sale.

**Mr. Hendrie's next Great Sale of Thoroughbreds will be held at the Repository on Tuesday, September 24th.**

The catalogue will include Brood Mares, Stallions, Fillies and Geldings.

The usual sales will be held every Tuesday and Friday at 11 o'clock.

**WALTER HARLAND SMITH,**  
Auctioneer and Proprietor.

Spooner's "PHENYLE"  
Powder  
"Phenyle"  
**GERMICIDE  
DISINFECTANT.**

#### KILLS CHICKEN LICE

and Lice on Horses and Cattle, and Ticks on Sheep. Keeps them Healthy. Easily applied; no dip required.

60lb. boxes, 1lb. packages	25c. lb.
70lb. pails	15c. lb.
400lb. barrels	10c. lb.

If your Druggist does not sell it, send direct to

**ALONZO W. SPOONER,**  
Laboratory, PORT HOPE, Ont.  
It will cure and prevent hog cholera.

by a firm of pork packers for distribution among their hog breeders in the State of Iowa.

One of the young boars that they have entered in the class under one year at the Pan-American Exhibition has been sold for \$200.00. This young boar is pronounced by competent judges to be the best ever bred in Canada. They are making an exhibit of thirty hogs at the Pan-American, and they consider that they are as choice a collection as they have ever brought out, and every pig is of Oak Lodge breeding, with one exception, an imported one, which was a prize winner in England. Their importation, which was recently purchased in England, has arrived in splendid condition and are a very fine lot.

Messrs. Durham & Cavan, East Toronto, write:

"Trade has been good in Berkshires and Collies, especially in pigs, and we have sent away a large number to all parts of Canada, and many to the U. S. Owing to the large demand we foolishly priced many of our best show pigs, and they were snapped up quickly, consequently, it has somewhat spoiled our show herd for this year, so that we will only show a few head that are fitted, and take along a lot of good young stock for sale, which we will price very reasonably, and think we can offer our customers some especially good young sows, etc. We will not show any Shropshires or Collies this year but can offer some good stock of those varieties for sale very reasonably, and all are of the most fashionable breeding, many of them from imported stock with noted prize-winning records.

"We would be pleased to have all interested give us a call when at the 'Industrial' if you can make it convenient."

Per the ss. Lakonia, sailing from Glasgow on the 20th July, for Quebec, Messrs. Alfred Mansell & Co., the well-known live stock exporters, shipped on account of Messrs. Reid & Co., two prize Tamworth pigs as follows:

The best boar of the 1st prize pen at the Royal Show, exhibited by Mr. D. W. Philip, sire Knowle Hiawatha, 5781, the highest priced boar at Mr. Ibbotson's sale last year, and the winner of the following prizes—1st Royal, 1st Yorkshire, 1st Lancashire, 1st B. and W. E., 1st Royal Counties, 1st Norfolk, 1st Warwick, a total of seven first prizes, never having been beaten; his dam being Whitacre Matchless, 10050, 1st winner Cardiff, R. A. S. E., in a very strong class.

The gilt was selected from Mr. R. Ibbotson's well-known pigs, and comprised the best gilt of the 1st prize pen of gilts at the Royal Show at Cardiff, sired by the 2nd prize winner at the B. and W. E. Show, of this year, from one of Mr. Daybell's favorite old sows, which won 1st in her class, and Reserve for Breed Cup in London, 1895, and 1st Yorkshire Show, 1896.

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- (1) **Two Years' Course for Associate Diploma, Sept. 13th.**
- (2) **Four Years' Course for B.S.A. Degree, Sept. 13th.**
- (3) **Dairy Course, Jan. 4th.**
- (4) **Two Weeks' Course in Judging Live Stock and Seed Grain Jan. 8th.**
- (5) **Four Weeks' Course in Poultry Raising, Jan. 10th.**

Send for Circular giving full information as to cost, terms of admission, etc.

July, 1901.

JAMES MILLS, M.A., President.

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DUCKS  
GEESE  
TURKEYS**

# WANTED

We forward empty crates to any express office in Ontario, and pay express charges both ways. As we have a steady demand for all the birds we can procure we would be pleased to purchase poultry at all times of the year and in any quantity. Write to us for further particulars, and if you have any time to spare for us you will find it a very profitable employment.

Toronto Poultry and Garden Produce Co., Limited - Davisville P.O.  
Toronto Telephone, North 1030.

## MICA ROOFING

Use Mica Roofing on all your buildings.

