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...LEADING TOPICS FOR THE WEEK...

Our British Letter. Important Cold Storage Scheme. Special British Correspondence. The Export Trade Demands a Regular Supply. The Dingley Tariff too Low for the American Sheep Breeder. Beet Sugar. Canada's Farmers D. M. MacPherson, M.P.P., Lancaster, Ont. Intensive Farming. Manitoba Crops. Annual Meeting of the Guernsey Cattle Club. Milk Test at Brantford. Market Review and Forecast, Etc.

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Improved Yorkshire Swine.
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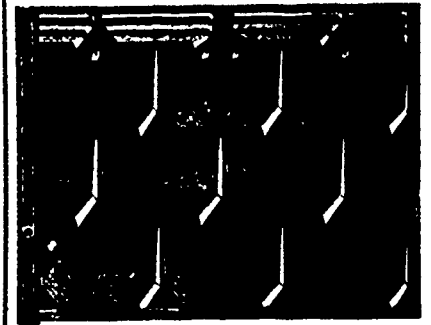
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LACHINE RAPIDS
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Lincoln Sheep of all ages.

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Simmons & Quirie

Shorthorns and Berkshires.

The herd is headed by the imported bull, Blue Ribbon 17095 (63706). He by Royal James (54992) dam, Rosleritz, Vol. 35, p. 258, E.H.B., by Gravesend (92460). Among the females are representatives of the Strathallans, Minas, Golden Drops, Mysies, Elviras—all pure Scotch breeding, except the Elviras, which are Scotch crosses.

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Farm 7 miles from Ilderton Station, G.T.R. Stock of all kinds for sale. Apply to

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JAMES QUIRIE, Delaware, Ont.**

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**SIX BULLS
FOR SALE,**
fit for service, at reasonable prices. Write for particulars.

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No more bulls for sale at present.
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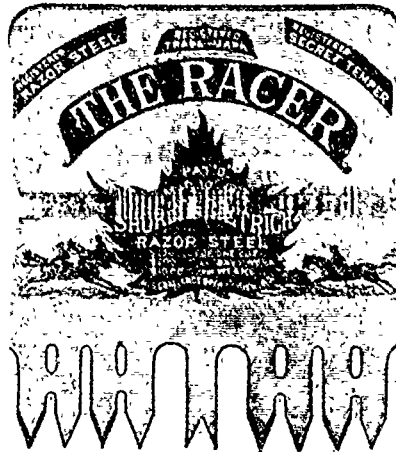
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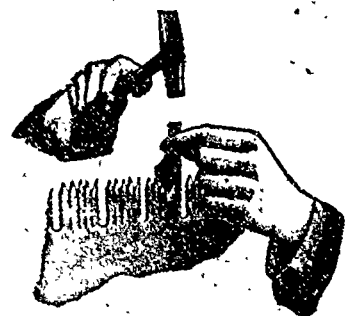
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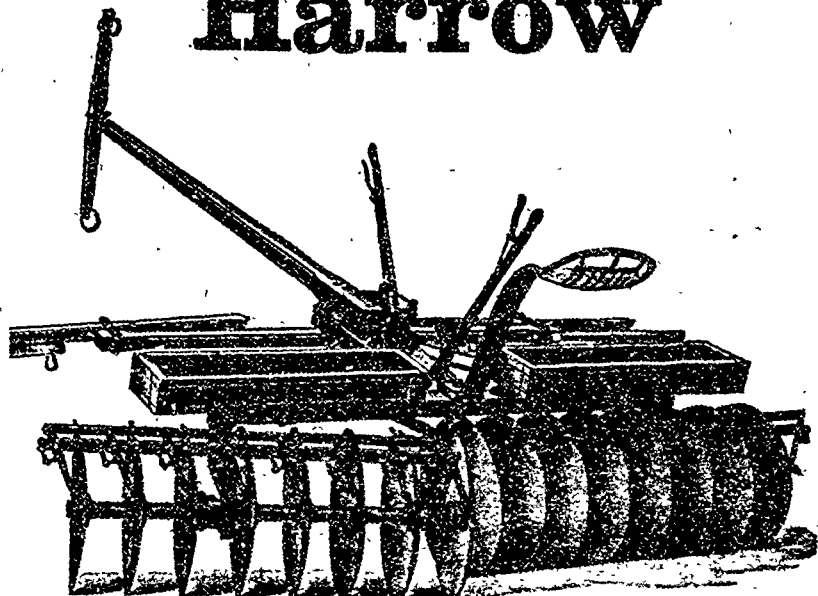
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FARMING

VOL. XV.

DECEMBER 28TH, 1897.

No. 17.

FARMING

AN ILLUSTRATED WEEKLY JOURNAL DEVOTED TO FARMING AND THE FARMER'S INTERESTS

Published every Tuesday by

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A Happy New Year.

Readers of FARMING, we wish you a Happy New Year. May all your undertakings during 1898 be successful, may joy and gladness be your portion; may a large share of this world's good things come into your storehouses, and may the incoming year be one that you can look back upon without the faintest tinge of regret.

Renew! Renew!

We would again remind you that this is the time for renewing subscriptions. When making your selection of good agricultural literature for 1898 do not forget FARMING. If you have been taking it during 1897 you cannot afford to be without it during 1898, as FARMING will be better than ever. If you have not been a subscriber do not delay but remit at once, and have your paper start with the beginning of the year. Remember that our market report each week is alone worth more than the subscription price of \$1.00. Look up the address label on this issue. If your subscription is due remit at once, or better, get *two new subscribers* and get your own subscription extended for one year free. Look up our premium list.

Our Clubbing List.

We are pleased indeed to be able to offer the following low clubbing rates for FARMING with other publications:

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Canadian Magazine	\$2.50	\$2.50
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These are all particularly low offers, but we would make special mention of our offer to send FARMING and the *Canadian Magazine* for one year for the low price of two dollars and fifty cents. This is Canada's greatest magazine, and we should like to see it in the home of every farmer. It contains what is best in Canadian literature and thought, and no young Canadian should be without it. Try it for one year.

We have also made special arrangements with the publishers of the *Canadian Magazine* to offer that splendid production for *four new subscribers* for FARMING, at \$1 per annum. This offer is made

specially for the readers of FARMING. *Four new subscribers* can be got very easily if you only make the effort.

Special British Correspondence.

We are pleased to be able to announce that we have made special arrangements for a fortnightly letter from Great Britain having special reference to what is transpiring there in regard to closer commercial relations between Canada and the Mother Country, more particularly as it affects agricultural products. These letters will be continued during the winter months, and longer if we feel that they are of sufficient importance to our readers. Our correspondent is in close relation with the movement in England affecting the interests of the colonies, and we may look for valuable information and useful hints along the line of developing the markets there for Canadian produce. In another column is given the first letter in this connection, which will, no doubt, be read with interest.

Intensive Farming.

What is called intensive farming is very little known in Canada, or if it is known is very little practised. The system practised by the average Canadian farmer cannot be said to be intensive in any sense. In fact it is the very opposite, and is largely a kind of superficial system that neither conserves the fertility in the soil, nor enables the farmer to get all he should out of his farm. What is known as intensive farming is a system by which the farmer can by thorough cultivation, by regular rotation of crops and by feeding more stock on the farm, not only increase the fertility of the land, but make it more productive. To do this successfully the farmer must be a student, and must thoroughly understand the nature of the soil he has to deal with, and must also bring active business principles into his farming operations. The English system of farming may be taken as a good sample of intensive farming. In England thorough cultivation is practised and every effort made to conserve the fertility of the soil.

In this connection our readers will be interested in the account of his farming operations given by Mr. D. M. MacPherson, M.P.P., in this issue. Mr. MacPherson's system is a good example of intensive farming. Even if we discount his figures by one-half the results are sufficiently good to show that his methods are worthy of careful consideration by every intelligent farmer. But there is no reason for discounting his statements at all. Mr. MacPherson is a successful business man and intensely practical, and has given particular attention to having the data regarding his farming operations as accurate as possible. One proof that the figures have not been misrepresented in any way is that he gives a detailed statement of every branch of his farming operations. For instance he might have reserved that portion referring to his winter dairying operations as it did not show a cash profit. Moreover, Mr. MacPherson is prepared to verify every statement he has made, and extends an invitation to anyone to visit his farm at Lancaster, Ont., and find out for himself if what he states is not correct. Several leading and practical farmers, taking advantage of his invitation visited Mr. MacPherson's farm last summer and everyone returned convinced that what he is doing with his 125 acre farm is simply marvellous.

We have not put in this defence regarding the accuracy of Mr. MacPherson's statements because we wished to ward off criticism, but because we wished to show how important his statements are

to the Canadian farmer. Mr. MacPherson is quite willing that his statements should be criticized, and, in fact, fully expects it. The columns of FARMING will be open for all criticisms of this kind.

But, coming to the statements themselves, there are many valuable lessons to be learned from Mr. MacPherson's operations aside from the actual results obtained. The immense value of applying business principles to farming operations is seen all the way through. His plan of feeding all the crops grown on the farm is along the right line. The system by which he increases the fertility of the land, is of the utmost importance. So important does Mr. MacPherson consider this feature, that he believes his winter dairying operations were profitable, even if the cash balance were on the wrong side, because they added to the fertility of the land. It may be well to point out that in estimating the fertility left on the farm, by buying and feeding certain kinds of feed, Mr. MacPherson based his calculations upon the actual value as fertilizers, given to nitrogen, phosphoric acid and potash in the various foods. This is a fair way of calculating, and gives a correct estimate of the value of the various feeds as a fertilizer when fed on the farm. For instance, as Mr. MacPherson points out, germ meal is much more valuable as a fertilizer than corn meal, because it contains more valuable fertilizing ingredients.

It should, therefore, be the aim of every farmer, in buying feed for stock, not only to get feed that will give a large amount of animal gain, but in addition will give the largest amount of value as a fertilizer. Mr. MacPherson lays particular stress upon this fact, and in all his farming operations makes it one of his first considerations. He believes, that for every \$1.00 worth of fertilizing value added to the land, he can get \$1.00 worth of increased crop the next year.

One strong feature of Mr. MacPherson's farming operations is the immense faith he has in the business. What farmer on 125 acres of land would think of spending \$2,180.50 in hard cash, in one year, in purchasing feed, or would spend even \$460.00 on his hogs alone? But, as Mr. MacPherson's statements will show, he spent these sums and realized handsome profits on the investments. It all comes from putting business methods into the farm, knowing definitely, what one is doing, and being able to see clearly what the outcome will be.

Important Cold Storage Scheme.

A big cold storage scheme is proposed, probably for Toronto, which, if carried out, will be of vital importance to the whole province. Mr. J. M. Smart, partner and foreign superintendent of the great American cold storage firm of Perkins & Weber, Chicago, was in Toronto last week spying out the ground. His proposal is to erect a central cold storage depot at a cost of from \$200,000 to \$400,000, for the exportation of Canadian perishable food products to Great Britain. At central points throughout the province it is proposed to establish branch stations, where produce will be collected to be kept in cold storage at the central depot, whence it will be sent to the old country. The scheme also comprehends a plan of refrigerator cars, which the Chicago firm will build themselves, should they decide to operate their proposed system. A central depot at Montreal for Quebec is also contemplated.

Such a scheme, if carried out as described, and if not too expensive for the shipper, would prove a great "boon" to the Canadian trade in perishable

food products with Great Britain, and it is sincerely hoped that nothing will occur to prevent its completion. All that the firm asks is an assurance that Ontario is rich enough in the products they propose handling to warrant them in undertaking the project. Of course, the city where the central depot is located may be asked to lend some assistance to the scheme, though no request of that kind has yet been made. Mr. Smart interviewed a number of leading men in regard to his proposal, and received every assurance that Ontario is a splendid field for his operations.

