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# FARMING

January 24th, 1899.

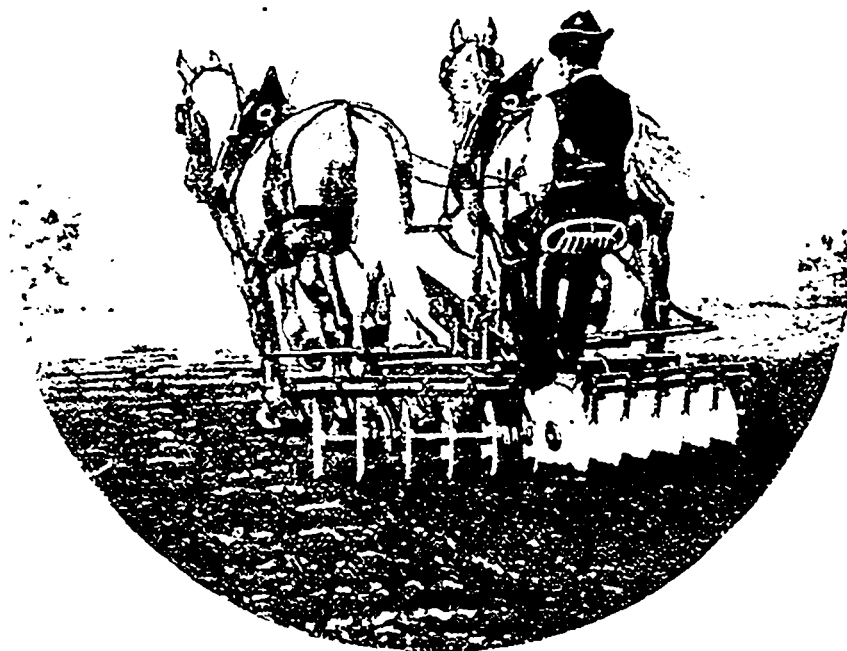
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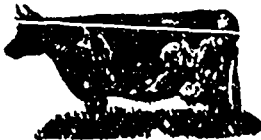
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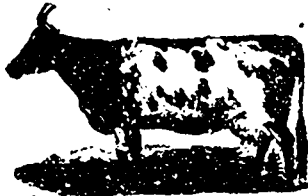
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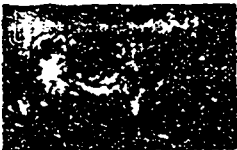
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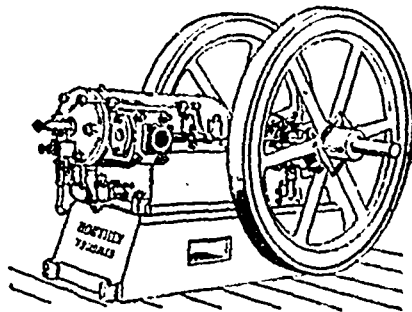
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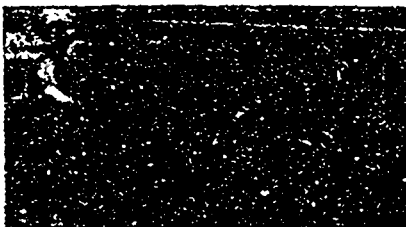
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Half-price

Orders booked and filled as received.

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# FARMING

VOL. XVI.

JANUARY 24th, 1899.

No. 21

## Name Wanted

We have received a letter from a gentleman in Regina, Assa., dated January 13th, 1899, enclosing a subscription to FARMING with \$1 for the Hospital for Sick Children. No name is signed to the letter, and we shall be pleased if our generous but careless correspondent will supply the deficiency. The dollar has been forwarded to the treasurer of the Sick Children's Hospital, but we cannot forward the paper until we hear from the subscriber who sent the money. "May his tribe multiply" There is no institution in existence which appeals so strongly to the sympathies of the fathers and mothers of this country as the Hospital for Sick Children, and if each of our readers would only send his mite—no matter how small it may be—a great good would be accomplished and the donors would be so much the happier for their self-sacrifice that they would hardly know themselves. Try it, my friend, and if it does not do you good FARMING will cheerfully refund you the money. We are pleased to acknowledge the receipt of \$5 from Mr. Albert Pollard, of Norwich, Ont., for the same worthy object. This has also been sent to the treasurer of the hospital and duly acknowledged in the columns of *the Evening Telegram*.

## The Export Butter Trade

During the past few years expansion in Canadian dairying has been along the line of butter rather than of cheese. This is as it should be. We are now exporting annually from \$14,000,000 to \$16,000,000 worth of cheese to Great Britain, but as that country only imports about \$25,000,000 worth of cheese every year there is not very much room for further development along that line. In fact, the expansion of our cheese export trade has about reached its limit, and further efforts to increase the quantity of our exports would be useless and would only cause a "glutting" of the market and an unnecessary lowering of values.

But what about the export butter trade? Here we have a field that admits of very large development. Great Britain imports yearly about \$80,000,000 worth of butter. Of this amount Canada will contribute between \$3,500,000 and \$4,000,000 during the present season. This, however, is over three times as much as we exported a few years ago, showing that the trade is gradually increasing. In contrast with Canada we have Denmark, sending every year to Great Britain \$35,000,000 worth of butter, or nearly one half of the total amount she imports. If it is possible for a little country like Denmark to export \$35,000,000 of butter annually, surely we are not over-stating the case when we say that Canada should send every year to Great Britain at least \$25,000,000 worth of butter. This is not an extravagant claim, and all that is required to bring about its fulfilment is systematic and persistent effort on the part of our dairymen and a determination to send forward only the very best quality of goods.

In extending our export butter trade, however, we will have to face strong competition. Those who are already supplying Great Britain with her imported butter will not give up their places without a struggle. But Canadian dairymen are not afraid of competition. In the early stages of the cheese industry they had to face competition from the United States, but, nothing daunted, they persevered, with the result that Canadian cheese has to a very large extent replaced that from the United States in the British markets. And, though we have, perhaps, stronger competition to meet in developing our butter trade than

was the case in developing our cheese trade, yet with the same persistent effort failure should not be the result.

To extend our export butter trade the finest quality of product must be made and sent forward regularly and in good condition. To attempt to develop the trade by holding the butter on this side till it loses its freshness is to court failure. Our creamerymen must be prepared to accept current market prices and to send forward their supplies every fortnight, or week, as the exigencies of the case may demand. When this is done, and only the finest quality sent forward, the trade is certain to grow to large proportions.