IT IS CHEAPER THAN SHINGLES.

Waterproof  
Fireproof



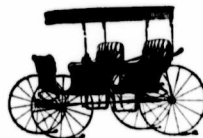
Use Mica Paint to repair leaky roofs.

Shingle, Iron or Tin Roofs painted with it will last twice as long.

**RAPIDLY TAKING THE PLACE OF SHINGLES**

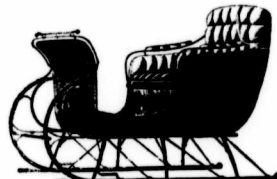
Is put up in rolls of one square each, 40 ft. long by 32 in. wide, and costs only \$2.25, including nails, thus affording a light, durable and inexpensive roofing, suitable for buildings of every description—especially flat roofs—and can be laid by any person of ordinary intelligence.

HAMILTON MICA ROOFING COMPANY, 101 REBECCA ST., HAMILTON, ONTARIO



No. 30. Surrey, \$54.

**FARM  
TRUCK  
WAGONS**



Latest style Cutters. Best finish and trimming.

**BOB  
SLEIGHS**

**Two  
and  
Three-Knee**

For further particulars and catalogue, enclose two 2c. stamp.

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No. 18. Buggy, \$30.

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# Market Review and Forecast

Office of The Farming World,  
 Confederation Line Building,  
 Toronto, August 29th, 1901.

Trade during the past week has been fairly satisfactory. Fall orders, so far, compare favorably with those of last year at this time. Merchants generally look for a good fall's trade. Remittances have been somewhat slow. Money is quiet at about 5 per cent. on call, and mercantile paper is discounted at from 6 to 7 per cent., about 6½ being the rule.

## Wheat.

The wheat markets have fluctuated much of late, owing to reports of crop failures, etc. The market is certainly in splendid shape for manipulation by speculators, and they seem to be making good use of the opportunity. Aside from the speculative feature, market conditions rather favor steady and firmer prices. The persistent reports of the failure of the Russian crop and the expected shortage in the American corn crop, gives a firmer outlook. Although cables have been weak of late there has been a liberal export movement of wheat from the United States, and it looks as if the English dealer, knowing his own crop to be short, is buying as much as possible at present reasonable prices. On the whole, the outlook at present seems to favor stronger prices.

Local markets are rather quiet. New wheat is quoted here at 65c., middle freights; goose at 64½c., and spring life at 67c., east. Manitoba wheat is quoted at about 73c., Fort William. On Toronto farmers' market, old red and white bring 70c. to 73½c., and goose 65c. to 68½c. per bushel.

## Oats and Barley.

The oat market keeps steady. Old is quoted here at 35c. for No. 2 middle freights, and new, No. 2, at 33c. to 33½c. On the farmers' market here, oats bring 39c. to 40c. for old, and 36c. to 37c. for new per bushel.

Feeding barley is quoted at about 44c. west. On Toronto farmers' market it brings 48c. to 52c. per bushel.

## Peas and Corn.

The market for peas keeps very firm. Old peas are quoted here at 70c. for old and 67c. for new, middle freights. On the farmers' market here prices are nominal.

Another report of continued drought in Kansas has strengthened American corn values. American mixed is quoted here at 63c., Toronto and Canadian yellow at 53c. to 51c., Toronto.

## Bran and Shorts.

Ontario bran in bulk is quoted at Montreal at \$15.50 to \$16, and shorts at \$18 to \$19 in car lots on track. City mills here sell bran at \$15 and shorts at \$16 in car lots, f. o. b., Toronto, with an easier feeling reported.

## Potatoes and Beans.

Potatoes have taken another drop, owing to increased supplies. Job lots are quoted here at 60c. to 75c. per bushel, and the same figures on the farmers' market here.

Beans continue to advance in prices. It is a long time since the crop was so scarce in Canada. Part car lots in Western Ontario have been selling at \$2.10, f. o. b., per bushel.

## Hay and Straw.

Though Canada, and especially Quebec, has one of the biggest hay crops on record there seems to be a good demand for it. American buyers are still operating in Quebec, where they are contracting for baled hay at about \$7.50, f. o. b., for No. 2 Timothy. There is also a good export demand. At Montreal new hay is quoted at from \$8.25 to \$8.50 for the best quality in car lots. Prices are firm here, owing to a temporary scarcity and quotations are \$8 to \$8.50 for new baled hay in car lots on track. Car lots of baled straw are quoted at \$4.50 to \$5 on track. On Toronto farmers' market old hay brings \$13 to \$13.50 per ton, and new from \$9 to \$11. Sheafstraw brings from \$10 to \$10.50, and loose about \$6 per ton.