We do not think there can be any doubt about it. Ontario seems to be just ripe for a scheme of this kind, and we are confident that her resources are almost unlimited as regards the production of perishable food products. Development along these lines has been hampered in the past for the want of some such scheme as Mr. Smart proposes to operate. The possibilities for development are simply immense. Our export butter trade is still in its infancy, and is capable of almost infinite enlargement: we are just beginning to realize the importance of our export trade in tender fruits, the trade in chilled beef has only been thought of, and hardly a beginning made in developing our dressed meat trade. In fact, with the one exception of cheese, every branch of our export trade in perishable food products has only made a beginning, and is capable of being increased one hundred fold.

What surprises us, as we look into the question, is that some of our enterprising Canadians who have the interests of Canada at heart, had not proposed a similar scheme long ago, and not left it to come from a foreigner. However, it does not matter much who controls the scheme, so long as every care is taken by the government or municipality, when granting the franchise, that the rights of the producer and shipper are fully protected. It would be an injury, instead of a blessing, if the scheme developed into a kind of monopoly.

Our British Letter.

(From Our Special Correspondent.)

LONDON, Eng., Dec. 15th, 1897

I was glad to see in a recent issue of FARMING that you pointed out the unwarrantable allegation made by the States Secretary for Agriculture when speaking of Canadian butter indeed of butter from anywhere except from the States and Denmark. The allegation, I am pleased to say, was read by those on this side of the Atlantic as soon as it appeared, and was estimated at its proper worth. We fully recognize the efforts the press, the Government, and the farmers of Canada are making to supply the industrial public of Great Britain with dairy and other produce of tip-top quality; and whilst that is so, you have no reason to fear the aspersions of neighboring competitors. What you must do, in my opinion, is to let our people—whether wholesale dealers, retailers, or consumers—know that what you send is "Canadian." They will then remember the term, and will associate with it "excellence."

Mr. Chamberlain, the Colonial Secretary, is still "up to his eyes," as the saying goes, in his efforts to improve the commercial and other relations of the Colonies with this country, and I am able to say that he warmly recognizes all that is being done in the Dominion with that end in view. When Professor Robertson was over here he met, as you must all be aware by this time, with a very happy reception wherever he went, and I am able to supplement this by the statement that not only the public at large, but even the agricultural press of Great Britain (which latter, at any rate, might be supposed to have a bias all in favor of our own farmers), wish him and the Government every success in their efforts to add greater prosperity to the Dominion farmer. "It is," as Addison says, "not in mortals to command success," but you are on the right track for it, and deserve it.

The great annual Smithfield Fat Stock Show, held in London, in December, is just over, and, as such shows go, was a success. There are, how-

ever, many who ask whether the game is worth the candle. What happens here is much the same as what happens at fat stock shows all the world over. We have a large number of cattle, sheep, and pigs brought together, mostly purebred, and exhibiting such an enormous quantity of fat that, when killed and placed in the butchers' shops, the fat on them is inches thick, and quite useless to purchasers. It seems to me, and to many others, that the object of a fat stock show should be to produce specimens of various breeds which shall possess a fair share of both lean and fat (nicely marbled as far as possible), and the finest and smallest amount of bone; to feed for so much fat as one now sees is absurd, for not only are the animals largely useless from a consumer's point of view, but they are unprofitable to the farmer, and, as a matter of fact, are produced mainly by the man who, apparently has an over-abundance of capital for mere farming work. "Gentleman" farming can be defended of course, but in England, as elsewhere, we want more "farmer's" farming.

I have said that the animals at Smithfield, etc., are "mostly" purebred. Mostly, but not entirely, and it is a curious and interesting fact, that out of the record number of cattle present, 364 head, the champion beast in the show was a cross between a blue-gray Galloway and a Shorthorn. The same animal took the champion at the two other largest fat stock shows a week and a fortnight previously. This bullock, which is between two and a-half and three years old, was exhibited by Mr. John Wortley, of Frettenham, Norwich, England, and was bred by Mr. Parkin Moore. In addition to the 364 head of cattle on exhibition, there were 199 pens of sheep, 82 of pigs, and a large entry of 626 lots in the table-poultry section, the birds being in a dead, not live state.

The Export Trade Demands a Regular Supply.

Of late considerable attention has been given both in the press and at public meetings to the development of our export trade in perishable food products. In extending this important trade three essential requisites must not be lost sight of. The quality of the goods must be of the very finest that can be produced; the style and finish must be perfect, and of such a character as will tempt the palate of the English consumer, and last of all, a regular supply must be kept up if we wish to hold the market when it is secured.

The Canadian producer seems to realize the importance of the first two of these requisites, but we are not quite so sure that he fully realizes the full significance of the last one in developing our trade with Great Britain. A fine quality of goods, with a perfect finish, will not suffice, unless we are prepared to give a regular supply. If he cannot be certain of a regular supply, John Bull will be loth to leave his old customers, and transfer his trade to us, no matter how good the quality is. An occasional shipment of fresh creamery butter, or dressed beef, will never prove effective in building up Canadian trade in these commodities. Whether it be butter, cheese, fruit, or any other food product, a regular supply must be sent forward.

Those countries which have succeeded in gaining a foothold in the English produce market give special attention to this feature of the trade. The Dane, who seems to have a monopoly of the butter trade, never allows his English customers to run out of Danish butter. Though the Copenhagen Committee may manipulate matters a little, sometimes in order to raise the price, they see to it that their regular customers are supplied. Even the Americans, who practically control the London dressed meat trade, and who are adepts at cornering supplies, never fail to keep the trade supplied with a sufficient amount at least to hold their customers.

When the market for Canadian butter, dressed beef, fruits, etc., is established the producer must be willing to let his produce go at a price that will admit of its being sent forward at a profit. It will never do to send forward produce for a

month or two when the price is good and drop off for a while because the cable has gone back a shilling or two. The English consumer must get his supply from somewhere, and if during a time when prices are not so good our supply is withdrawn, he will look elsewhere and perhaps find another source which will suit him just as well. The producer, therefore, should make arrangements to have his goods going forward regularly. If this is done, and a good trade once established, prices will not vary so much as when the supply is irregular. The irregular supply has to take the chances of the market.

Manitoba Crops.

The final crop bulletin of the Manitoba Department of Agriculture has been issued. It contains a review of the prevailing conditions of the agricultural industry of Manitoba and interesting statistics concerning grain, butter and cheese production and live stock trade during the year. The information given shows that the province is making rapid advancement.

The yield of grain crops of all kinds has not quite come up to the estimated yield as reported in the August bulletin. The following is a brief summary of the yields of the various crops:

	Area of crop in acres.	Average yield in bush.	Total yield in bush.
Wheat	1,290,882	14.14	18,261,950
Oats	408,141	22.7	10,629,513
Barley	153,266	20.77	3,183,602
Flax	247,836
Rye	48,344
Peas	33,380
Potatoes	13,576	149	2,033,298
Roots	6,130	199	1,220,070

The number of beef cattle exported from the province this year is estimated at 15,000. The number of stockers sent to the United States is estimated at 16,500. The total export of cattle 31,500 head. The number of hogs shipped out of the province, dressed or alive, is estimated at 12,500, and the number slaughtered in the country is placed at 25,000, total 37,500. The farmers raised and disposed of 47,500 turkeys, 20,000 geese and ducks, and 184,055 chickens. It is now estimated that there are in the province 100,274 horses, 221,775 cattle, 36,680 sheep, and 74,944 pigs.

Dairy products during the year show a great improvement; 987,179 lbs. of butter were made in the creameries during the year, which at 18c. amounts to \$177,692.22. It is estimated that 1,410,285 lbs. of dairy butter were made, and at 13³/₈c. a pound, it is estimated to be worth \$188,625.60. 987,007 lbs. of cheese were made in the factories, which at 8³/₈c. per pound amounts to \$83,895.50. The total value of dairy products is \$450,213.40

The Dingley Tariff Too Low for the American Sheep Breeder.

Notwithstanding the Dingley tariff large numbers of Canadian lambs continue to reach American markets. So much so is this the case that American sheep raisers are beginning to complain and to agitate for still higher protection. Under the Dingley Tariff Act of July 24, 1897, the duties on sheep one year old and over are one dollar and fifty cents per head, and less than one year old seventy-five cents per head. These figures are largely prohibitive, and only the very best quality of Canadian lambs can be sent over at a profit. Prices, however, have been comparatively high this fall, and our sheep raisers have sent over large numbers, and we believe with considerable profit to themselves.

This competition is beginning to be felt by the American sheep farmers. Judge William Lawrence, President of the National Wool Growers' Association, writing on this subject in the monthly Bulletin of the association for December says: "All intelligent men will agree that the farmers of this country (United States) can supply all the cattle, swine, horses, mules, sheep and goats

needed for consumption therein. I find in the *Buffalo Daily Mercantile Review*, November 17, 1897, the following :

The fresh receipts of sale Canada lambs for the market today were seven cars; five cars came in for slaughterers direct, and eight cars of bonded lambs consigned to Hathaway, were also among the arrivals to day.

"This is only a specimen of daily transactions in one city. The imports from Canada to New York and other cities are immense."

The writer then points out that the Canadian farmer along the St. Lawrence river and the lakes has a great advantage over the farmer of the Western States. He has cheaper freights, shorter distances to the large American cities, and cheaper labor, pasturage and grain. We doubt very much the correctness of these statements. It is conceded that through freight rates from the west are relatively much less per mile than in the east. In many instances there are strong grounds for complaints against railways for favoritism in this regard. As to labor, pasture and grain being so much cheaper in the eastern sections of Canada than in the Western States we are skeptical. On the western ranges sheep or any other stock can be raised at nearly half the cost that they can be raised on eastern Canadian farms.

However, it does not matter very much what the conditions here are as compared with those in the Western States, Canadian sheep breeders are not likely to get any advantage in the United States markets if the American sheepmen can help it, as the following quotation from Mr. Lawrence's article will show

"Canada is supplied with manufactures from England and is entitled to no favor from our legislation." Mr. Lawrence's reasoning all through does not speak much for the skill and thrift of the western farmer if he can be beaten on his own market by the Canadian farmer who has to pay a high duty. Surely with the facilities the former has for grazing sheep at the lowest possible cost, he need not fear any competition that may come from the Canadian farmer in his own markets.

It is not likely that the increased demand for protection from the friends of the American sheep breeder will amount to anything. From seventy-five cents to one dollar and fifty cents per head for sheep is a pretty large sum for the American consumer to pay to the sheep raiser so as to enable him to do business at a profit, and he is not likely to consent to any increase in this regard.

Beet Sugar.

The beet sugar craze seems to have taken New York State by storm. A year ago the growing of sugar beets was an untried experiment in the Empire State. No beet sugar had been made, previous to that time, east of Nebraska. A beginning was made last year, and a sugar-beet factory erected at Rome. Beets were grown by the farmers, and 4,000 tons of them converted into sugar.

The results of this experiment have been satisfactory on the whole, with the result that the farmers have become thoroughly interested in the business, and meetings to consider the establishment of factories are being held in nearly every large centre in the State. Capitalists are considering a plan to erect a plant in Buffalo with a capacity for manufacturing 300 tons of sugar beets per day. In other centres similar plans are projected, and the growing of sugar beets and the making of beet sugar is likely to become one of the important industries of New York State.