## Storing Ice

No farmer, and especially if he is a dairy farmer, can afford to be without ice for summer use. Where a farmer keeps a large number of cows, and has to care for and handle a considerable quantity of milk every day, ice is almost indispensable. Ice will also be found useful in many other ways than for dairy purposes. With ice on hand a cheap refrigerator can easily be fitted up for keeping fruit, butter and other perishable products in.

Our Canadian winters usually furnish us with an abundance of good ice in the rivers and streams throughout the country, so that every farmer can secure all he requires with very little trouble. An ice-house need not be an expensive structure. In fact any rough building made of rough boards will answer the purpose. Good drainage must be provided for and also good ventilation. The drain should be erected in such a way that no current of air will be admitted through it to the ice. There should be a good foundation or bed on which the lower layer of ice is to rest, and it should be covered with non-conductive material.

Though it is better, perhaps, to build an ice-house in the fall of the year so as to have it ready for filling at any time during the winter, yet it can be built at any time. If the house is not ready when the ice is the ice can be put in a pile on a proper foundation or bed and a house put over it at convenience. An old hay barn or shed can often be utilized for this purpose, and in case of an emergency ice can be kept without any kind of a building over it if plenty of sawdust or tan-bark can be had for packing. In some places where lumber is scarce and hay is plentiful and worth little the walls of an ice house have been made of pressed hay. However, whatever the method of storing, every farmer should have a supply for family and dairy use.

## Canadian Poultry in Great Britain

The special correspondent of the *Montreal Trade Bulletin*, in his London letter of December 24th last, gives some very interesting data regarding the outlook for Canadian poultry in England. He states that he has given this subject some special attention, and is delighted both with the results achieved and the future chance of a great and lucrative business for Canada. He points out that during the Christmas trade this year Canada has received a wide advertisement. At nearly all the large emporiums Canadian turkeys have been sold as such, so that those who buy them will know from what source they come.

Some 60,000 Canadian turkeys have been sold in London alone this season, and one firm, Messrs. Harris &

Chate, handled 36,000 of them, which, the writer states, they got rid of, and could have disposed of more. Referring to an interview with a member of this firm, the *Trade Bulletin's* correspondent says:

"Prices have ranged from 6d. a pound in the early part up to 8¼d. later on, according to the size of the birds. There is a great deal left that is desirable, however, in the mode of packing, which he hopes to remedy by next year. The plucking is done by inexperienced hands, and appears very slovenly. I was shown Canadian and Italian birds side by side, and, though the former were no doubt a better bird, and would eat much better, the Italian looked cleaner, the breast was in appearance broader, and it would undoubtedly fetch more money. The Canadian had stray feathers sticking out here and there, and the breastbone standing out had a most unusual appearance. It is the custom in the trade to break this bone, which is done while warm by the insertion of a long handled short knife behind the wing up under the breast bone, which is then broken by a down drive of a light mallet. The breast then spreads out, and presents an attractive appearance. Next season the firm are going to send over experts to see to the plucking and dressing, and we may then expect the birds to present that bright look we have grown accustomed to in turkeys from France and Italy. Shippers should be careful to note these points."

Further on the writer points out that the above firm is prepared to receive consignments from the 1st of October till the end of January, but fowls will sell there all the year through, and there is a lot of money in it. The firm has been selling fowls from Canada, the outside cost of which was 10d. apiece, at 1s. 6d., and they were improperly dressed. If they had been dressed and packed well, they would have realized 2s. each. There is also a good market for ducks at other times than Christmas. Great care needs to be exercised in the dressing and packing. Turkeys, having been cleanly plucked and the breastbone broken while the bird is warm, should be packed: 20 birds under 12 pounds, 16 birds of from 12 to 16 lb., and 12 birds over 16 lb. in a case. Fowls should be plucked very carefully and wrapped in paper, great care being taken to avoid any exhibition of blood on the bird, and they should be packed: Large, 80 in a case; smaller, 100 in a case.

The writer then goes on to emphasize that the trade should not be a once-in-twelve-months one, but should be continued right through the year, and form an important branch of Canadian trade. Large quantities of Canadian poultry have also been sent to Liverpool. The shipments to Manchester have not fared so well this year. The merchants there had seemingly made too extensive arrangements, and immense supplies poured in from all points, which resulted in their having more poultry than they could dispose of.

## Winter Butter on the Farm

Written for "Farming" by Mrs. E. R. Wood

There are often serious difficulties to be overcome in making first-class butter in winter with the conveniences (or inconveniences) at the command of the housewife. It requires skill to make a fine quality of butter at any season, but during the winter months a number of causes combine to render such an undertaking especially difficult upon the average farm.

It is, no doubt, true that a great deal of the poor butter found in the markets comes from the farm dairy. The home butter-maker is responsible for it. Sometimes the fault lies entirely with the butter-maker; but, could we see and understand what many farmers' wives have to contend with, we might wonder that they do as well as they do.

In the first place, but few cows are usually milked at this season of the year upon the average farm, and of these few probably nearly all have been giving milk for several months. This fact adds to the difficulty of producing finely flavored butter under any circumstances. Such

animals give milk less easily divested of its cream, and the cream is less easily made to yield to the action of the churn. There should be some fresh cows at regular intervals during the year. This milk is needful to keep the quality of the whole in good condition for creaming and churning. Most of the trouble met with at this season in bringing the butter has its origin in the milk of one or more cows long in lactation. We frequently hear complaints about the cream not turning to butter in the churn. Sometimes it fails to come entirely, as a good many farmers' wives know to their sorrow. When there is difficulty of this kind the cause can usually be traced to one cow, and by discontinuing the use of her milk the trouble disappears.

How to separate the cream from the milk in winter in an acceptable manner is a question which puzzles many home butter-makers.

If a portable cabinet creamer is employed for this purpose in summer it may just as well be used all winter. It is far better to raise the cream in that way than to set the milk in pans upon the pantry shelves or about the kitchen stove, as is frequently done. Even when there is but little milk it is more satisfactory to use the creamer, and a much better quality of butter will result than from the pan system under any ordinary conditions.

Allowing milk set in pans to stand too long before it is skimmed results in the cream becoming bitter. Fine butter cannot be made from such cream, no matter how skilful its subsequent handling may be. Milk should never be allowed to stand longer than thirty-six hours. All the cream is then on the surface that will ever be.

Much depends upon the treatment which the cream receives in the process of ripening. Herein lies another stumbling block, which is a common source of failure on the part of the home butter-maker. The cream is often held too long before being churned. The quantity obtained may not be large enough to make a churning within a few days, and she yields to the temptation to wait until more has accumulated.

There is no danger of the cream becoming too sour in cold weather, so she "guesses" it will be all right to keep it a few days longer.