## Eggs and Poultry.

The egg market seems to be improving on both sides of the Atlantic. Straight lots of candled stock are quoted at Montreal at from 12½c. to 12¾c., in large lots. Though there is a liberal supply here, there is a good steady demand. Prices are 12½c. for selects, and 11½c. to 12c. for fresh gathered in case lots. On Toronto farmers' market eggs bring 13c. to 16c. for new laid and 12c. to 13c. for held stock.

A few shipments of live ducks have arrived on Toronto market, but they are hard to handle. Prices are steady at 60c. to 75c. per pair, and chickens at 45c. to 65c. in good sized lots. Turkeys bring from 10c. to 11c. per lb. in a wholesale way. On Toronto farmers' market, chickens, old, bring 50c. to 75c., spring, 50c. to 80c. and ducks 60c. to 75c. per pair, and turkeys 11c. to 13c. per lb.

The Canadian Produce Co., 36 and 38 Esplanade east, Toronto, will pay for week ending August 29, for ducklings not under four lbs. each, 4c. per lb., and spring chickens, not less than two lbs. each, 6c. per lb. For

hens (including last year's birds), 4c. per lb. These prices are for live weight on arrival.

## Fruit

Estimates of the apple crop for 1901 are now in order. The United States Government make the average for that country slightly less than 56 per cent. of crop. Only half a crop is estimated for England, so that Canadian apples are likely to be good property this season, and if there is not a big crop prices will be high. Apples are selling on Toronto fruit market at from 20c. to 35c. per basket. Other fruits show little change. Canadian pears sell at 25c. to 40c.; Bartlett's 40c. to 50c. Plums 30c. to 75c., and tomatoes 10c. to 20c. per basket.

## Cheese.

It seems evident that the rise in cheese of a few weeks back was largely speculative. Since then prices have ruled easier and declined from 4c. to 4½c. per lb. At the local markets this week very little business is doing and things seem to be dull. The ruling prices have been from 9c. to 9½c., with a few quotations of 8½c. and 8¾c. reported. The English market is reported steady under a good consumptive demand, though dealers there seem determined not to follow advances on this side. The decrease in shipments so far this season from the United States and Canada is 366,819 boxes as compared with the same period last year. But even this shortage and the prospect of none of it being made up before the close of the season does not seem to put any life into the market, which, to speak generally, is very draggy.

## Butter

In contrast with that of cheese the butter market continues firm. The Trade Bulletin of last week says:

"The market continues firm for finest creamery with sales of two per cent. salted at 21½c. to 21¾c.; but 21c. is a fair quotation for the bulk of the goods selling as finest. Some very fine goods sold on this market during the past few days at 20½c. to 20¾c., with a slow sale for seconds at 19c. to 20c. Choice dairy packed good Western has sold at 16½c. to 17c., and good at 15½c. to 16c. There is a considerable quantity of under-grade butter in cold storage awaiting a market on both sides of the Atlantic. The shipments of butter during

**CANADIAN PRODUCE Co.**

TORONTO

**Want Every Chicken in Ontario**

AND WANT AGENTS TO BUY THEM.

the past week from this port were 18,619 packages against 6,977 packages for the same week last year, and from New York 1,071 packages against 3,613 for the same week last year.

Choice creamery sells here at 21½c. for prints and 20½c. per lb. for packages. Ordinary creamery sells at from 19c. to 20c. per lb. Though dairy pound rolls are selling at 17c. to 18c. and tubs, crocks and pails at 16c. to 17c. in a jobbing way, the market is considered tippy and lower values are expected. On Toronto farmers' market pound rolls bring 19c. to 22c. each and crocks 18c. to 20c. per lb.

**Wool**

There is little, if any, improvement in wool. Local quotations here are the same as given last week, namely 8½c. for unwashed and 13½c. per lb. for washed fleece.