One serious difficulty experienced in the west, and in some European countries where the beet-sugar industry has been carried on, is to get the farmers to grow a sufficient quantity of beets to keep a factory supplied. There should, however, be no difficulty about it if the growing of the beets can be made profitable. Sugar beets, like any other root crop, require considerable attention, and, if a large area is under cultivation, a large amount of manual labor is necessary in order to keep the ground clean and in such a con-

dition as will permit of the very best quality of roots being produced. Consequently, many farmers do not care to undertake a line of work that requires so much labor. We are of the opinion, however, that this objection will not have the same force that it had several years ago, when beet sugar was first talked of. More intensive methods of farming are being adopted in the older agricultural districts, and, whether the farmers grow sugar beets or not, they will have to adopt better methods of cultivation, and carry on a system of farming that will tend to increase the fertility of the soil. Every farmer knows that the cultivation of a root crop tends to improve the nature of the soil. So it is claimed that the growing of sugar beets on a large scale will improve many of the impoverished farms. The beet pulp is valuable as a stock food mixed with grains. Some western beet-root sugar factories have established feeding stables in connection with their plant, and are turning what was considered a waste product into a valuable bye product.

The requirements for a beet sugar factory are said to be plenty of beets, containing 12 per cent. sugar, and 80 per cent. purity; plenty of pure water; limestone with a high percentage of carbonate of lime and little silica; cheap fuel; good facilities for transportation; plenty of room and plenty of capital. The requisites for a sugar beet crop are said to be rich land; proper seed; plenty of work; persistence, patience, energy, intelligence. With those given there is no reason why the business cannot be made a success.

Some attention is being given just now to developing the beet-sugar industry in Ontario. We know of several meetings that have been held in a quiet way recently, to discuss the scheme. The persons interested in this work, seem to be confident of being able to establish the business here. One thing is certain, that if the conditions are favorable for growing a good quality of beets in New York State, there is no reason why they cannot be successfully grown in Ontario. The soil on Ontario farms is just as good, our farmers are just as capable of understanding the requirements necessary for the successful growing of sugar beets, and if the industry can be made a profitable undertaking, both for the producer and manufacturer, the sooner the business is established in Ontario the better. It is this item of profit, however, that is the chief point to be considered. Can the industry, if established here, compete successfully with the bonused sugar from Germany and other countries? The consumption of beet sugar is increasing every year, and in a comparatively short time it is likely to replace the cane sugar altogether. Canadians consume a large amount of sugar every year, and if we do not have to pay too dear for it, why is it not possible to produce the sugar we consume ourselves?

Now is the time to make application for a three pound sample package of a leading, new variety, of seed grain that has been successful on the Dominion Experimental Farms. These samples are sent out so that farmers may test them under ordinary farm conditions in all parts of the country. Samples of oats, wheat, barley, field pease, corn, and potatoes, only will be sent out, and one sample of one variety only will be sent to each applicant. Orders are filled in rotation, therefore make application early to Dr. Wm. Saunders, Central Experimental Farm, Ottawa.

CANADA'S FARMERS.

D. M. MacPherson, M.P.P., Lancaster, Ont.

No name is perhaps better known to the dairymen of Canada than that of D. M. MacPherson. For years he has been a leading spirit at dairy gatherings, and has, perhaps, by his stirring addresses and practical talks on dairy matters, done more than any other person in the trade to encourage the production of a better product and the producing

of that product at a reduced cost. For a decade, at least, he has been known as the "cheese king" of Canada, and the Allan Grove combination of sixty cheese factories has acquired more than a mere Canadian reputation for the quality of its cheese. Besides being the largest cheese manufacturer on the continent, Mr. MacPherson has of late years attracted special attention because of the extraordinary results of his farming operations as shown by his letter in this issue.

From the success which he has had as a farmer and as a dairyman many may be of the opinion that Mr. MacPherson has had special advantages in his early training that do not come to the ordinary farmer. But such has not been the case. His early education and training are almost identical with that of the large majority of young men brought up on the farm. He was born on the farm from which he is now producing such marvellous results, in 1847, and worked with his father on the farm till he was twenty-one, when his father died. His early education was secured at the common public school, and, like most farmers' sons, he went to school during the winter and worked on the farm during the summer. But, being an ambitious youth, he applied himself with diligence to acquiring knowledge from whatever source was open to him, which accounts for the fund of valuable information he possesses to-day on every phase of farm work and practice.

After his father's death in 1869 Mr. MacPherson, then only twenty-one years of age, worked the farm for one year, and at the end of that time his expenses were greater than the receipts. But being very ambitious and possessed of indomitable courage, he resolved to make a start in another line of work. The making of cheese was just beginning to attract attention at that time, and Mr. MacPherson, having studied the question thoroughly, and seeing the opportunity there was in it for success, and also the necessity of his doing something to remedy his finances, resolved to try his success in this line. He accordingly bought a vat and went to work to make cheese, and, strange to say, without having spent any time in learning the business. This was in 1870, and it is no surprise that the venture did not prove successful the first year, considering that all knowledge of the business had to be gained as he went along. But with his characteristic energy and perseverance, and feeling that the experience he had gained would be helpful another year, Mr. MacPherson resolved to try it again. During the second year two neighbors joined him, and the venture was more successful. The third year he purchased a larger vat and took in more of his neighbors. Beginning now to see the possibilities for developing the cheese trade, he branched out still farther, and operated four factories during the fourth year. From this time his business began to grow very rapidly, and to become more profitable. By studying the needs of the trade and the conditions affecting it, and by investing all his profits in the business, Mr. MacPherson, at the end of ten years after purchasing his first cheese vat, owned and controlled the sixty cheese factories which he now operates.

Mr. MacPherson was one of the first factorymen to adopt the practice of hauling milk only once a day. Early in his career as a factory manager he adopted the practice of selling his cheese regularly every week, and of paying dividends monthly. This in a measure accounts for his success. Mr. MacPherson's method of making cheese by a definite time limit as regards the setting, cooking, dipping, grinding, salting, and hooping of the curd, has attracted considerable attention among cheesemakers. By this scheme he was able to operate many of his smaller factories with men who had only worked a short time at the business.

During the time when Mr. MacPherson was engaged in developing his dairy business, the 125-acre farm, though rented, was still in his possession. Having had his wits sharpened by his business training, and having made a thorough study of the soil and the conditions necessary to increase its fertility and to produce more plant food, Mr. MacPherson resolved to again undertake the management of his farm. He took over his farm from the tenant eight years ago, when it was in poor condition, and proceeded to carry out his scheme of growing rough feed and carrying on a system of stock farming, his aim being to restore the lost fertility in the land and bring it up to an advanced stage of fertility. How successful he has been in this undertaking will be seen in the splendid results from this year's operations given in this issue. The first year's crop only returned \$1,000, and as he had purchased heavily of extra feed, in order to increase the fertility of the soil as rapidly as possible, the outlay was greater than the receipts. He persevered however, and continued to purchase largely of extra feed for his stock and add to the fertility of the soil, with the result that for the year ending December 1st, 1897, his 125 acres produced over \$7,000.

Mr. MacPherson is a thorough believer in intensive farming. To succeed, the farmer must understand the condition of the soil he is dealing with, and endeavor to increase its fertility each year. A regular system of crop rotation must be followed, and in Ontario at least he recommends a system of stock farming. The farmer, to succeed, must put more business methods into his work, and work after some definite plan. To this end Mr. MacPherson believes that the Government should establish a model farm in every county, and run it entirely from the standpoint of profit. Let this farm be run on business principles, and show the farmers in every county not merely how to cultivate the soil and produce a crop, but how to cultivate the soil and produce a crop at a profit. Mr. MacPherson does not believe in running farms for fun, but in operating them for the purpose of making money. That should be the first and chief aim of all agricultural teaching.

BUSINESS METHODS IN FARMING.

An Account of One Year's Work.

By D. M. MacPherson, Lancaster, Ont.

In accordance with your wish and my promise, I send you a copy of the financial statement of my farm account for the past year.

I might say by way of introduction that a year ago I published a statement of my summer crop only, and gave a detailed account of its amount and value; but I did not give all the cash debits and credits for the whole year. I now give a complete statement of my accounts for a whole year, dating from November 1st, 1896, to November 1st, 1897.

I first give an inventory of the crop value raised on my 125 acres of arable land for the summer of 1897 on the same basis as that given for 1896. The following are the acreages and values of each crop. The hay and corn crops are estimated at market values, and the milk returns are the actual figures taken from the cheese factory books—the same as all other patrons:—

36 acres silage corn 1,000 tons at \$3 per ton.....\$3000 00
28 acres hay, 75 tons, at \$7 525 00
11 acres oats, cut green, for fodder, 30 tons, at \$7 210 00

Total amount of coarse feed 1,105 tons..... \$3735 00
47 acres cow pasture produced 331,973 lbs. milk \$2379 79
3 acres pig pasture produced 23,000 lbs. pork..... 1250 70
Veal..... 212 00

Total amount of cash products..... \$3842 50

Total crop produced on 125 acres in the summer of 1897..... \$7577 59
Less amount of feed purchased for production of milk and pork..... 1000 00

Net crop value..... \$6577 59

ENTIRE FARM ACCOUNTS COVERING ONE FULL YEAR, NOV. 1ST, 1896, TO NOV. 1ST, 1897.

Cr.
By winter milk (Nov. 1st to May 1st), 65 cows, 112,403 lbs..... \$ 870 71
By summer milk (May 1st to Nov. 1st), 80 cows, 331,973 lbs..... 2379 79
By beef cattle sold (62 head)..... 3082 00
By pork sold, 23,000 lbs. 1265 70
By veal sold..... 212 50

Dr.
To labor for the year (including foreman's salary) \$1872 50
To general expenses (taxes, insurance, etc.)..... 398 03
To general repairs..... 194 53
To feed purchased for milk, beef, and pork production..... 2182 50
To cattle purchased for beef production..... 1450 60
To pigs purchased for pork production..... 117 02
To depreciation of capital..... 150 00

Balance..... \$1445 52
Capital invested..... \$13000 00

In attempting to analyze the different accounts to find out the actual cost of each product in pounds or tons, I have tried to get at the actual figures in every case. There are some unproductive conditions on every farm at certain times, such as idle horses, brood sows, and dry cows, that make it very difficult to accurately account for all the outlay for each product.

Pork.
Total amount of pork produced on three acres 23,000 lbs.
Value..... \$1265 70
Cost of—
Labor..... \$100 00
Purchased feed..... 460 00
Produced feed (pasture)..... 30 00
Incidental expenses..... 20 00

Profits on three acres pig pasture..... \$655 70
Profit on one acre of pig pasture..... 218 00
Cost per Pound of Pork.
Labor per pound..... 43c.
Purchased feed per pound..... 2.00c.
Incidental expenses per pound..... .22c.
Total cost of one pound of pork..... 2.65c.

Manurial value of purchased food added to the land as fertility..... \$500 00
Fertility value added per acre..... 166 66

Beef (62 head)
Amount of increase made by beef cattle..... 15,500 lbs.
Value of increased gain..... \$1631 40
Cost of—
Labor..... \$134 00
Purchased feed..... 500 00
Feed produced on the farm (1 1/2 ton hay, 6 tons corn silage per head)..... 220 00
Incidental expenses..... 124 00

Profits..... \$653 40

Cost of One Pound Increase.
Labor..... 1c.
Purchased feed..... 3 1/2c.
Feed produced on the farm..... 1 1/2c.
Incidental expenses..... 1/2c.
Total cost of one pound increase in live weight..... 6 1/2c.
Value received for one pound increase in live weight..... 11c.
Profit received for one pound increase in live weight..... 4 1/2c.
Manurial value of purchased feed added to the land as fertility..... \$450 00
Fertility value obtained in producing one pound of beef..... 3c.