This mistake is fatal to the high quality of the butter. Although the cream may not sour a change takes place, and when, finally, it is converted into butter, an off-flavor will be plainly perceptible.

Cream should never be held longer than three days before churning, under ordinary circumstances. Even though the amount be small it should be churned regularly in order to ensure a fine product.

Ripening cream properly a delicate process at any time. In winter, with the conditions surrounding the dairy work such as they are in most farm-houses, it becomes doubly so. Temperature controls the ripening, and the difficulty of holding the cream at the right point for the period necessary for its completion requires better facilities than are at the command of the average farmer's wife.

The cream must be warmed up to 60° to 65°, and not allowed to go much, if any, below the former point until it begins to thicken. This may be in twenty-four hours; very likely it will be if a little fresh butter milk from the last churning be stirred into the cream when the ripening process begins, and an even temperature maintained.

Churn when about as thick as paint. Do not wait until it gets too sour.

Use a dairy thermometer, and churn at about 62° in winter. If your cows are Jerseys or Guernseys the churning may be done at a higher temperature, and I have made fine granular butter by having the cream put into the churn at 66°. It is better to err on the safe side, however, and not go above 64°.

A dairy thermometer should be in use in every farm house where butter is made, be the quantity much or little. Its cost is slight, but its value is untold. The possession of this little instrument robs butter-making of half its labor, and its use ensures an evenness of product otherwise unattainable.

Nothing has here been said about the part which the care of the cows plays in determining the quality of the butter. It is fully as important that they be fed upon good food and well cared for in every respect as it is that the milk and cream be properly attended to and the churning done in the right way. The best butter maker in the world cannot take such milk as is brought into some farm-houses and from it evolve a high-grade product. Filth of every description should be avoided in the stable and in handling the milk therein. Many milkers are careless and do not take sufficient pains to keep foreign particles out of the pail. Milk once tainted in this manner will carry stable odors to the churn and the butter-tub.

There must be co-operation between the workers out of doors and those within if the butter is to rank as first quality upon the market.

There is a satisfaction which comes as a result of work well done in any direction. In nothing is this more true than in regard to making butter. Farm butter at present ranks as inferior to creamery; yet, were all farm butter made as it should be, and as it might be, this distinction would quickly disappear.

## Fertilizers in Cold Climates

Written for Farming by R. Garwood.

It is well known that quick growing crops, or crops grown in countries which from their high latitudes or other causes, have a comparatively short season of growth, require plant food in a form very readily assimilated by the plant. An important matter in relation to this point is that, with a shortened growing season, maturity closely follows actual growth.

If a crop of potatoes, for example, is grown in a northern latitude to be used as seed for more southern sections, it is very important that ample supplies of the mineral manures, potash and phosphate should be assimilated early in the growing season. Only a fully matured potato gives satisfactory results as seed, and a dwindling supply of mineral fertilizer during the latter stages of growth is pretty sure to result in a crop of immature potatoes; of lessened value as food and of little value as seed.

Canada-grown seed potatoes have for a long time been used in the United States for early potatoes, but of late years have only too frequently failed to give satisfactory results. It is very common for the "eyes" to fail to germinate, though the tuber is fair and plump so far as outward appearance goes. This is very probably due to the exhaustion of potash in many of the Canadian soils, from constant cropping without adequate restitution. Where wood-ashes are used freely, the same result happens very commonly; wood-ashes are a good source of fertilizer potash, but they also carry large quantities of lime which acts to liberate the supplies of potash existing naturally in the soil; as a consequence, the soil rapidly becomes deficient in potash. In the United States farmers have a common "saying" to the effect that lime enriches the father at the expense of the son, meaning that the use of lime tends to exhaust potash quickly. If sufficient supplies of wood-ashes were used to keep up the supply of potash, there could be no damage from the free use of lime, but to properly supply the potash needed yearly would require more wood ashes than the Dominion can supply in ten years.

Potatoes are an exhaustive crop. They are largely water and starch, it is true, but a good crop of potatoes remove from the soil 100 pounds of potash for every 20 pounds of phosphoric acid. Unlike most other annual crops, potatoes remove more potash than nitrogen. Wheat removes only a little more potash than phosphoric acid, but oats much more closely resemble potatoes. An acre of oats will require more than twice the potash of an acre of wheat. What has been said of the influence of an ample supply of fertilizer minerals for the proper maturity of potatoes applies with equal force to wheat and oats, or other crops.

As seed their condition for use in the Dominion is just as important as it is in the United States.

To insure a supply of fertilizers at the proper time, use them early as well as in ample quantities. The mineral fertilizers, that is, phosphoric acid and potash, will lose little or nothing by being applied weeks or months before plant growth begins, so long as surface washing can be prevented. With nitrate of soda or sulphate of ammonia, the application must be made only shortly before seeding. With minerals, apply enough and apply it early is a safe maxim.

## Prince Edward Island Farmers' and Dairymen's Association

(Specially Reported by J. A. M.)

The semi annual meeting took place on January 5th and 6th last at Wilmot Valley. The attendance of delegates from all over the province was large. A remarkable and pleasing feature of the meetings was the number of newspaper men present. All were in a happy mood, and were bent on doing something good.

At 1 p.m. on Thursday the meeting was called to order by Vice-President John R. Edwards, of North Wiltshire. Joseph Rogers spoke of the advantages of mixed farming, which was, in his opinion, the most profitable line to follow. Special farming might do very well when prices were good, but, from his opinion in swine-breeding, dairying, etc., mixed farming paid the best.

William Thompson read a paper on general farming, and how to make it pay, closing by asking a series of questions in reference to paying lines of farming.

Mr. Brown spoke of the Rattenbury pork-packing establishment, and suggested appointing a delegation to wait on the proprietors with a view of ascertaining the quality of hog best suited to their requirements.

Mr. Pond was of the opinion that the proposed factory at Summerside should be built forthwith.

The hog was the next subject placed before the meeting for discussion. Mr. Crockett gave his experience of feeding a bunch of young pigs last summer. The litter had remained on the sow for about two months, when he turned them into a field of clover, feeding some skim-milk and whey, and all the raw mangels they would eat. At about six months old they netted him (the litter) \$130. He thought this was the cheapest, best, and most profitable method of feeding he had ever tried.

Mr. Anderson spoke commendatory of Mr. C.'s management. He did not approve of boiling for pigs, and they would grow and thrive without a drop of milk. Peas, oats and vetches were the best feed, and daily exercise for an hour or two was quite necessary.

Mr. Turner deprecated the idea of purchasing the pigs, even at \$1.50 each; could raise them for 50c.