**Cattle**

There is a little more activity in live stock markets this week. At Toronto cattle market on Tuesday there was a large run of live stock, particularly of cattle and sheep, consisting of 1,110 cattle, 400 hogs, 2,442 sheep and lambs and about 50 calves. Very few choice exporters were offered for sale. There being a few boats with space to fill and a shortage in supply, prices were firmer for exporters, the tops of the market selling at \$5.05 to \$5.15, though the bulk sold at \$4.50 to \$4.90 per cwt. The demand for butchers' cattle was fairly good and prices were firm at quotations given below. Feeders are in demand. Three loads of Manitoba feeders sold at \$3.60 per cwt. Very few milch cows are being offered and these mostly of poor quality. Choice veal calves are in good demand. The best veal calf offered on Tuesday brought about \$12. It was six weeks old and weighed two hundred pounds.

Export Cattle—Choice loads of these are worth from \$4.90 to \$5.15 per cwt., and light ones \$4.40 to \$4.80 per cwt. Heavy export bulls sold at \$4.00 to \$4.25, and light ones at \$3.60 to \$3.75 per cwt.

Butchers' Cattle—Choice picked lots of these, equal in quality to the best exporters, weighing 980 to 1,125 lbs. each, sold at \$4.40 to \$4.60 per cwt., good cattle at \$4.00 to \$4.25, medium at \$3.50 to \$3.75, and inferior to common at \$2.50 to \$3.15 per cwt.

## Large English Berkshires

Young Stock For Sale from noted imported winners.

### Shropshire Sheep and Pedigreed Collie Dogs

From the most fashionable breeding stock and all for sale at reasonable prices. If you cannot come in person to select, we are always willing to ship C.O.D., so that you may see what you are getting.

**DURHAM & CAVAN,**  
East Toronto, Ont.

## Sheep



### Silver Creek Stock Farm

Shorthorn Cattle  
Oxford Down Sheep  
Bronze Turkey  
**THOS. ARKELL,**  
Teesswater, Ont.

## OXFORD DOWN SHEEP

J. H. JULL & SONS.

Yearling Rams and Ram Lambs, and Ewes of all ages, for sale. Prices reasonable. Our flock is headed with the best imported rams in Canada—prize winners in England, first prize at Toronto Industrial and all leading shows in Canada.  
Briant and Plain View Stock Farms,  
Mt. Vernon, Ontario, Can.

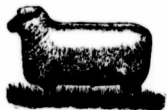
## OXFORDS

### AT FARNHAM FARM

50 Superior Yearling and Two Year Rams.  
2 Extra Fine Imported Lambs.  
100 Ram Lambs.  
And a number of good Yearling Ewes and Ewe Lambs.  
—PRICES REASONABLE.

**HENRY ARKELL, Arkell, Ont.**

## Oxford Downs for Sale!



1 Imported aged Ram  
4 Good Shearing Rams  
15 Good Ram Lambs  
12 Nice Ewe Lambs  
6 Shearing Ewes  
The above are all bred by Imp. Rams.  
8 or 10 aged Imported Ewes

—PRICES REASONABLE.—

**SMITH EVANS, : GOUROCK, ONT.**

## OXFORD DOWN SHEEP

Durham Cattle, "Milk-ling Steins"; Yorkshires; Pigs; Plymouth Rock Poultry.  
John Cousins & Sons,  
Harrison, Ont.



## DORSETS

**JOHN A. MCGILLIVRAY,**  
Uxbridge, Ont.

Finest and largest flock of show sheep ever shown at Toronto. 100 field ewes for sale; 15 very strong yearling rams. Will sell prize sheep after being exhibited at Buffalo. Apply at east end sheep building, Toronto, Exhibition.



**ROCK SALT** for horses and cattle, in ton and car lots. Toronto Salt Works, Toronto

## OAK LODGE YORKSHIRES



are acknowledged to be the best type of bacon hog to produce the ideal carcass for the best English trade. **CHAMPIONSHIP HERD AT TORONTO INDUSTRIAL EXHIBITION FOR NINE YEARS** also sweepstakes on Dressed Carcass at Provincial Winter Show. We have on hand now a large herd of different ages. Our prices are reasonable and the quality is guaranteed to be choice. Write

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Burford, Ontario

**J. A. RICHARDSON,** South Marsh, Ont., Breeder  
Holsteins, Dorset-Horned Sheep, Tamworth Swine.

**E. PANNAECKER,** Fairview Farm, Hespeler, Ont., breeder of reg. Holsteins. Stock for sale.

**DAVID McCRAE,** Janesfield, Guelph, Canada, Importer and Breeder of Galloway Cattle, Clydesdale Horses, and Cotswold Sheep. Choice animals for sale.