Winter Milk (65 cows, all strippers).
Cost of—
Labor..... \$260 00
Purchased feed..... 390 00
Feed produced on farm..... 227 00
Incidental expenses..... 65 00

Total cost..... \$942 00
Value of milk produced..... 870 71

Loss..... \$71 29
Amount of milk produced..... 112,403 lbs.
Cost per 100 lbs.—
Labor..... 22c.
Purchased feed..... 33c.
Feed produced on farm..... 20c.
Incidental expenses..... 6c.

Total cost of 100 lbs. of winter milk..... 81.00c.
Value received for 100 lbs. of winter milk..... 7.46c.
Manurial value of purchased feed added to the land as fertility..... \$350 00
Fertility value obtained in producing 100 lbs. of milk..... 31.13c.

Summer Milk (20 cows fresh in the spring).
Amount of milk produced..... 331,973 lbs.
Value (from patrons' books)..... \$2,379 79
Cost of—
Labor..... \$320 00
Purchased feed..... 500 00
Produced feed (pasture)..... 250 00
Incidental expenses..... 80 00

Total expense for milk..... \$1,150 00

Profits on summer milk..... \$1,229 79

Cost of Producing Milk in Summer.
Cost per 100 lbs. of milk—
Labor..... 9c.
Purchased feed..... 15c.
Pasture..... 7 1/2c.
Incidental expenses..... 2 1/2c.
Total cost of 100 lbs. of summer milk..... 34c.
Value received..... 71.70c.
Manurial value of purchased feed added to the land as fertility..... \$400 00

Fertility value obtained in producing 100 lbs. of milk in summer..... 12c.
Actual cost of producing 100 lbs. of milk in summer, less cost of purchased feed..... 20c.

Cost of Milk by the Acre.
Cost of—
Labor per acre..... \$14 00
Purchased feed..... 11 00
Produced feed..... 7 00

Total cost per acre..... \$32 00
Total proceeds per acre..... 50 00
Profit per acre..... 18 00
Total proceeds of milk during the year..... 444,376 lbs.
Average milk produced per cow from an average of 73 cows for one full year..... 6,000 lbs.

Corn for Ensilage.
30 acres produced..... 1,000 tons.
Total cost of production and putting into silo..... \$360 00
Cost per acre for labor..... 10 00
Cost per ton..... 36c.

Grain
11 acres of oats cut green and cured for hay yielded..... 30 tons
Total cost for labor..... \$88 00
Cost per acre..... 8 00
Cost per ton..... 2 93

May.
28 acres of mixed hay produced..... 75 tons
Total cost for labor..... \$140 00
Cost per acre..... 5 00
Cost per ton..... 1 87

In examining the results of the foregoing statements it will be seen that it costs more to produce winter than summer milk, and that no cash profit is left; yet it must not be forgotten that the amount of manurial value added to the fertility of the land by means of the purchased feed is equal to 31 cents per 100 lbs. of milk. It must not be forgotten, also, that my cows are fresh in the spring, and consequently only strippers during the winter, and also dry part of the time. The cash profit from summer milk is greater than that from winter milk, but there is less fertility added to the farm. The production of large quantities of milk in the winter is particularly adapted to enrich and build up worn out land. The production of milk in summer gives the greatest amount of cash profit, while the production of milk in winter gives the greatest amount of fertility profit.

The value of purchased feed depends on three things: its feeding value, its market value, and its value for feeding plants, i.e., its manurial value. The feeding value and plant food value of every food should be closely studied in connection with its market value. As illustrating this point compare cornmeal with germ meal. The feeding value of any food can be very accurately estimated by multiplying the amount of albumoids by three cents, the amount of fats by three cents, and the amount of carbohydrates by one cent.

Germ meal. Corn meal.
Market value per ton..... \$12 00 \$14 00
Feeding value per ton..... 20 00 16 00
Plant food or manurial value per ton..... 12 00 5 50

Thus \$12 spent in germ meal buys a combined feeding value for animal and plant to the amount of \$32, and \$14 spent for corn meal only buys a total feeding value for animal and plant of \$21.50; or, to make the comparison plainer, \$1 spent for germ meal will buy \$2.66 worth of combined feeding value for plants and animals, while the same amount of outlay for corn meal will only purchase a combined value of \$1.52.

A careful consideration of this example shows that a valuable animal food must contain high plant food and animal food values at a low market value. It must also be a suitable food and one that will balance a bulky ration.

Every successful business firm has a sinking fund, to which they need to add a sum every year. The store of fertility in the land I take to be the farmer's sinking fund, and it has always been my aim to increase the store of fertility in my soil. All my feed is purchased and all my work is planned with this end in view. As a consequence, my farm is becoming richer every year instead of poorer, and is giving me a constantly increasing crop every year. It is like a bank account, I am constantly adding to it and it is yielding me an increased amount of interest every year. Every farmer should make a reckoning of the amount of fertility sold off the farm every year and the amount returned.

Fertility Account.
Amounts and character of animal foods purchased—
70 tons bran, fertilizing value \$12 per ton..... \$ 840 00
60 tons shorts, fertilizing value \$9 per ton..... 540 00
60 tons germ meal, fertilizing value \$12 per ton..... 720 00
10 tons grain (oats, peas, and barley) fertilizing value \$10 per ton..... 100 00
Total fertilizing value..... \$2200 00
Total amount sold off the farm in milk, beef, pork, and veal..... 600 00
Balance of fertility added to capital account for future profits..... \$1600 00

Profit and Loss Account.
Dr.
To pork account..... \$ 655 70
To beef account..... 653 40
To summer milk account..... 1,229 79
..... \$2538 89
Cr.
By winter milk account..... \$ 71 29
By general expense account..... 398 03
By general repair account..... 194 53
By depreciation of capital account..... 150 00
By part foreman's salary not included in actual labor account..... 279 52
..... \$1093 37
Balance..... \$1445 52

One dollar spent in actual labor gives a cash return of..... \$2 54 (Average of Ontario about 75c.)
One dollar spent in actual labor gives in aided fertility value..... 1 04 (Average loss on ordinary farm for every day's work is about 71c.)
One dollar in actual labor gives an actual cash profit of..... 90

These figures show that if labor is rightly directed on the farm, hired labor can be used in such a way as to have a good profit.

Metallic Roofing.—With this issue the Metallic Roofing Co., of Toronto, begin another year's contract for advertising in FARMING. Metallic shingles are light in weight, will not crack or drop off, and in many ways are more advantageous than wood.

Spratt's Patent.—Among the many beautiful things being distributed this holiday season none are more attractive than Spratt's Patent Annual Calendar for 1898. The workmanship is excellent and the design is unique, and it is needless to say that the good qualities of this firm's well-known dog cake and poultry food are prominently set forth.

MILK TEST AT BRANTFORD.

Prize.	Name of Cow	Breed.	Owner	Address	Pounds of Milk in 2 Days	Per cent of Butter Fat.	Total Score.
First	Waterloo Daisy	Shorthorn	F. Martindale	York	104.25	4.00	422.35
First	Nellie Gray	Wyrshire, 3 yrs	J. R. Alexander	Brantford	70.10	4.00	276.48
Second	Pauline Hall	"	W. M. & J. C. Smith	Fairfield Plains	69.00	3.90	273.02
Third	Ruby Bell	"	N. Dymont	Clappison's Corners	59.00	4.55	265.88
Fourth	Ruby of Hickory Hill	"	R. S. Brooks	Brantford	65.00	3.75	243.02
First	Gerta's Queen	"	N. Dymont	Clappison's Corners	75.50	3.77	278.45
Second	Belle of Rosmond	"	W. M. & J. C. Smith	Fairfield Plains	60.50	4.00	250.45
Third	Calamity Jane	Holstein, 3 yrs	R. S. Brooks	Brantford	38.00	4.45	165.58
First	Fanny F.	"	A. & G. Rice	Curries	100.50	2.50	335.54
Second	Aaltje Posch	"	Jas. Rettie	Norwich	154.50	2.55	392.48
Third	Edgley Frena	"	"	"	121.00	2.55	301.75
Fourth	Queen De Kol	"	A. & G. Rice	Curries	105.50	1.15	244.62
First	Daisy Texal	"	G. W. Clemons	St. George	57.25	3.10	187.61
Second	Blossom's Baroness	"	"	"	51.75	3.55	191.07
Third	Fancy of Oakdale	Jersey, 1 yrs.	A. & G. Rice	Curries	78.50	3.10	252.92
Fourth	Sapphire	"	"	"	77.25	3.10	249.49
First	Nina of Openshaw	Jersey, 2 yrs.	J. H. Smith & Son	Highfield	115.00	4.70	504.32
Second	Danain	"	"	"	72.50	4.90	291.94
Third	Fancy of Sedgewood	Guernsey, 3 yrs	J. H. Dent	Woodstock	45.75	4.00	179.97
Fourth	Queen of Sunny Springs	"	"	"	64.00	4.25	264.78
First	Phyllis Lassie	"	W. Butler & Son	Bereham Centre	47.50	4.80	181.43
Second	Beauty of Rocton	Grade, 3 yrs.	"	"	30.25	4.80	117.47
Third	Dina	"	W. J. Thompson	Roxton	34.25	4.30	137.73
Fourth	Lady Cleveland	"	"	"	24.50	5.05	100.02
Fifth	Daisy	"	J. H. Dent	Woodstock	102.50	3.20	331.14
First	Sweet Assurance	Grade, 3 yrs.	F. Martindale	York	101.75	3.10	327.07
Second	Johanna	"	J. R. Alexander	Brantford	98.50	3.75	326.18
			H. McDougall	Guelph	91.00	3.40	313.48
			James Rettie	Norwich	71.75	3.70	275.20
					75.50	4.15	310.23
					64.50	3.50	232.04

Sweepstakes for two-year-olds won by Queen De Kol, G. W. Clemons, George.
 Sweepstakes for three-year-olds won by Calamity Jane, A. & G. Rice, Curries.
 Specials offered by Canadian Holstein-Friesian Association. The first prize was open to all breeds, second and third open only to animals registered C. H. F. A. H. B.—1st, Calamity Jane; 2nd, Fanny F., James Rettie, Norwich; 3rd, Aaltje Posch, James Rettie.
 Special prizes, offered by the American Holstein Friesian Association—1st, Calamity Jane; 2nd, Edgley Frena, A. & G. Rice.

ENGLISH MILK TESTS.

That our readers may be able to compare these tests with the tests at the recent dairy show in London, England, we give the following table. The record given is that of the first prize animal in each breed. The Shorthorn won the championship prize:

Breed	Age	Days since calving	Lbs. of milk in 2 days	Average per cent. of butter fat.
Shorthorns	6	27	136.1	3.88
Jerseys	5 1/2	38	97.6	5.89
Guernseys	7	29	97.3	4.63
Red Potts	9 1/2	42	120.6	3.28
Ayrshires	7	23	108.5	4.58
Kerries and Dexters	9	12 1/2	66.2	5.44
Crosses	5 1/2	50	120.6	4.09

CHANGE OF ENVIRONMENT.

Professor Haecker, of the Minnesota Experimental Station, says: "I have never yet purchased a fine, sensitive cow, and removed her away from her former surroundings when she would do good work for the first year. If she was an old plug, and had no fine nervous system in her make-up, she would not care where she was, and would be just as poor a cow the first year as the second."

The exhibitors of cows, in milking tests at the fairs, always find that their cows never give within ten pounds as much milk during the test as they did before they left their own stables. The milk is not as rich in butter fat either. Not knowing this peculiarity of the sensitive nature of a cow, has lost some exhibitors the prize they were working for.