Something should be done to create a better understanding between the pork-factory and the farmers. The factory docked too much of the weight of the hog, and the farmers lacked confidence, for very good reasons, in the factory. The hog, like every other animal, would pay in proportion to the time and care given him, and, with the prices that should be obtained from the factory, would pay best of all.

Mr. Craig thought intelligence in feeding a most important consideration. He raised two litters per year; he boiled for both, but the winter pigs cost him more than the summer pigs. He had never heard of anyone feeding the way Mr. Crockett did, but believed more economy should be exercised in feeding. He considered turnips worthless to feed hogs. Young pigs should have more soft feed and less grain.

Some discussion arose as to the best breed of hogs, and *pros* and *cons* of each were taken up.

Mr. Rogers wished to convey the impression that hogs did not pay on a large scale. It did not pay to feed potatoes when worth 48c. a bushel. It was all right to feed a small amount of potatoes—unmerchantable ones that would otherwise go to waste.

On motion, a delegation, consisting of Messrs. Brown, Crosby, and Wage, was appointed to wait on Mr. Rattenbury, of the pork factory, to see if better relations could not be obtained between the farmers and the factory.

The evening meeting, at 7 p.m., was much larger. As there were a number of speakers, the time of each was limited to eighteen minutes.

J. R. Edwards was the first speaker. He said farmers should mingle more with each other. We farmers, as a rule, are too isolated. We should cultivate a friendly spirit, look after our interests in a body, and embrace our opportunities; meet much oftener, and discuss the different modes of farming. We are partially cut off from the rest of the world, but we loved our homes. A large number leave our shores annually, going to foreign lands and to the cities, where, they say, they make money three to six times as fast as here. We should endeavor to so look into the future as to view good things, and to educate our young men to stay at home, instead of educating them to go away from the farms, as they are doing at present. Here in this association we are crippled for want of funds. Generally speaking, cash is scarce with the farmers, but our Creator has given us an abundant supply of good things. We are robbing our farms of nitrogen by selling the raw products of the farm, and something should be done to stop it. I would like to discuss this matter of nitrogen. It is the all-important subject. The United States last year exported nitrogen in wheat alone to the value of \$21,723,582. Nitrogen is worth in the market \$300 a ton, and, at the price, is prohibitive to replenish.

W. H. Pethick, V.S., spoke of the prevalence of tuberculosis, and how the Governments of both the United States and Canada had used continued efforts to stamp it out. He intimated he was at their service at any time, free of cost, to test their herds.

Mr. Simpson read a paper entitled "A Few Observations for the Consideration of Farmers," in which he dealt at some length with the necessity of cheese inspection, and the crying need of the Dominion Government taking this matter of factory inspection more particularly into their hands. He also spoke of the great advantages of direct steamship communication with Great Britain now enjoyed. Mr. Dillon informed him that, in several particular orders he had received for cheese, a special request was made for Island cheese. This shows our cheese has taken a stand in the British markets, and we should continue to produce as good an article as possible, and to do this we require more rigid inspection. Many farmers show signs of improvement now who could not do so but for the introduction of dairying. We have sustained losses, in bad crops, this year, and but for dairying would feel them more keenly.

The meeting was thrown open for discussion in this paper. Mr. Craig was not aware that the inspectors had been dispensed with. The factories were not working as co-operatively as they might. There should be a better feeling existing among the factories, not trying to out do one another; friendly competition however, was all right. Mr. John Anderson favored rigid inspection by the Government, and such should be appointed on their merits solely. We are gaining ground on the English market for our cheese and butter, although we are yet behind that of Denmark.

Miss Jane M. Neill next graced the platform, and favored the audience with a well-rendered Scotch recitation.

Mr. Turner was pleased with the tone and ideas of the preceding speakers. He thought agricultural education was sadly neglected. Our schools did not as much as teach it. Some move should be made to remedy this. He instanced several European countries in support of his contention, places whose progress was owing to the education they had received. If our boys were properly educated they would not go to other countries, but would stay at home. He read an extract from ex-Governor Hoard's address at the Fort Worth meeting touching on this all-important subject of education.

Editor Cotton, of the *Examiner*, was pleased to note a marked improvement in the farming community. We are advancing, and the question was, what are we going to do to stult further advance? He considered education a most important factor. He also spoke of the great advantage now enjoyed of having direct communication with Great Britain and of the benefit to be derived from those Associations.

Mr. Crockett favored the audience with a recitation entitled the "Union Jack," which received prolonged applause.

Mr. O. Anderson deprecated the mischievous practice pursued in the past of growing oats and potatoes for sale. We were drawing too heavily on the soil, but he was happy to know that this mode of farming was being rapidly done away with.

Mr. Brown spoke of farming now compared with what it was fifty years ago. He had travelled over many parts, but had found no place like home. We had lessons of evil management in the past. We should now be more careful about our poultry, butter, cheese, bacon, etc. He had been told by Superintendent Dillon that some of our cheese realized poorer prices on account of the practice of leaving the whey in the cans for a length of time; this caused a germ to grow which lowered the price.

Mr. Thompson favored the audience with an amusing original poetic production.

Mr. Caruthers said there was something grand and noble in the tilling of the soil. He considered we had shipped 73 per cent. of our farms to England in the form of nitrogen in produce. How to replace that in the cheapest way was the all-absorbing problem to be confronted.

Mr. Joseph Rogers delivered a nice recitation.

Mr. McDonald thought the majority were now moving in the right direction, but required education. Doctors, lawyers, and merchants were all well educated. Why not the farmer as well?

Miss Stuart favored the audience with an excellent recitation. The singing of the National Anthem brought the meeting to a close.

(To be continued next issue.)

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## CORRESPONDENCE

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### Growing and Preserving Corn Fodder

To the Editor of FARMING:

I have read with interest many articles written by practical farmers and others, giving their methods and ideas of how they do certain work, on the farm, in the dairy and with stock, thus affording a valuable means for educating those who wish to avail themselves of the opportunity, and at so small an outlay. Whether anything I might write, or give as personal experience, would be any benefit to a brother farmer, I cannot say, but I feel it almost my duty to contribute my mite.

In FARMING of the 10th of January I saw an article on "Loss by Exposure of Corn Fodder." I have grown considerable of this kind of fodder for cows for several years, in fact, was the first to grow it in my neighborhood on a large scale.

I prefer fall-ploughed land for corn, as fertile as possible, well cultivated and then sown with a drill, allowing the teeth to work about three and one-half feet apart. I drag before corn is up, and after, and then start cultivation and go through once a week and as often as time and other work will allow. Cutting is done by hand and thrown in sheaves, leave two days to dry then bound with small stalks.

My method of putting up is the most important thing I wish to describe.