## IMPERIAL HOLSTEIN-FRIESIAN STOCK FARM

10 Young Bulls from one month to four months, bred from Winnie R's De Kol.

**W. H. SIMMONS,**  
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Breeder of POLLED ANGUS CATTLE  
Young Stock of both sexes for sale.

## RETTIE BROS.

**HOLSTEIN-FRIESIAN BREED RS**  
A few choice young animals for sale. **RETTIE BROS.,**  
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## J. DEVITT & SONS

BREEDERS OF

Clydesdale Horses and Shorthorn Cattle.

Stock for sale at all times. We will exhibit a few Clydes at Toronto Fair. If you are in need of anything in our line see us when at the Fair, or better come and see us at the farm. Farm 1 mile from Burlington Junction.

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Bred from sweepstakes herd.

Young stock of both sexes for Sale.

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## Yorkshires and Berkshires

**Barred P. Rock Eggs---**

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## MAPLE LEAF HERD

OF LARGE YORKSHIRES

...Young Stock for Sale

**ROBERT NICHOL,** BRUSSELS, ONT.

## FOR SALE

Pure Bred Improved Yorkshire Pigs.

**ANNANDALE FARM,**  
TILSONBURG, ONT.

**Feeders**—Heavy, well-bred steers, from 1,100 to 1,200 lbs. each, sold at \$3.75 to \$4.00, and other quality at \$3.40 to \$3.80 per cwt. Light steers, 900 to 1,000 lbs. each sold at \$3.25 to \$3.50 per cwt.

**Stockers**—Yearling steers, 500 to 800 lbs. each, sold at \$3 to \$3.25, of colors, and inferior quality at \$2.50 per cwt.

**Calves**—These are higher and active at Buffalo, veals bringing \$7.00 to \$7.50 per cwt. At Toronto market ordinary calves bring \$2 to \$10.00 each.

**Milch Cows**—Milch cows and springers sold at from \$27 to \$15 each.

**Sheep and Lambs**

The Buffalo market is active and stronger. Although the run of sheep and lambs was unusually large on Toronto market on Tuesday, prices remained fairly steady at \$3.40 to \$3.65 per cwt. for ewes, and \$2.50 to \$3.00 for bucks. Spring lambs sold at \$2.50 to \$3.50 each and \$1.00 to \$1.50 per cwt.

**Hogs**

There was a light run of hogs and prices are unchanged at \$7.25 per cwt. for select bacon hogs and \$6.75 for lights and fats. Uncured car lots sell at about \$7.00 per cwt.

The Wm. Davies Co., Toronto, for the week ending August 31st, will pay \$7.25 per cwt. for select bacon hogs and \$6.75 for lights and fats.

**Horses**

Though there is considerable more enquiry there is still very little business doing in horses. Evidently, buyers are holding off making purchases till after the Fair, when it is expected things will pick up considerably. A few horses were sold at Grand's on Tuesday, and a number of rejected remounts will be offered Friday.

**Bob White.**

There's a plump little chap in a speckled coat,

And he sits on the zigzag rails remote.

Where he whistles at breezy, bracing morn.

When the buckwheat is ripe, and stacked the corn;

"Bob White! Bob White! Bob White!"

Is he hailing some comrade as blithe as he?

Now I wonder where Robert White can be!

O'er the billows of gold and amber grain,

There is no one in sight—but, hark again;

"Bob White! Bob White! Bob White!"

Ah! I see why he calls; in the stubble there

Hide his plump little wife and babies fair!

So contented is he, and so proud of the same,

That he wants all the world to know his name:

"Bob White! Bob White! Bob White!"

—George Cooper.

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**FINE GROVE STOCK FARM.**

Rockland, Ont. On the C.P.R. and G.T.R. Railways. Special bargains on young bulls of superior merit and select Scotch breeding. Also thick young heifers at the right prices.

**Ayrshires, Jerseys, Shropshire sheep, and Clydesdale Horses.**

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**LAURENTIAN STOCK and DAIRY FARM, North Nation Mills, Que.**

Ayrshires, imported and home-bred herd headed by imported **Farm Glen Sud**, No. 1310 D. A. H. B. Jerseys all of the celebrated **St. Lambert** family; herd headed by **Lagar Fogs of St. Anne's**, 2570 A. J. C. C. Berkshire Pigs. Young stock of all the above breeds for sale.