Hoard's Dairyman suggests that when anyone buys a sensitive cow, that he pursue the following course with her: "Let the person who is to milk her make a practice every morning of giving her a good carding, so as

to produce in her a sense of comfort. We have tried this many times on newly purchased cows for the purpose of preventing them shrinking their milk from home-sickness. It causes the cow to feel very kindly towards her milker, and very soon creates in her a feeling that she has gained by the change. It is worth all and more than the little trouble it takes to do the card act."

BUTTER WON'T COME.

It will soon be time for complaints to come in that the cream won't churn. One of three things will generally be found to cause the trouble. Either the temperature of the cream is too low or too high, or it is not ripe enough, or the cows have been milking a long time.

Where the supply of cream is small it should all be kept sweet until sufficient has been gathered for a churning. Then thoroughly mix it, warm to a temperature of about 65 degrees, and keep it at that temperature until it develops sufficient acid. Then churn at a proper temperature. What that proper temperature is depends on the percentage of butter-fat in the cream, and the temperature of the room in which the churning is done. The temperature of the room should be at least as high as the temperature at which the churning is to be done—better a little higher.

If the cream is very rich in butter fat, like separator cream, it can be churned at a temperature as low as 50 degrees; but if it is thin, or poor in butterfat, it should be warmed to a temperature of 60 degrees. If the butter does not come then inside of forty minutes, raise the temperature a degree at a time until the right temperature for churning is reached. The next churning should be warmed to that temperature at once. This should be done at least two hours before churning is begun, to allow the fat globules to become of the same temperature

all through, not the outside only. Because the thermometer shows that the cream is at the right temperature for churning, it does not always follow that it is at the proper temperature. If the cream were very cold and was warmed up quickly, the fluid part of it may be at the temperature indicated by the thermometer, but the fat globules will not be. The fat globules do not warm up as fast as the fluid does, consequently churning will be slow because the fat globules are not at the temperature at which they will unite, and have to be warmed gradually. This undoubtedly affords an explanation as to why butter with good grain can be churned at a temperature of nearly 70 degrees, as some people say they can.

Keep the cream sweet until sufficient has been gathered, ripen properly, then see that the cream is kept at churning temperature for two hours before starting the churn, and you will not say the "butter won't come."

If the cows have been milking a long time, the best remedy is to get in a few fresh milch cows.

SOME NEW FRUITS.

By S. MORTON, Niagara Falls South.

The Dwarf Juneberry.—Which ripens in late strawberry season, is a berry that cooks quite sweet, and is liked by some people. Others do not care for it. As it is very hardy and productive, and succeeds in the colder parts of the province, it ought to be found in farmers' gardens generally. It makes a nice mixture when cooked with currants, as the latter have plenty of acid to spare. The Juneberry, when white with bloom very early in spring, ranks high as an ornamental.

Japan Wineberry.—This will not supersede raspberries, but is a very handsome little fruit, of fair quality. The fruit at first is enclosed in a capsule much like a small moss rose. The whole plant is densely covered with red soft spines, which are very ornamental in winter. The plant otherwise grows much like a drooping raspberry. It readily endures the climate of Southern Ontario. It would be admirable for a rockery or wild shrubbery. It produced a good crop this year. Fruit is like a small red raspberry, but brighter.

Japan Plums.—These are distinct in growth and foliage from other plums, and some of them have come to stay. They start the plum season in July, and continue till November. They endure for a considerable period after picking.

Ogon, a large white plum with a deep suture, ripens in July and drops its fruit very promptly. Its color and earliness may give it some value, but its quality for eating raw is not good.

Later on, Abundance and Burbank ripen immense crops of good fruit in August. This year, where bearing heavily, they got discouraged and dropped much of their foliage. This seems distinct from the leaf blight, which often denudes the European plums. We see Japan plums with full foliage in the same orchards.

In September the Hytankio No. 1 ripens. It is a beautiful, large plum, covered with bright carmine dots and a white bloom. Its quality is quite good, but not equal to the best European plums.

Ripening with Hytankio we have Satsuma, a red brown plum with some white bloom. The plum is large, the stone small, and the flesh of the same color as a blood beet, which is rather startling to those who see it for the first time. Its quality is peculiar. *Prunus Simoni* is also peculiar in the matter of quality.

The skin of Japanese plums has an objectionable taste in most cases. Curculio do not flourish in these plums. Like other plums, they are liable to the fungous plum rot.

A red flesh plum, the *Prunus Pissardi*, seems to be little known. From its liver-colored foliage throughout the season it makes one of the finest ornamental trees, and is most known in that connection. The fruit is pretty good, very early, and rather small. It is ornamental from the start, as it is red when it is green. There is no contradiction here if we consider unripe fruit as green.

Russian Apricots.—This is likely to be a new fruit continuously, as it rarely matures fruit. It grows well and blooms profusely. I did this year read of a Canadian who had a crop of green fruit early in the season. How much of this ripened successfully hath not yet appeared.

ANNUAL MEETING OF THE AMERICAN GUERNSEY CATTLE CLUB.

The nineteenth annual meeting of the American Guernsey Cattle Club was held in New York, December 8th. A very large number of the members were either present or represented. The report of the secretary and treasurer, Wm. H. Caldwell, showed that the season of 1897 had been the most prosperous one in the history of the club. More entries and transfers of stock had been made during the year than in any previous year. The financial statement given showed that after paying all expenses there was left to the credit of the club \$801.97. Seven members have qualified during the year, and up to the present date there have been issued 160 certificates of membership, and 120 names appear upon the list as active members.

The retiring officers were all re-elected, namely: President, James M. Codman, Brookline, Mass.; vice-presidents, Levi P. Morton, Rhinecliff, N.Y.; Hon. Sydney Fisher, Minister of Agriculture, Dominion of Canada; secretary and treasurer, Wm. H. Caldwell, Peterboro', N.H.

Under the head of new business, the question of offering encouragement to breeders to conduct home tests of their animals was quite generally discussed, and it was voted, that it is the sense of the meeting that butter tests should be started, and that the manner of conducting same should be left with the Executive Committee with power to act. It seemed to be the general opinion of the members present that such tests should be made upon the basis of the amount of butter fat produced during the year, and that there should be three prizes offered for records of single animals, and three for records of herds consisting of five animals each.

Attention was called to the exhibit of live stock at the coming Trans-Mississippi Exposition in Omaha, Neb., next fall.

EXTERMINATING RATS.

As the cold weather approaches rats and mice find winter quarters around the barns and outhouses. They eat holes wherever they take a fancy to, and are particularly fond of finding their way to where there is a supply of grain. If unmolested they will eat and destroy a lot of grain before spring.

Give them a good ridding out at once. Keep a good cat in the barn. If possible obtain the services of a well-trained ferret and a good rat-dog. A great many can be killed off in this way, and after such a hunt they seldom return.

Carbon bisulphide is another good agent for cleaning out rats and mice. Put some of it in their holes in the ground and close them securely. If they are known to be nesting in the granary or in a place where the air is confined, expose a quantity of carbon bisulphide in a saucer and close the door. In using the sulphide be careful to keep it away from any light or fire as it is very inflammable.

Another plan is to feed them poisoned flour, but if they have access to plenty of other feed they will not likely touch it.

Along the same line is to feed flour mixed with stucco, equal parts of each. The stucco hardens in the stomach and the poor fellows are done for.

A good plan for both rats and mice is to give them poisoned water to drink. A little strychnine in a small dish of water will soon rid a granary of mice and rats. Care, of course, must be taken to see that no other animal gets a chance to drink it. The dish containing the poisoned water can be kept on a shelf or other out-of-the-way place where the vermin pass along.

Where rats have burrowed in the ground around a corncrib a small charge of dynamite exploded in the holes will kill a few and badly scare the remainder. They don't like such noises nor bad odors like that of carbon bisulphide and will take their departure.

Make a good clearing out of the rats and mice, and don't winter a horde of thieves that will eat and destroy ten times the value of what it costs to rid the premises of them.

MOSS LITTER

The report of the Bureau of Mines just issued contains an interesting article on sphagnum moss and its value as a litter. There is a very large bed of this moss in the townships of Wainfleet and Humberstone in the county of Welland. It is practically a peat bog of some five thousand acres in extent, the upper layer of which consists of undecomposed sphagnum moss varying in depth from eighteen inches to four and a half feet.

The manner of preparing the moss is as follows: it is first cut into small squares, piled up, and allowed to dry. Then it is drawn to the pickers, which are machines that pick it to pieces; from the pickers it goes through the driers, then to the pressing room where it is pressed into bales ready for shipment.

The sphagnum moss is distinguished above all other plants by its capacity for absorbing and storing water. The stock and leaves of the plant are mere-

ly composed of large empty cells into which the water is drawn through a number of small holes. On the inner side of these cells are little rings or spiral formed thickenings which keep the cells from collapsing. They are thus always distended and ready for use. There are, of course, other cells which supply nourishment, but occupy so very small a space that the sphagnum moss may be said to be a series of reservoirs. It will take up from ten to fifteen times its weight in moisture. It is this power to absorb water that makes it of value as a litter or bedding for cattle in lieu of straw or other material.

The advantages claimed for it in Europe and Great Britain are that it makes a drier and healthier bedding for horses and cattle than any other material; that on account of its ability to absorb gases as well as water, it absorbs ammonia, which is always present to a greater or less degree in the atmosphere of a stable, and thus retains it along with the solids, making a more valuable manure; that on account of its absorbent powers it also acts as a disinfectant and improves the atmosphere of the stable; and that a smaller quantity of it is required than would be needed if straw were used. These data have been obtained in the German army stables where very careful trials of moss litter have been made. In cases of contagious diseases the moss litter mixed with superphosphate has had the effect of protecting cattle from foot and mouth disease. This property would no doubt make it a very valuable litter for use in railway cars employed in the transportation of live stock.

The manurial value of moss litter after it has served its purpose in the stable is greater than that of straw, for the reason that there is less evaporation of the liquid and volatile constituents. It would appear that no greater proportion of the potash, lime or sulphuric acid is recoverable by means of the litter, but the easily soluble nitrates are retained to a larger extent than in the straw, which allows of their escape in the form of ammonia.

The following table, taken from Bulletin No. 49, of the laboratory of Inland Revenue Department, Ottawa, by Mr. Thos. Macfarlane, chief chemist, gives the composition of moss litter from various localities in Ontario:

Localities of samples.	Moisture.	Ash.	Nitrogen.
Light colored moss from Caledonia Springs, Prescott.	10 00	1.60	2 95
Dark colored moss from the same locality.	11 60	2 70	2 23
Peat from the same locality.	10 95	3 90	2 94
Surface moss from Mr. Blue at Estima's.	10 85	2 80	0 71
Moss litter from bog in Welland Co.	3 85	4 70	1 51
Peat lying underneath the foregoing.	5 30	4 85	1 41

Mr. Macfarlane also calls attention to the value of moss litter as a deodorizer and absorbent for water closets. It has been used very successfully for this purpose in a number of cities in Germany and England. Good results have also been obtained with it in the neighborhood of Caledonia Springs.

Its advantage over the dry earth system consists in the perfect offensiveness of the moss litter product, in the fact that one part of moss litter will deodorize and dry at least six parts of mixed excreta, and in the greater agricultural value of the resulting manure. The following table gives the average contents of moss litter manure from seven different cities in Germany:

	Per cent.	Lbs. per ton.	Value per ton.
Nitrogen	0.604	13.28 @ 13c.	\$1.72
Phosphoric acid	0.350	7.00 @ 5c.	0.35
Potash	0.285	5.70 @ 5½c.	0.30
Water	83.000		
			\$2.37

Numerous trials have been made with this manure, and in all cases it is stated to excel farmyard manure.