I have a lot of old hop poles which I use; any kind will do that are long enough. These poles are laid together on the ground, ends even, and wired about six feet from the big ends, then raised up and spread apart enough to make a strong brace. The corn is then stood up against those poles, going around to make as even a shock as possible. As many sheaves as desired can be placed in one

shock, one hundred or more. No binder is needed at the top, for in a few days they will settle in and make a complete thatch. The inside sheaves should be as straight-up as possible. No wind can blow it down, nor anything upset it. I haul the corn to the barn as desired, and run through cutter driven by a wind-mill, piling them up on the barn floor to warm up; sometimes throw water on the pile. I have found very little waste in the field by feeding in this way.

FRANK C. BOGART.

Napanee, Jan. 14th, 1899.

### Lucerne Alfalfa

To the Editor of FARMING:

If our farmers understood this clover they would use it more, and as a result would have more cheese and butter to sell. When all other pastures are dried up in the hot weather Lucerne and orchard grass thrive well. It is easy to raise, the same as other crops, seed is no dearer, and for hilly land or dry weather there is nothing so good. It will keep the hills from running down. I think Lucerne sod, after being down two or three years, is equal to a coat of manure. I had oats on Lucerne sod last year, sowed one and one-half bushel per acre of Siterian variety, and harvested sixty bushels in return; and corn does just as well. Part of the ten-acre field was timothy and red clover sod manured, and yet was not so good as the Lucerne sod. You could easily see the difference.

Hogs will eat Lucerne before red clover. The only trouble is that hogs and sheep if fed too close will kill it, but I never saw any difference with any other stock. Some will tell you that cattle bloat on it; so they will on red clover if let on it empty; but I never had any trouble with it. I turn in about four or five o'clock in the afternoon when the cattle are full and never take them off until it is eaten down.

If this will be of any use to my brother farmers they are welcome to it.

Yours, etc.,

ALBIN RAWLINGS.

Forest, Ont, Jan. 13, 1899.

### Cheese and Butter Association of Western Ontario

The thirty-second annual convention of the Western Cheese and Butter Association opened on Jan. 17th in the Opera house, Guelph, under very favorable circumstances. The weather was all that could be desired, and the attendance on the initial day was good. The attendance at all the sessions was also good, considering that the locality of Guelph is not a strictly dairy section. The programme was well carried out, with one or two exceptions, notably that of Dr. Saunders, Ottawa, who was unable to be present through illness. The American celebrities advertised were present and gave a good account of themselves. Another notable feature was the presence of the Dominion and Provincial Ministers of Agriculture. If we had any criticism to offer in regard to the programme we would say that there were too many addresses and not enough time allowed for discussion. It is in discussion where the most valuable points are usually brought out and at every gathering of this character ample time should be allowed for discussion.

The convention was opened by President Eagle. He referred to the holding of the convention at Guelph, and pointed out that one of the reasons for going there was that the delegates might have the privilege of visiting the Dairy School and the Ontario Agricultural College. The Guelph district was essentially a cattle-raising section, and it was not expected that the holding of the convention in the locality would induce anyone to give up that line of farming for dairying. More instructors were needed than the association could employ. Good men for such positions were hard to get. On this account he regretted Mr. Millar's retirement from the work of instructor.

#### DIRECTORS' REPORT.

This gave a *resumé* of the work of the year. The Board of 1898 had carried on the work on the same lines as laid down by the 1897 Board. This work was that of giving instruction to makers. The work of 1897 had been largely experimental; but the results for 1898 showed that the means adopted had been eminently successful. At the end of 1897 the association was in debt, and therefore only \$1,200 of the grant of 1898 could be appropriated for instruction and in-

spection purposes. This necessitated the reduction of the number of instructors in the cheese factories from three to two. The funds of the association were supplemented by charging the factories visited a fee. This fee was \$15 for three visits of one day's duration each. In 1897 the eastern and western associations had jointly employed one butter instructor. Last year a new arrangement was made and two instructors were employed, one by each association. Though recognizing the great value of instruction in the cheese factories and creameries, the Board had adopted the policy of only giving help to those who were willing to pay a fair share of the cost.

The secretary-treasurer's report showed the finances to be in a good, healthy condition. The receipts were \$5,113.73 and the expenditures \$4,518.68, leaving a balance of \$595.05.

#### INSTRUCTORS' WORK.

Instructor Millar, in presenting his eighth annual report, pointed out that the district over which he had control was too large, and urged the association to employ more instructors and make the divisions smaller. He visited thirty-three factories, and had to refuse a number of applications, as visits could not be made in a specified time. He began work on May 17th, and continued till the end of October. During this time he tested 3,032 samples of milk with the lactometer and 595 with the Babcock milk tester. The richest sample tested 6 per cent. and the poorest 1.6 per cent. Eight patrons were fined for tampering with milk supplied the factories. They all pleaded guilty and were fined from \$5 to \$20 with costs. Only two of the factories visited were paying for milk according to its quality. During the past few years a decided improvement had been noticed in the cleanliness of the factories, though there is still room for improvement. There was only one factory A1 from a sanitary point of view. The temperature in the curing-rooms varied from 60° to 88°. The quality of the cheese in many cases was not satisfactory. The makers seem as anxious to succeed as before in making fine cheese. This deterioration in quality is due to several causes; making the makers responsible for all losses, the low price of cheese causing the patrons to be careless, and the neglecting of the whey tanks and returning the sour whey in the cans. Referring to the dirty cans and bad flavored cheese, he saw some the worst he had ever seen at cheese factories.

Inspector Morrison visited forty-three factories in his district, giving from one to four visits each. Thirty-eight of these returned the whey to the patrons in the milk cans. Some of these factories keep the tanks clean, but at some of them the tanks are not cleaned from spring to fall. Elevated whey tanks should be used. He noticed great improvement in many of the making-rooms over the previous season. Many of them, however, had not proper drainage. Sanitary inspectors should be appointed to see that the factories are kept in a proper sanitary condition. The temperature in the curing-rooms ranged from 45° in the spring to 90° in the summer. These great variations could be remedied by the use of furnaces in cold weather and ice in summer. When ice is used the room should not be allowed to get warm before the ice is put in. Some of the makers, early in the season, were using too much starter and ripening the milk too much, while others were bandaging too soon. In a great many of the factories the patrons are to blame for a great many of the flavors that develop in the cheese after they are cured, by not straining the milk. He tested 3,382 samples of milk with the lactometer and 265 with the Babcock tester. The percentages of fat ranged from 1 per cent. to over 4 per cent. Five of the factories visited were paying for milk according to quality. Fourteen persons were fined for tampering with the milk supplied to the factories.