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Imported bulls at head of herd; Glencairn 1rd, Napoleon of Auchenbrain, and Lord Dudley. Forty imported females, selected from leading Scotch herds, and their produce from above-named bulls. Size combined with quality and style, well-formed udders, good-sized teats, and capacity for large milk production. Bull calves for sale; also a few young cows and heifers. For prices and particulars, address

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Farm close to St. Anne Station, G.T.R. and C.P.R., 20 miles west of Montreal.

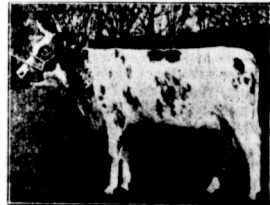
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Reinforced by a recent importation of 20 cows, 2 bulls, and a number of calves, selected from noted Scotch herds, and including the male and female champions at leading Scottish shows this year. Representatives of this herd won the first herd prize at the exhibitions at—

Toronto, London and Ottawa, in 1900

Come and see or write for prices

Young Bulls and Heifers for sale, bred from high-class imported stock.



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**Pure-bred Ayrshire Imported Cattle.**

LARGEST AND MOST EXPENSIVE IMPORTATION IN AMERICA.



Bred for the dairy, with grand constitution, and champion prize records awarded them in Scotland and England. Sweepstakes herd, Montreal, Toronto, London and Ottawa in 1897. Awarded four years in succession herd prize at Ottawa's great exhibition, and special gold medal; at Montreal, herd prize and Mr. W. W. Ogilvie's special \$100.00 prize. Their individual prize records are of the same distinguished honors of the four years of their exhibition career. Stock all ages for sale and at prices in reach of all.

Maple Grove Ayrshire Stock Farm, L.V.N. ONT. Line G.T.R. Box 720.

R. C. STEACY, Importer and Breeder, Brockville, Ont.

**SPRING BROOK STOCK FARM.**

HOLSTEINS, TANWORTHS and BARRED PLYMOUTH ROCKS.

My stock is select in all lines. Holsteins of highest quality. Young stock all DeKola. Over 60 head of Tanworts, bred from imported prize-winning stock of true bacon type. Meet me at Toronto. Will show a few Holsteins.

A. C. HALLMAN, New Dundas, Waterloo Co.



**PATTENING AND CONDITION POWDER**

THE great Blood Purifier for Cattle, Horses, Sheep and Hogs. A handful of this wonderful Purina mixed with the usual food strengthens the nerves, hardens the muscles, and generally invigorates. Recommended by eminent veterinary surgeons in Canada and United States.

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**Acid Fruit for Shoe Dressing**

People that have tried it say that orange juice is the best dressing in the world for black leather. Take a slice of orange and rub it thoroughly all over the boot or shoe. Allow it (the boot or shoe) to dry and then brush quickly with a soft brush until the article you are polishing shines like a looking glass.

A convenient dressing for tan shoes is the inside of a banana skin. Rub it well and evenly all over the shoe, and it will remove all spots and dirt as well as give a fine polish, which is brought out by using a flannel cloth for wiping dry and another for polishing after drying. Some persons use a slice of lemon as a dressing for russet leather, and recommend it to their friends.

Patent leathers are the most "uncertain, coy and hard to please" of any kind of shoe made. You can pay any price you please for a pair of patent leather and they will crack the first time you wear them. On the other hand you may buy a cheap pair that will not crack until they are nearly worn out. Everybody has his own favorite prescription for keeping patent leathers in good health and is ready to defend it against all comers. Heats that stood the storm when seas were rough and which sorrow but more closely tied have been driven far asunder through a dispute over the best way to take care of patent leathers. The shoeman will tell you to heat them before you put them on and they will not crack, but the shoeman will not guarantee them, and tells this only to be agreeable and make conversation. A good way to treat patent leathers is never to polish them with anything except fine sweet oil or vaseline. It is necessary to take a clean sponge and clean the shoe thoroughly before applying the oil or vaseline. After this treatment the shoe must be rubbed dry at once with flannel or some other soft cloth which will not scratch the patent finish—Reliance.

One of the curiosities of Wimborne Minster in Durham, England, is the tomb of Anthony Etricke, the first recorder of Poole, and the magistrate who committed the Duke of Monmouth after the battle of Sedgemoor. Tradition says Etricke had a quarrel with the people of Wimborne, so made a vow that he would "not be buried in their church or churchyard, under their ground or over." To carry out this vow he obtained leave to cut a niche in the wall of the Minster, and there he placed his own coffin, fixing at the same time the date he supposed he would die—1691. He did not die, however, until 1703, and the figures were altered accordingly. The coffin is brilliantly decorated with the arms of the Etricke family, and to prevent it from going to decay a sum of one pound a year was bequeathed to keep the niche and coffin in good repair.