To test the moss litter thoroughly as a deodorizer and absorbent Mr. Macfarlane got Dr. Lecharge, of Montreal, to conduct a number of experiments with it in privy pits in Montreal. It was found that 100 lbs. of moss litter were sufficient for drying 800 lbs. of ordinary excreta, and rendering it entirely inoffensive. A sample of this was analyzed with the following result:

	Per cent.	Lbs. per ton.	Value per ton.
Nitrogen	1.31	26.2 @ 13c.	\$3.41
Phosphoric acid	0.90	18.0 @ 5c.	0.90
Potash	0.14	2.8 @ 5½c.	0.15
Water	95.47		
			\$4.46

The value of ordinary fresh barnyard manure with 75 per cent. of water is about \$2 per ton. Moss litter might also be applied with great advantage in public urinals. A small quantity of it could be used to very great advantage in the water closet on the farm, and the product, having no offensive odor, would make a valuable addition to the manure heap.

CHAPPED HANDS.

A very useful ointment for chapped hands is made by mixing ten parts of rose water with one part of glycerine. This is the basis of nearly all preparations for chapped hands. The glycerine alone is too sticky and too strong to use nicely alone. Lemon juice may be used instead of the rose water for cutting the glycerine. Rub well into the hands at night when going to bed, and put on a pair of old gloves to keep the mixture from rubbing off on the your hands in the morning. Thorough scrubbing of the hands in warm water to remove all dirt must accompany this treatment for best results.

CORRESPONDENCE.

HOW THE TRADE IN PUREBRED LIVE STOCK MAY BE PROMOTED.

Editor of FARMING:

SIR,—The above question has been pressing upon my mind for some time past. Allow me, through FARMING, to offer a few suggestions along that line.

We often hear politicians say they are anxious to help the agriculturist and live stock breeders.

I would suggest that the Governments take over all the stud and herd books, and register all purebred stock free of charge. That would encourage more to go into breeding of purebred stock. What right has a man that raises

a thousand purebred sheep or pigs to pay \$500 for recording them in a book when he could keep a record of them himself and use the \$500 to further develop his business.

When a man imports live stock into this country, he takes all the risks himself, and if he loses half of them in transport, there is nobody to help him. Why, then, ask that man to pay for registering his stock here to further increase his expenses.

Then, again, if live stock breeding were helped and encouraged by the Governments, we would soon become an exporting, instead of an importing, country of purebred stock, and the sooner we reach that time the better for this country, for we cannot compete in wheat growing with some other countries. Then farm lands would be improved and enriched by raising more and better stock, and farming in general would be more profitable.

Yours truly,
Sunderland. W. M. SHIER.

Publishers' Desk.

An Interesting History.—A history of the American Jersey Cattle Club, by Thos. J. Hand, of New York, one of the founders of the organization, will appear in *The Jersey Bulletin* of December 22, 1897. This article, which will occupy the entire reading space of the paper, will be illustrated with pictures of all the presidents and secretaries of the Club. Nothing of this kind has ever appeared in print. Price, per single copy, 25 cents; five copies \$1. Address The Jersey Bulletin, Indianapolis, Ind.

Poultry Show.—The Galt Poultry Association met recently and decided to have a poultry show at Galt sometime in February. The exact date will be announced later on.

Stock Notes

N. DUMEST, Clappison's Corners. I am glad to report that my Ruby of Hickory Hill won the milk test at Brantford for two year-old Ayrshires. She has been shown at thirteen fairs and won thirteen first prizes. She won first place in a strong class at Toronto last fall. She has a grand constitution, and although of a good size is not rough. She has now proved herself a grand milker. Ruby will be two and one half years old the 17th of December. Although she has been milking now about four months, and has been around to seven shows, which has a tendency to slacken the flow of milk, she can put up thirty-five pounds of milk per day on dry chop and hay. I think this is as good as forty pounds, if she had been home all the time. I am sorry Nellie Gray (2057) took sick at the dairy show, as she is a grand cow, and has been milking over 200 days. She started the test with 117 lbs. at a milking, milking three times a day. Her milk is very rich, one day's milk tested 6 per cent. fat, which is hard to beat.

AUCTION SALE OF JERSEY CATTLE.—The sale of high-bred Jersey cattle, owned by Wm. G. Laidlaw and W. Humpidge, of London, held at Ettrick Farm, the property of W. G. Laidlaw, on December 21st, was very successful in spite of unfavorable weather. The principal bidders were from eastern counties and cities, and also from the United States. Mr. Massey, of Toronto, purchased six fine cows, at an average price of \$156 each. Mr. John Gardner, president of the National Bank, Philadelphia, also purchased six fine animals at good prices. The buyers from a distance were: Robert Davies, Toronto; Freeman Green, Kingston; John Cunningham, Norval; A. M. Thompson, Thameville; J. T. Clark, Brampton; N. Ballantyne, Brampton; R. A. Penhale, St. Thomas. The local buyers were: J. T. Fortner, W. C. Burns, London; T. H. Shore, Lambeth; Peter Lawson, Nilestown. The average price realized was \$107 per head.

H. J. ELLIOTT, Danville, Que., Dec. 13, '97. The year now closing has been one of my best since I commenced breeding Shorthorns. Sales have been good and inquiries numerous, especially for young bulls. I have had orders from the United States, the Northwest, and the Lower Provinces, and sold out early in the year. I was unable to fill them all. The following is about the extent of the sales I have made: Arthur Johnston, Greenwood, Ont., five females; Robert Miller, Broomham, Ont., three females; Aug. Canoe, Upper Melbourne, Que., two females; John Miller, Markham, Ont., two females; J. McCrea, South Durham, Que., one bull; Alton Hodge, Cookshire, Que., one bull; Leonard Mathews, Danville, Que., one bull; James Wilson, Danville, Que., one bull; M. Fitzpatrick, Danville, Que., one bull; Farmers' Club, Inverness, Que., one bull. I bought of John Miller, near Markham, a most excellent young bull. He won four firsts at our Provincial Exhibitions, and was so good I had to part with him to please a customer. Since then I have bought of Arthur Johnston a Nonpareil, got by Indian Chief, one of his best, a show bull in any land and fit to head any herd.

The Ontario Agricultural Gazette

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

DOMINION SHEEP BREEDERS' ASSOCIATION.

The annual meeting of the Dominion Sheep Breeders' Association was held in the Grand Trunk Reading Room, Brantford, Dec. 8th, at 7.30 p.m., the president, Mr. James Tolton in the chair. After the address of the president, which was adopted by the association, the following officers and directors were elected for 1898:

The list of officers, and directors and representatives to the fair boards will be found in FARMING, page 125.

Expert Judges

Cotswolds.—J. C. Snell, Snelgrove; Wm. Thompson, Uxbridge; John Thompson, Uxbridge; Thos. Teasdale, Concord; Jas. Russell, Richmond Hill; Jas. Main, Milton; H. Rawlings, Ravenswood; V. Fitch, Oriel; Geo. Weeks, Glanworth; T. Hardy Shore, Glanworth; W. G. Laidlaw, Wilton Grove; D. McCrae, Guelph; J. G. Snell, Snelgrove; Peter McGregor, Mimosa; Wm. Rae, Arkell; Wm. Ward, Uxbridge; Joseph Ward, Marsh Hill; John Park, Oriel; S. Coxworth, Whitby; Jas. Murray, Crosswell; Jos. D. Davidson, Belhaven; S. J. Lyons, Norval, Ont.; Wm. Petch, Blackheath; Jos. Gaunt, St. Helens; A. Johnston, Greenwood.

Leicesters.—E. Parkinson, Eramosa; John Orr, Galt; William Watt, Salem; Wm. McIntosh, Burgoyne; Thos. Currelly, Fullarton; R. Eastwood, Mimico; John Kelly, Shakespeare; Andrew Thompson, Fergus; J. K. Campbell, Palmerston; J. C. Snell, Snelgrove; Jos. Snell, Snelgrove; G. B. Armstrong, Teeswater; John Gibson, Denfield; C. E. Wood, Freeman; Jos. Gaunt, St. Helen's; Jas. Gaunt, St. Helen's; J. M. Gardhouse, Highfield; John Laidlaw, Wilton Grove; Andrew Whitlaw, Guelph; Wm. Whitlaw, Guelph; R. C. Martin, Marysville; Alex. Smith, Maple Lodge; A. Baskor, Thistleton; Alex. Waldie, Acton; Walter Nichol, Plattsville; H. G. Arnold, Maidstone.

Judge for Toronto—J. C. Snell, Snelgrove. Reserve—R. Eastwood, Mimico.

Judge for London—Wm. McIntosh, Burgoyne. Reserve—W. Nichol, Plattsville.

Judge for Ottawa—J. M. Gardhouse, Highfield.

Judge for Montreal—John Orr, Galt.

Judge for Guelph—Jos. Gaunt, St. Helen's.

Judge for Brantford—Alex. Smith, Maple Lodge.

Dorsets.—Thomas Hector, Springfield-on-the-Credit; John Jackson, Abingdon; Richard Gibson, Delaware; R. H. Harding, Thorndale; T. S. Cooper, Coopersburg, Pa.; M. A. Cooper, Coopersburg; John Hunter, Wyoming; G. P. Everett, Mt. Vernon; Mortimer Levering, Lafayette, Ind.; Jas. Hanmer, Mt. Vernon; J. C. Snell, Snelgrove.

Southdowns.—John Millar, Markham; Wm. Martin, Binbrook, R.

Gibson, Delaware; John Jackson, Abingdon; T. C. Douglas, Galt; Henry Arkell, Teeswater; W. H. Beattie, Wilton Grove; W. Simenton, Blackheath; Geo. L. Telfer, Paris; J. G. Hanmer, Mt. Vernon; J. Scott, Aberfoyle; G. Baker, Simcoe; F. W. Barrett, Wadsworth, N.Y.

Oxfords.—Smith Evans, Gourcock; Jas. Tolton, Walkerton; R. J. Hine, Dutton; Henry Arkell, Arkell; Wm. Dickenson, Mildmay; Peter Arkell, Teeswater; Herbert Wright, Guelph; John Harcourt, St. Ann's; J. H. Jull, Mt. Vernon; Henry Arkell, Teeswater; John E. Cousins, Harriston; Elmer Turner, Burford; Arch. McKenzie, Corwhin; R. E. Birdsall, Birdsall; Geo. McKerron, Sussex, Wis.; W. A. Shator, Middleton, O.; J. C. Williamson, Xenia, O.; C. C. Keinar, Breckville, Ohio.

Hampshires.—Henry Arkell, Arkell; Henry Arkell, Teeswater; R. Gibson, Delaware; I. Hiller, Tourtown, Mich.; John Kelly, Shakespeare.

Lincolns.—J. T. Gibson, Denfield; William Oliver, Avonbank; E. Parkinson, Eramosa; T. E. Robson, Ilderton; G. Walker, Ilderton; John Geary, London; J. C. Snell, Snelgrove; R. W. Stevens, Lambeth; L. Parkinson, Eramosa; T. Rolph, Ballymote; L. Goodwin, Monroe.

Merinos.—W. M. Smith, Fairfield Plains; R. Shaw, Glanworth; W. H. Beattie, Wilton Grove; Rock Bailey, Union; And. Tirrell, Wooler.