Instructor Struthers, who had charge of the summer creamery work, pointed out that only a few of the creameries took advantage of the arrangement to secure his services. He visited in all five creameries, and four out of these were in good condition. The fifth one was in great disorder when the visit was made. At all the creameries but two the drains were good; four were whitewashed throughout and four had excellent cold storage facilities, built on the government plan, registering 35°. He makes the rather startling statement that not more than 10 per cent. of the butter manufactured in the western part of the province would class as No. 1 creamery. This inferiority is ascribed in a large measure to improper methods of applying the salt, which is something that every butter-maker should be able to remedy.

#### THE PRESENT CONDITION OF DAIRYING.

In addressing the convention on these topics Mr. A. F. MacLaren, M.P., Stratford, Ont., referred to the present as being the accepted time. Many makers did not carry out the instructions received at the dairy schools. They lapsed too quickly into their old slovenly ways. There should be a better understanding between the patrons and the makers. In visiting several factories last season he had found them swarming with flies. To prevent this screens should be used on both doors and windows. Whey tanks should be kept thoroughly clean. If makers were better paid they would be able to engage more help to keep their factories clean. The trouble in connection with buying and selling cheese should be remedied, and, above all, the whole standard of the business should be raised.

#### BARNYARD MANURE.

This formed the subject of a very practical address, by Professor F. T. Shutt, Experimental Farm, Ottawa. He gave the results of some experiments, extending over two years, connected with rotting manure, protected and exposed conditions. Four tons of horse manure were put into a building, while four tons of cow manure, of practically the same condition and strength, were placed in the open, where it was



exposed to the rain, etc., but protected from leakage. At the beginning both lots were analyzed. These lots were kept examined and compared at the end of three, six, nine and twelve months, respectively. The actual losses in the value of the manure at the end of three months were: Protected, 20 cents; exposed, 64 cents. At the end of six months: Protected, 27 cents; exposed, 80 cents. At the end of nine months: Protected, 36 cents; exposed, 90 cents. And at the end of twelve months: Protected, 36 cents; exposed, 95 cents per ton. The value of the fresh manure was estimated at \$2.65. Some of the conclusions reached were: No fermentation without loss in organic matter and nitrogen; much less loss of these when protected than when exposed; no phosphatic acid or potash lost when protected, but considerable by exposure through leaching. There is no advantage in rotting manure longer than three months. On the ordinary farm there is a loss of fully one-half the plant food when rotted over this time. Rotting manure makes it better for plant food and for mixing in the soil to form humus. Nitrogen in fresh manure is not available for plant food till it is changed into nitrates or ammonia. More than half the phosphoric acid, and fully 90 per cent. of the potash, is available in fresh manure.

#### WELCOMES.

These were extended to the association by Alderman Drew, on behalf of the city of Guelph, and Dr. Mills, on behalf of the Ontario Agricultural College. Dr. Mills, in his address, pointed out that the college controlled the dairy schools in other parts of the province. The quality of our dairy products should be kept up, and both the quality and quantity of the creamery butter can be improved. Every maker in the province should take a course at the Dairy School, and those who attend should stay longer. No maker but the best should be employed and better wages should be paid.

#### STATUS AND WORK OF THE EXPERIMENT STATIONS

This formed the subject of an interesting address by Prof. W. H. Jordan, director of the New York State Experiment Station. The foundation of the United States stations was laid in 1862, and in 1887 Congress made grants to the State stations. There are now 54 stations in the United States, with over 600 experimenters, which issue 430 bulletins every year. The great change that had taken place in agriculture was due to the work of the experiment stations, where certain fundamental principles were established after the severest possible examination. Science is complete experience, but experience got from practice is not complete. Experiment stations are now thinking up instead of thinking from a superstructure down. The work of the stations should be the study of fundamental or scientific principles. Investigators should not have too much to do, and as much as possible should be free from teaching institute work, etc. At present too elaborate reports of the work were made. At the New York Station a station editor is employed to prepare the work in a popular and concise form for the farmer.

#### ONTARIO DAIRYING.

This was the subject of a short address by C. C. James, Deputy Minister of Agriculture. The value of the cheese production in 1897 in Ontario was \$3,000,000 more than in 1896. 50,000,000 pounds of dairy butter is being made in Ontario. There are now 200 creameries, and it would take 2,000 to convert all the milk now made into dairy butter into creamery butter for export. American competition must be met.

#### CANADIAN DAIRY PRODUCTS IN ENGLAND.

The Hon. Sydney Fisher, Dominion Minister of Agriculture, in addressing the convention, referred to his visit to Great Britain, where for the first time he had found criticism of Canadian cheese. A great deal of the English cheese is better than the Canadian, which Canadian makers must reach up to if they expected to hold the market they now have. Cheese should be properly cured before it left the factory, and it may become a necessity to have cold storage in transit for cheese as well as butter. He had interviewed several vessel owners in reference to securing better ventilation in the holds of vessels carrying our products. Our butter was not always as good as it is to-day. Five years ago Canadian creamery butter sold for 20 s. below Danish and 10 s. below Australian. Now it is only 5 s. to 6 s. below Danish and sometimes equal to it, and 10 s. to 12 s. above Australian. This improvement is due largely to the cold storage facilities provided for the transportation. No room for expansion in the cheese trade. The English laboring man is better off, and is changing from cheese to bacon for his staple article of food.

#### BACTERIAL INFECTION OF CHEESE.

Dr. Connell, Kingston, Ont., and Mr. F. C. Harrison, bacteriologist, Guelph, gave a couple of practical addresses on this subject. The former took up the question along the same lines as at the Kingston meeting, a full report of which was given in last week's issue. He referred to a factory in Peterboro' county that had trouble in this way, due to a badly prepared starter. When the maker ceased using the starter the trouble ceased. Makers should make a fresh starter frequently, and be very careful that the sample of milk from which it was made was the best that could be had. Another factory had a double floor in the making room. The second floor decayed, and between them became a putrid mass of germ life. Myriads of flies were in the factory, which served to carry the germs from this putrid mass to the

milk and curd. The same organisms were found in the cheese that were in the slime between the floors. Bacterial life will not live in coloring. If there are other taints in the coloring pour a little in water and smell it. The cheese referred to in Peterboro' county were close, smooth, and to all appearance right. After awhile they began to harden, get rough, cut in color and develop acid, but different from sour cheese. After three weeks they began to run a briny fluid. Mr. Harrison took up the subject as it related to bacterial infection from the water used in cheesemaking, and gave some interesting lantern illustrations on canvas showing the form of various species of bacteria. Bacteria from manure and excreta are very injurious to cheese, causing gassy curds. There are also germs which produce flavors without gas. In seventy samples of Canadian cheese examined had found bacterial life present in greater or less quantities. As many as 200,000 were found in a gram of cheese. The quantity will increase and grow less at intervals, and after a time gradually die out. To prevent undesirable forms from getting into the cheese cleanliness should be practised in every particular, and the water used in diluting the rennet and washing the vats should be pure. Some makers had difficulty in getting milk to thicken. This is usually due to alkali germs. In one instance too much lime in the well-water had caused the trouble. Will examine all samples of water sent to the college providing express charges are prepaid and directions for sending it followed.