Canning of fruits is commonly considered a difficult task, but if a few fundamental principles are understood and carefully observed, it is really a simple matter.

**ALVA FARM  
GUERNSEYS**

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**THE  
TYPICAL  
DAIRY  
BREED.**  
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Good Animals of both Sexes for Sale.

**Sydney Fisher,**  
KNOWLTON, QUE.

**AYRSHIRES AND  
YORKSHIRES  
FOR SALE.**

PURE-BRED AYRSHIRE BULLS coming 1 year old, fit for service, and one coming 2 years old. All sired by "White Prince" (Imp.) except the one coming 2 years old. As I am about renting my farm these bulls will be sold cheap if taken at once. Also a number of fine pure-bred Yorkshire Sows from one to four years old.

**JOHN H. DOUGLAS,**  
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**FOR SALE**

High-class Imported  
and Home-bred **Ayrshires,**

including cows, heifers and young bulls out of our prize and sweepstakes cows. Foundation selected with due regard to quality and productivity. Come or write.

**W. T. WYLIE,**  
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**LIVE STOCK  
LABELS**  
Send for circular  
and price list.  
**R. W. JAMES,**  
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**DAIRYMAN  
WANTED**

To take charge of dairy farm. Stock about 25 cows. Must be expert at judging cows, and a competent manager. Excellent position for the right man. In applying, send references, which must be good both as to character and ability, to

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**100 Head High-quality,  
Early-maturing Herefords**

**Prizewinners,  
Producers of Money-makers in the Feed Lot.**

The blood of "Corrector," "Eureka," "Ancient Briton" and "Rupert," on an "Anxiety" foundation.

Send for illustrated catalogue.

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BROOKLIN, ONTARIO,

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CHOICE . . . —AND—

**Shropshire Sheep.**

Fifty superior yearling rams ready for August delivery.

**Glen Crescent Shorthorns  
and Oxfords.**

Sheep of both sexes and all ages, and two bull calves by imported sire for sale.

**J. W. WIDDIFIELD,**  
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**MAPLE LODGE STOCK FARM.****Shorthorns For Sale.**

A few choice young bulls, and some excellent heifers and young cows. Our cows were awarded first prize at Prov. Dairy Test, 1889 and 1890. Imp. Knuckle Duster, and Imported Sir Wilfrid, at head of herd. Leicester sheep, imported and home bred. The best **A. W. SMITH, Maple Lodge P. O., Ont**

**SHORTHORN BULLS**

Two choice bulls about a year old

**FOR SALE**

**JOHN McNAB,**  
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**MATTANNGER STOCK FARM.****Shorthorns For Sale**

Including 3 Bulls, 2 Heifers. Calves from choice bulls and good milking cows, also Pea fowl.

**Walter H. Stevenson,**  
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**Cramming Machines**

Fattening Corps.

**Incubators and Brooders**

All kinds of Poultry Supplies.  
CATALOGUE FREE.

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It will prevent blackleg in cattle.  
It is ready for immediate use.  
Every lot is tested by us upon animals.  
No expensive outfit is required.  
Only the syringe and vaccine are necessary.  
Now is the time to vaccinate.  
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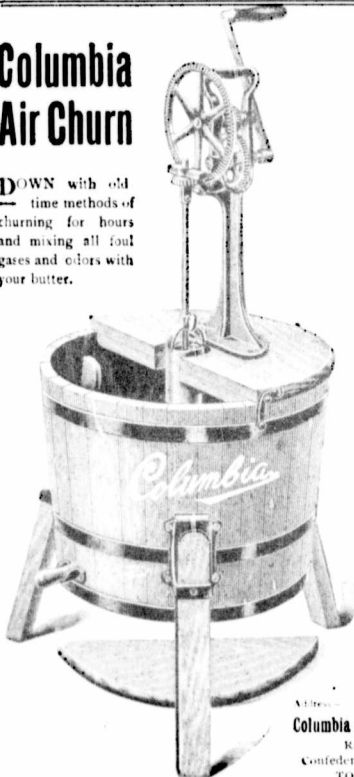
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## Columbia Air Churn

DOWN with old time methods of churning for hours and mixing all foul gases and odors with your butter.