Shropshires.—Richard Gibson, Delaware; G. P. Everett, Mt. Vernon; J. Conworth, Paris; W. H. Beattie, Wilton Grove; A. Brown, Picton; Robert Miller, Brougham; J. Hanmer, Burford; James McFarlane, Clinton; J. Cooper, Kippen; T. M. Whitesides, Innerkip; J. Campbell, Woodville; D. G. Hanmer, Burford; James Phinn, Hespeler; M. Levering, Lafayette, Ind.; A. Elliott, Galt; S. H. Todd, Wakeman, O.; J. Dickin, Milton West; John L. Thompson, Gas City, Ind.; George Allen, Allerton, Ill.; W. G. Pettit, Freeman; D. J. Campbell, Woodville; G. Phinn, Hespeler; Chas. Calder, Brooklin; H. N. Gibson, Delaware; Geo. Hindmarsh, Ailsa Craig; C. W. Gurney, Paris; W. E. Wright, Glanworth; J. Miller, Brougham; H. Hanmer, Burford; A. McMillan, Lorneville; A. McKay, Woodville; J. E. Coffland, Richland Centre. Judges for Toronto: Geo. Allen, Allerton, Ill.; W. H. Beattie, Wilton Grove; substitute, W. E. Wright. Judges for London: R. Miller, Brougham; substitute, G. Everett, Mt. Vernon. Judges for Montreal: R. Gibson, Delaware; substitute, H. Hanmer. Judges for Ottawa: John Miller, Brougham; substitute, Chas. Gurney, Paris.

Mr. Mortimer Levering, of Lafayette, Ind., afterwards read a paper on "The Requirements of the Home and Foreign Mutton and Wool Markets," which was much appreciated by the members present.

This was followed by a short discussion opened by Mr. C. W. Yapp, of Brantford.

DOMINION SWINE BREEDERS' ASSOCIATION.

The annual meeting of the Dominion Swine Breeders' Association was held in the Grand Trunk Reading Room, Brantford, Thursday, December 9th, at 7.30 p.m., the president, Mr. J. E. Brethour, in the chair. The address of the president outlined the work done by the association during the past year, and was adopted by the association officers and directors for 1898.

Officers for 1898.

President, Geo. Green, Fairview.
Vice-President, Wm. Jones, Mt. Elgin.

Directors.

Berkshires, Thos. Teasdale, Concord.
Yorkshires, G. B. Hood, Guelph.
Chester Whites, R. H. Harding, Thorndale.

Poland Chinas, W. M. Smith, Fairfield Plains.

Duroc-Jerseys, Wm. E. Butler, Dereham Centre.

Tamworths, And. Elliott, Galt.
Suffolks, A. Frank, The Grange.

Essex, Jos. Featherston, Streetsville.
O.A.C., G. E. Day, O.A.C., Guelph.

General Director, J. E. Brethour, Burford.

Official Auditor, J. M. Duff, Manager Bank of Commerce, Guelph.

Delegates to Fair Boards.

Toronto, Thos. Thorndale and J. E. Brethour.

Ottawa, Jos. Featherston and Jos. Yuill.
London, George Green and D. De Courcy.

Montreal, Jos. Featherston and J. M. Hurley.

Peterboro, Robt. Vance, Ida.
Guelph, G. B. Hood and Jas. Anderson.

Brantford, T. A. Cox and Geo. Thompson, Bright.

Belleville, J. M. Hurley.

Expert Judges.

Berkshires.—H. J. Davis, Woodstock; J. C. Snell, Snelgrove; Thos. Teasdale, Concord; George Green, Fairview; Robert Vance, Ida; T. A. Cox, Brantford; Jas. Quarrie, Delaware; Jos. Featherston, M.P., Streetsville; S. Coxworth, Whitby; R. P. Snell, Snelgrove; Malcolm McArthur, Lobo; C. R. Decker, Chesterfield; J. G. Snell, Snelgrove; Chas. Youngs, Brookdale; Wm. Jones, Zenda; D. DeCourcy, Bornholm; Geo. Thomson, Bright; Robert Gibson, Galt; R. H. Harding, Thorndale; Jos. Yuill, Carlton Place; W. C. Edwards, Rockland; Jos. Barnett.

Yorkshires.—Richard Gibson, Delaware; Henry Deddels, Kossuth; Sharpe Butterfield, Windsor; J. E. Brethour, Burford; G. B. Hood, Guelph; Jos. Featherston, M.P., Streetsville; H. E. Sharpe, Ida; A. F. McGill, Hillsburg; J. G. Mair, Howick, Que.; J. M. Hurley, Belleville; Geo. Greer, Grand Valley; Jas. Stephen, Trout River, Que.; R. McLellan, Harriston; Jos. Fletcher, Oxford Mills; Robt. Nichol, Brussels; A. & F. Foreman, Collingwood; J. Y.

Ormsby, Woodstock; F. C. Fearman, Hamilton; J. W. Flavelle, Toronto.

Chester Whites.—Wm. Jones, Zenda; J. C. Snell, Snelgrove; George Green, Fairview; J. E. Brethour, Burford; D. DeCourcy, Bornholm; R. Dorsey, Burnhamthorpe; R. H. Harding, Thorndale; W. E. Butler, Dereham Centre; G. B. Hood, Guelph; G. E. Day, Guelph; Thos. Teasdale, Concord; S. H. Todd, Wakeman, Ohio; J. G. Snell, Snelgrove; Gideon Snyder, Jarvis; Henry Jones, Zenda; Jos. Cairns, Camlachie.

Poland Chinas.—Thos. Teasdale, Concord; S. H. Todd, Wakeman, O.; Jos. Featherston, M.P., Streetsville; J. H. Snarey, Croton; Jas. Main, Milton; Capt. A. W. Young, Tupperville; George Green, Fairview; Wm. Smith, Fairfield Plains; Jos. Brethour, Burford; Wm. Jones, Zenda; Oliver Drury, Fargo; R. Dorsey, Burnhamthorpe.

Duroc-Jerseys.—Jos. Featherston, M.P., Streetsville; Peter Lamarsh, Wheatley; Wm. Jones, Zenda; J. G. Snell, Snelgrove; Geo. Green, Fairview; Thos. Teasdale, Concord; S. H. Wakeman, O.; Geo. McGarvin, Chatham; R. H. Harding, Thorndale; D. DeCourcy, Bornholm; Wm. Tape, Ridgetown; Wm. Smith, Burford; Harry Jones, Zenda; Herbert George, Crampton.

Tamworths.—N. H. Blaine, St. George; A. Dunn, Ingersoll; J. H. Simonton, Chatham; G. North, Marden; A. Elliott, Galt; L. F. Maser, Haysville; A. C. Hallman, New Dundee; F. Shore, London; J. Bell, Amber; D. G. Hanmer, Burford; John Nichol, Hubrey; Jos. Brethour, Burford; H. Caldwell, Orchard; W. Elliott, Hamilton; C. C. L. Wilson, Ingersoll; C. Fearman, Hamilton; And. Laurie, Wolverton; Wm. Davies, Toronto.

Suffolks and Essex.—S. Butterfield, Windsor; R. Dorsey, Burnhamthorpe; Jos. Main, Milton; David McCrae, Guelph; Jas. Anderson, Guelph; Simon Lemon, Kettleby; T. C. Douglas, Galt; Wm. Elliot, Milton; Jas. Millar, Guelph.

After the election of officers, Mr. Chester Fearman, of Hamilton, and Mr. C. C. L. Wilson, of Ingersoll, addressed the meeting on the "Requirements of the Home and Foreign Pork and Bacon Markets." Great interest was taken in these addresses which were illustrated by sides of bacon showing the effect of feeding and breeding on the finished product.

DOMINION CATTLE BREEDERS' ASSOCIATION.

(For report see FARMING, page 116.)

Next Session.—While new members are admitted at any time to the several departments of the Central Business College of Toronto, it will be well for intending patrons of a school of this kind to note that the Winter Term of this popular college begins on Monday, Jan. 3rd next, and that in the meantime any information may be obtained by writing for a copy of the latest prospectus issued by this institution.

MARKET REVIEW AND FORECAST

Wheat - The market is quiet, though a few cars have been reported...

Wheat - There has been no change in prices...

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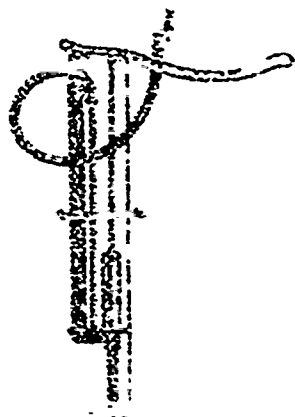
Fruit.

Trees and Vines become harder, and their products better colored and better flavored when properly treated with fertilizer containing at least 10% potash.

Potash.

FREE - A 10-page leaflet which tells what potash is, and how it should be used, is sent free to all applicants.

GERMAN KALI WORKS 93 Nassau St., New York.



The Spramotor

Certificate of Official Award: The Spramotor is the only machine of its kind...

At Montreal prices ran from \$1.50 to \$2.00 per bushel...

Butter. The market at Montreal for the week shows a decrease...

Cattle. The market at Montreal for the week shows a decrease...

Sheep. The market at Montreal for the week shows a decrease...

There is no doubt about the merit of the spramotor...

There is no doubt about the merit of the spramotor...

There is no doubt about the merit of the spramotor...

Hogs - The feed and management of the right character...

Ingersoll Poultry and Pet Stock Association...

Hatch Chickens by Steam - Excelsior Incubator...



Satisfactory Steel Bobs at a Satisfactory Price...

EASIEST-RUNNING SLEIGH MADE

Rubber packing between 1 1/2 x 3/4 Steel Shoes and Frame prevents bolts breaking...

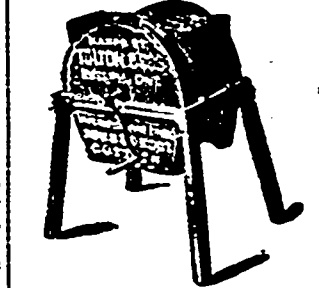
We have shipped out full output of cutters and sleighs...

Don't arrange for your new Buggy Spring Wagon or Cart until you have seen our '98 models...

80 STYLES TO CHOOSE FROM

The McLaughlin Carriage Co., Oshawa, Ont.

TOLTON'S NO. 1 DOUBLE ROOT CUTTER



The Latest and Best and The Only Double Root Cutter Manufactured

- 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 having large lower pockets prevents choking.

TOLTON BROS., - Guelph, Ont.

There is No Doubt About the MERIT of DEHORNING. It cuts both ways, does not crush. One clip - one horse - one day. Write for circular. The Keystone Dehorner Mfg. Co., Picton, Ont., Can.



College of Commerce, St. Catharines, Ont. R. REYNOLDS, Principal

Fence Machine will weave your fence of any kind of wire. 40 to 50 rods per day. Agents wanted. BANWELL & CO. Windsor, Ont.

Keep the House Warm

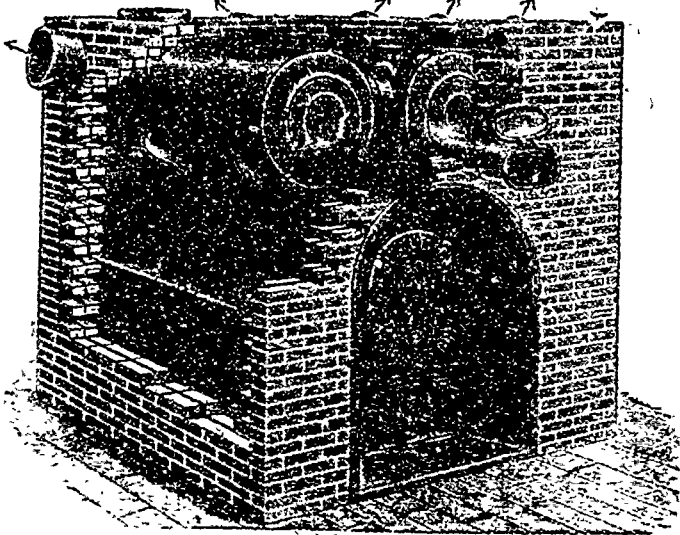
There need not be a chilly corner in any house warmed by our famous

LITTLE OX WOOD FURNACES

They have either triple or double return flue radiators, giving them an immense fire travel; are very easy to clean and regulate; take 3-ft. rough wood, and COST VERY LITTLE.