#### CURING-ROOMS AND CURING CHEESE.

In discussing this subject Professor Deane gave a description of the sub-earth duct at the dairy school curing-room. The duct is about 90 feet long, 6 feet deep at one end and 6½ feet deep at the other to allow for drainage. In the trench were placed six rows of six-inch drain tile. Three rows were placed in the bottom and three rows directly on top of these, breaking the joints four inches. On the top of the tile was placed eight or ten inches of shavings, and then the dirt was filled in. At each end of the duct was placed a curb about 3 feet square. These curbs fit over the top of the tile in such a manner as to prevent the dirt from entering the end of the tiles. At the inlet end of the duct is a galvanized iron pipe 30 feet high and 14 inches in diameter. On the top of the pipe is a hood or cow, which turns towards the wind at all times. A constant stream of air enters the pipe, passes through the tile, and on its way to the curing-room becomes cooled about 20 degrees. The inlet of air to the curing-room is regulated by means of slides. The warm air is taken from the room through a ventilating shaft, which passes from the ceiling to the roof, and there connects with a galvanized iron pipe which is 12 inches in diameter and 15 feet in height from the roof. The top of the pipe is covered with a cap to prevent rain entering the room. The inlet for the air should be at one side of the room and the outlet at the opposite side, so as to change all the air in the room. The total cost of the duct was about \$65 for a small room. For an ordinary curing-room the duct should be 150 to 200 feet long and from 8 to 12 feet deep, if at all possible, as this furnishes a supply of cooler air than the shorter and shallower duct. The curing-room should be insulated by lining the room with two-ply of building paper, then nail on the two-inch strips, and then a lining of matched lumber. The floor, walls and ceilings should all be lined. The results of experiments conducted at the dairy school show that there is a marked improvement in the quality of the cheese cured at an even temperature of 60 to 65 degrees. Assuming that an increased value of the cheese is obtained of ¼ of a cent by proper curing methods, which is not out of the way, the value of the make of a 100-ton factory would be increased by \$500. The loss by shrinkage in curing cheese at a high temperature was over 1 per cent. as compared with a low temperature. This, on a 100-ton factory, would be 2,000 lbs., which at 8 cents would be \$160. It would, therefore, pay every factory in dollars and cents to have the curing-rooms fitted up so that the temperature could be controlled.

#### FERDING STANDARDS.

Prof. Jordan, in taking up this subject, pointed out that humanity is after a fixed rule. If we take cattle-feeding as an instance, there are two questions constantly being asked: The best ration for a dairy cow, and the relative value of cornmeal and cotton seed meal. It was not possible to positively determine the relative value of different foods, as there was no way in which the value of the separate constituents of the foods could be determined, as in the case of manures. The proteids, carbohydrates and fats in foods cannot be valued in a commercial way. The German values, fixed some years ago, produce absurd results. The function of food is to produce heat, fat, muscle, etc.; but the value of the heat function, the fat function, or the muscle function, cannot be figured out in dollars and cents. The digestibility of the food is the only way of attaching a value. If we compare milk and beef we find that five cents' worth of the former will give as much nutrition as fifteen cents of the latter. Milk is the only food fed to animals that is wholly digested. Some foods are more valuable than others, and the comparative amount of digestibility is the only way of valuing a food. Every stockfeeder should have a table showing the digestibility of foods. The feeder must know what his needs are and buy his feed accordingly. In making milk certain kinds of food are needed, and may be got by balancing up the foods of the farm with clover, alfalfa, and buying the nitrogenous foods, such as bran. In fattening steers a highly nitrogenous food will do good. The ordinary mixtures of the farm will answer the purpose well if the animal is induced to eat liberally of them.

#### BUTTER-MAKING.

A paper on this subject was read by Arch. Smith, butter instructor. To make good butter a good factory and surroundings, good water,

good milk, and a maker who thoroughly understands his business are necessary. A tempering vat should be used in preparing the cream. Heating the milk increases the capacity of the separator. 80° to 85° in summer, and 90° to 95° in winter are good temperatures for separating it. A good starter is indispensable. It should not be necessary to pasteurize cream. Cream should contain from 30 to 35 per cent. of fat to churn readily. Cream should be cooled quickly when it has enough acid. Churn at a temperature that will bring butter to wheat grains in 45 minutes. The temperature should be a little higher in cream gathering creameries. If a little salt is used in water for washing it will help to carry off the small particles of casein in the butter. The room for working in should be warmer than the butter.

#### PASTEURIZING AND PURE CULTURES.

Mr. Harrison showed a number of lantern slides, showing the extent of the butter industry in several countries. The Danish butter was uniform in color, flavor, saltiness, and in price, and 96 per cent. of it was made from pasteurized milk or cream, and then inoculated with a pure culture which gives the desired flavor. 94 per cent. of the germ life is destroyed by pasteurizing. Pure cultures should be able to give to butter a good aroma, a good flavor, and a good keeping quality. To introduce pure cultures into Ontario creameries he recommended that a few creameries be selected and pure cultures sent to those from the college regularly, the makers to follow the directions sent out.

#### BUTTER FLAVORS AND STARTERS.

This formed the subject of an interesting address by Prof. G. S. McKay, of Iowa. The Americans keep all their best butter for the home trade and export the secondary grades. Results of tests show that the United States can make good butter. In scoring butter the English method is lower than in the United States. Flavor equals one-half in scoring. At certain seasons there is not much difficulty in getting good flavors. Feed affects flavor, but fermentation has a greater effect. Certain foods such as leeks, turnips, etc., have a decided effect on flavor unless the milk is pasteurized. Ripening cream produces flavor. Improper ripening is another cause of bad flavor. In good cream there is 92 to 95 per cent. of acid germs. Temperature at which cream is ripened is not an important factor; 60° to 65° in summer and 70° to 75° in winter are about right. The acidity of the cream is the important point. The development of acid is affected by the thickness of the cream. Twenty to 30 per cent. cream is about right in winter for good butter. From 15 to 20 per cent. starter should be used. When ready cream will have a smooth granular appearance. It may have this when not ripe. It should have a sharp acid test when ripe. In some experiments he carried on the results from pasteurized and unpasteurized cream were the same. Pasteurizing does not affect the body of the butter, but pasteurized cream will keep much longer than raw cream.