It is the only churn on the market that will remove all taint and cowy odors. The "Columbia" will churn at a lower temperature than any churn on earth.

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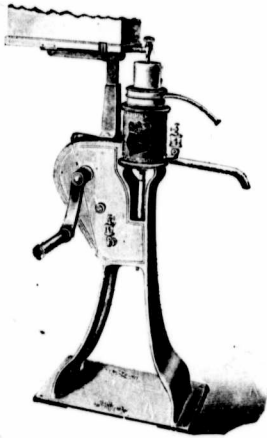
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 PROVE THE SUPERIORITY OF THE

# U. S. CREAM SEPARATOR

IN THEORY, some of the reasons are as follows:



## FRAME

One solid piece with broad base which gives the machine great stability. Not being in two pieces, has no screws or bolts to wear loose and rattle and cause the machine to be unsteady.

## GEARS

The gears are entirely enclosed within the frame, thus keeping them free from dust and dirt that would otherwise get into them and cause friction and wear, and removes all danger of anything getting into them and breaking them, or of the operator or anyone else getting caught in them and injured. The lower gear runs in oil, which increases the ease of operation as well as the life of the machine.

## BOWL

The bowl has only two parts inside, but they are so arranged as to divide the bowl into three compartments, each of which is a separator in itself, making it practically three separators in one, a feature possessed by no other make, and to which is due its remarkable clean separation.

The few parts also mean that much time and labor is saved in cleaning, and that it is much less liable to get out of balance and need repairing than those with numerous and complicated parts inside.

IN PRACTICE, it is daily proving the correctness of our theory that it is the

**Cleanest Skimming, Most Substantial, Safest  
 and Most Durable Separator Made**

as testified to by pleased users all over the country. Read what some of them say:

### By All Means Buy the U. S. It Saves All the Cream

WAYS MILL, P. Q., April 26, 1901.

It gives me much pleasure to bear testimony to the merits of the Improved U. S. Separator. I am an inventor and machinist of nearly forty years' experience, and to me the more simple a machine is and does the required work, the more perfect it is, and in that respect I do not see how one could get a more perfect machine than the Improved U. S. Separator. I can see nothing to get out of order until the machine is worn out, which will take a good many years if the machine is kept properly oiled. This is the third season that mine has been run and all the expense that has been laid out on it has been for oil.

It is easy and quick to wash, taking only from 7 to 8 minutes to wash and wipe dry. If properly flushed after skimming, no cream will be left in bowl.

The machine is easy to run and skims clean. Have made several tests of the skim-milk with the Babcock test, and only a trace of butter fat found—not enough to measure.

Before putting in the U. S. I had been using shallow pans. With the U. S. Separator I made a pound of butter more a week per cow than by setting the milk in pans.

My advice to all those who have cows, and have use for skim-milk and cream is to put in a separator, and by all means put in the Improved U. S. Separator, and they will make no mistake, as it saves all the cream, and is always in working order.

C. C. COLEMAN.

### The U. S. the Perfection of Cream Separators

MIDDLEBURY, Vt., CAN., April 17, 1901.

The No. 7 Improved U. S. Separator I purchased is giving perfect satisfaction. As a cream separator I consider it as near perfection as anything can be, in fact there is no butter fat left in the skim-milk. One great advantage it has over several other makes of separators is the few parts inside the bowl, and the ease with which it can be cleaned. I find that it will skim fully as much as claimed for it. It is a machine made to last, being very strongly and simply made, all running parts being enclosed, which not only protects it from dust and dirt, but renders it impossible for any accident to happen, such as getting wound on the shaft or caught in the gearing. It is also light running, which is a great consideration in a cream separator.

H. O. AVEARST,  
 Breeder of Shorthorn Cattle.

### U. S. Used 8 Years without Repairs

WALES, ONT., March 22, 1901.

The Improved U. S. Separator is a wonderful machine. Have run the one I have every day for eight years, and have had no repairs until now. One of my neighbors purchased a DeLaval a year after I bought mine, and has not run one-half as much milk as I have, and they have paid out \$25.00 for repairs.

J. R. MANNING.

### Preferred the U. S. Because it was Better

CLINTON, ONT., June 5, 1901.

I have been using a No. 6 U. S. Separator for three weeks, and am well pleased with it so far. I believe it to be a very close skimmer, and it appears to be very durable. We had another machine on trial, but preferred the U. S.

ROBERT GIBBINGS.

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