LET US SEND YOU AN ESTIMATE.

They are either portable or stationary for brick setting.



E. T.

The Gurney Foundry Company, Limited, - Toronto
The Gurney-Massey Company, Limited, - - Montreal

The Common Sense Bolster Spring

For Transforming Common Wagons into First-Class Spring Vehicles.



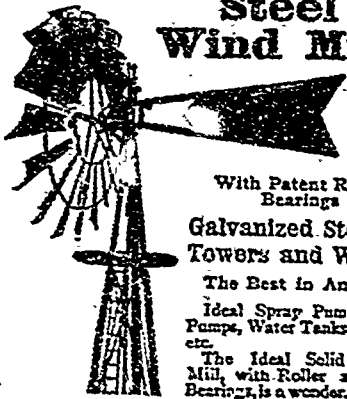
WINDSOR BOLSTER SPRING CO

...WINDSOR, ONT...

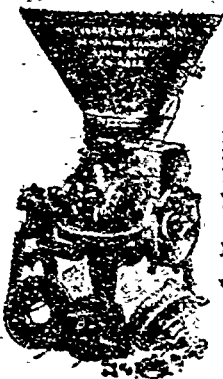
Every Spring guaranteed. Will carry light or heavy loads. Especially adapted for marketing fruit, etc. Capacity up to 7,000 lbs. Write for particulars. In ordering give width between stakes and capacity required.

BEST Farm Wagon Spring in the World

BRANTFORD Steel Wind Mills



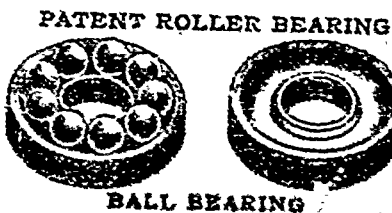
With Patent Roller Bearings
Galvanized Steel Towers and Wheels
The Best in America
Ideal Spray Pumps, Iron Pumps, Water Tanks, Piping, etc.
The Ideal Solid Power Mill, with Roller and Ball Bearings, is a wonder.



The Celebrated "Maple Leaf" Grinder
Made in 2 sizes: No. 1 Senior, with 10-inch reversible burrs, and No. 2 Junior, with 8-inch single burrs.
Fine and coarse burrs.
Ball Bearings for Plate Relief Springs.
For any power or any work.
Always guaranteed.

Ideal Power Windmills

Are under easy control, cannot break loose and run away in a storm. Are strongly built and durable. Have the heaviest gear and will safely give the most power in high winds. Are the most satisfactory farm power. Cheapest, easiest to operate, and most effective.



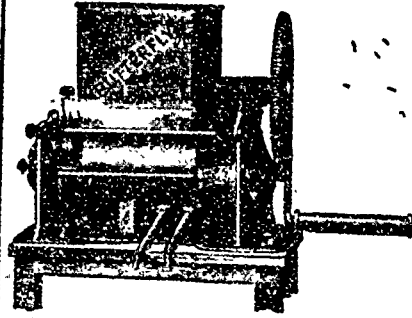
PATENT ROLLER BEARING

BALL BEARING



BRANTFORD CAN.
Send for Circulars and mention FARMING

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It is the latest, best, simplest, and cheapest machine on the market.

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Runs easiest. A child can run it. Easily kept in order. Requires very little oil.

Write for agent's terms for county rights. They are being rapidly taken up. A quick seller and a sure winner.

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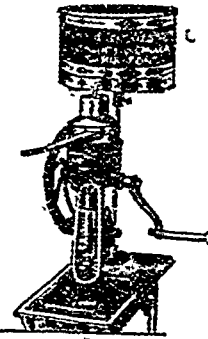
Unbounded Success

WITH THE

American Cream Separator

A CLEAN SKIMMER

Messrs. Richardson & Webster, Jarvis, Ont., July 26th, 1907.
GENTLEMEN,—In reply to your letter of the 22nd, I would say the American Cream Separator that I purchased from you last September has done all that you claimed for it. I went to Toronto fair last fall with the intention of buying a separator; after looking over the different makes, I concluded to buy the "American," and it has given me entire satisfaction. I find it runs easy, is no trouble to keep in repair, and it is a clean skimmer. In my opinion it is the most perfect machine on the market.



They all have something of the same to say. Are you building a creamery? If so, get our prices for the complete outfit. We manufacture and handle churns, butter workers, engines and boilers, cream separators, and everything required for making butter or cheese.

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The construction of the Calgary and Edmonton Railway, and the Qu'Appelle, Long Lake, and Saskatchewan Railway, has opened up for settlement two new districts of magnificent farming land, viz., that between the North and South Saskatchewan Rivers, and that between Calgary and Red Deer.

Full information concerning these districts, maps, pamphlets, etc., free. Apply to

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One reason why these Presses are the Best—is provided with a roller automatically operating each charge and taking care of the hay or straw in making bales in the feed box, so fed to the machine, enabling the operator to feed the press as fast as the horse or team may walk, without the use of feed boxes, hoppers, conveyors, or dangerous contrivances.

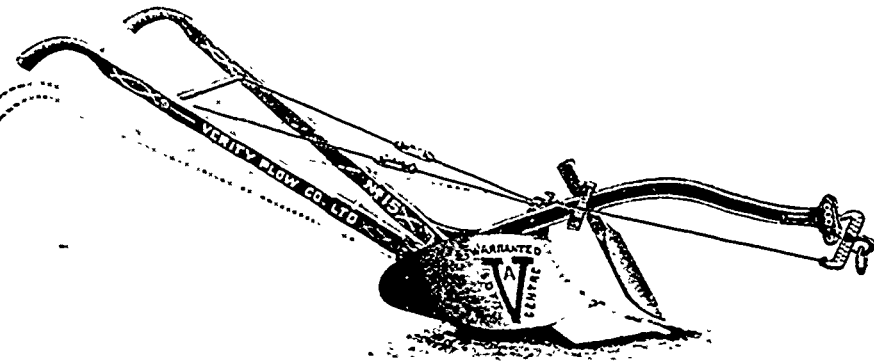
BUSINESS

is going on again as usual in spite of the disastrous fire that visited our works on October 26th last.

Newly secured premises, which we have just equipped with the latest machines and tools, in addition to our former steel plant and foundry, which were saved, enable us to turn out **Verity Ploughs and Scufflers** as expeditiously as ever.

New stocks of High Grade Raw Materials have been received, and with increased and better facilities for manufacture and inspection, our customers may look for a very high class of goods.

We make all styles and kinds of Ploughs, from a One-Horse Holding Plough to a Four Furrow Australasian Gang Plough.



Verity, No. 15, One Horse Plough

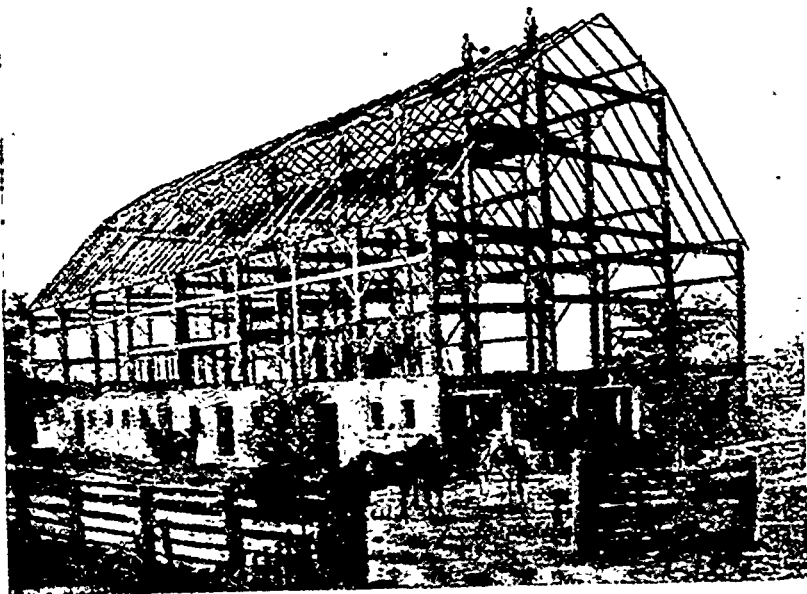
Verity Plow Co., BRANTFORD. (LIMITED)

Sold by Massey-Harris Agents everywhere.

THE Thorold Cement

High in Quality 56 Years in use.
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The Leading Cement for Building Bank Barns, Cement Floors in Stables, Silos, Culverts, Pig Pens, etc.



Mammoth Barn of Beswetherick Bros., near Hagersville, Ont. Floors for horses and cattle were put in this barn with **BATTLE'S THOROLD CEMENT**.

Has been tested in every capacity. Most perfect Cement made.

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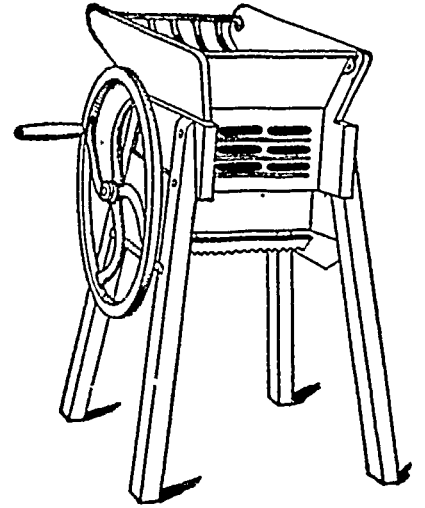
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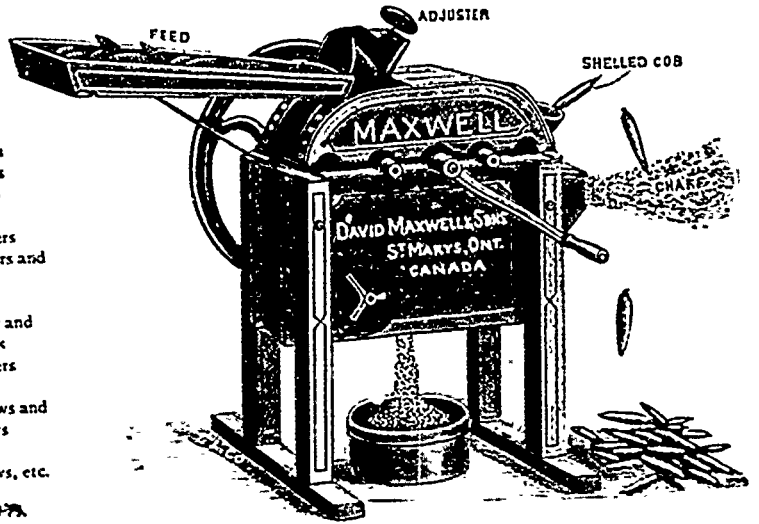
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Agents wanted in all unoccupied territory.

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We are the largest manufacturers of Ploughs, Land Rollers and Wheelbarrows in Canada. In everything we have only one quality, covered by absolute guarantee. Send for Catalogue.

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