#### PRESERVATIVES.

In the discussion which followed, the question of the use of preservatives came up. Mr. H. A. Hodgson, Montreal, stated that he had received an order from England for 150 packages of butter containing no salt, but  $\frac{1}{2}$  of 1 per cent. of preservatives. These had been shipped and the butter was highly commended, and he thought that a good trade in this could be worked up if preservatives could be used. Prof. Robertson stated that preservatives were common in England and Australia. The use of 1 per cent. of preservatives is allowable under the English law, and is not an adulteration.  $\frac{1}{4}$  of 1 per cent. of preservatives would help to preserve the butter, or 1-25 of an oz. of preservatives per pound of butter and  $\frac{1}{2}$  an oz. of salt. Turnips should not be fed to milk cows whose milk was supplied to a creamery or cheese factory. They form good food for young stock or fattening cattle.

#### THE FARMER OF THE FUTURE.

This formed the subject of an exceedingly forceful and brilliant address by Dr. Fraidshear, president of the Iowa State Agricultural College. The farmer of the future would take his place as a leader among men, as the doctor, lawyer, etc., does at the present time. To do this he must be educated. Farming of the future is going to turn on small percentages, and a more thorough understanding of the science of agriculture is necessary. The farmer must have more confidence in himself and in others.

#### THE CHEESE TRADE IN RELATION TO AGRICULTURE.

Professor Robertson in handling this question said that it was possible to make other branches of agriculture equally as successful as cheese. The success attained by the cheese industry was due to the diffusion of exact knowledge followed by the application of a system, excellent organization, and having every factory a sort of an illustration station. Keen market contact made the cheese trade grow rapidly. In the early days a cheese buyer was a maker and therefore an educator. Market contact is not so close now. English buyers complain of Canadian cheese not being so good as it used to be. He thought the quality was as good as formerly, but that the English consumer had been getting better cheese from all quarters, and therefore the standard of Canadian cheese was not as high as it used to be. The consumer wants a milder cheese. To get this the temperature of the curing-room must be kept under complete control. His department intended to establish two illustration curing-rooms and to cure half of the same lot of cheese in the ordinary way and half under the most

improved plan. Proper curing facilities in the average factory would save \$450 the first year and \$250 a year afterwards. In Canada 45 out of 100 are farmers, but still the importance of agriculture is not recognized. The wealth and prosperity of a country depend upon the intelligence, skill, industry, frugality and fairness of its people. What is wanted is not so much knowledge of how to explain things, but of how to do things. There should be a better knowledge of the trade of agriculture, and then the farmer will not be looked down upon. The farmer should know the soil and what to sell. One ton of hay will carry off more nutriment from the soil than 87 tons of butter. There are 300,000,000 acres of tillable land in Canada but only 30,000,000 tilled.

#### CREAMING MILK.

Miss Laura Rose, Instructor in the Home Dairy at the College, gave an interesting talk on this subject, explaining the nature of milk and what its component parts were used for. Large fat globules come to the top quicker than small ones. Two methods of creaming: the gravitation or natural, and the centrifugal or mechanical method. Of the former there were the shallow pan and deep setting plans. As a rule, the shallow pan way left at least 5-10 of 1 per cent. of the cream in the skim-milk. To skim a shallow pan take a thin knife and run it round inside the pan, separating the layer of cream from the edge. Then pour the cream off instead of taking it off with a skimmer. Too much surface is exposed in the shallow pan method, and the air should be pure. Set for from 24 to 36 hours in summer and about 48 hours in winter, and skim before coagulation takes place. Ice is necessary in the deep-setting method, and should be kept in the water all the time during setting. Set for 12 hours in summer and 24 hours in winter. Milk should be set as soon as taken from the cow. Cream should be taken off with a funnel-shape skimmer. Get the cream with as little skim-milk as possible. The cream separate will take more cream from the milk than the setting plan. Every dairyman with 8 cows or over should have a separator.

During the convention short, pointed addresses were delivered by the Hon. John Dryden, A. W. Campbell, Provincial Road Instructor, D. Derbyshire, President Eastern Dairy Association, E. L. Alderhold, Wisconsin, and others. On the morning of the third day no session was held and the delegates visited the Agricultural College and Dairy School, where a profitable time was spent. During the convention the Hon. Sydney Fisher, Dominion Minister of Agriculture, presented the gold medals given by the Windsor Salt Co. for the best exhibit of cheese at the Industrial and Western Fairs in 1898. The successful winners who were present to receive these beautiful and valuable gifts were A. F. Clark, Poole, Ont., and Murdoch Morrison, Harriston, Ont., the former receiving the Industrial and the latter the Western Fair medal.

#### DIRECTORS FOR 1899.

Hon. president, Hon. Thomas Ballantyne, Stratford; president, Harold Eagle, Attercliffe Station; first vice-president, R. M. Ballantyne, Stratford; second vice-president, Aaron Wenger, Ayton; third vice-president, James Connolly, Porter Hill. Directors, John Prain, Harriston; J. N. Paget, Canboro'; Robt. Johnston, Bright; G. H. Barr, Sebringville; A. F. MacLaren, M.P., Stratford; J. A. James, Nitestown; Geo. E. Goodhand, Milverton. Auditors, J. C. Hegler, Ingersoll; J. A. Nelles, London. Representatives to the Industrial Exhibition, Toronto, H. Eagle and A. F. MacLaren. Representatives to the Western Exhibition, London, T. B. Millar, London; S. G. Kitcher, St. George.

A resolution of condolence with the family of the late John Robertson, an old member of the association was passed. A resolution was also adopted in favor of joint action by the directors of the Eastern and Western associations to secure better railway facilities for those attending the conventions. During the meeting the directors of the Western association, in company with the president of the Eastern association, waited upon the Ontario Minister of Agriculture and asked for an increased grant to carry on the work of instruction.

## Ayrshire Breeders' Meeting

A meeting of the Directors of the Ayrshire Breeders' Association was held in the Albion Hotel on Tuesday, Jan. 17th, at 2 p.m. The minutes of business transacted since amalgamation were read by the secretary and was followed by a lengthy and careful discussion of the report by the Directors present. It was unanimously carried that the Board of Directors, having heard the report of the committee appointed at the last annual meeting to act in the matter of amalgamation, recommend that the report be received and adopted.

## A Good Market Report

BELLEVILLE, ONT., Jan. 11th, 1899.

SIR,—Find enclosed \$1 to continue my subscription for FARMING for 1899. I find it a great help to me with its valuable information and good market review and forecasts.

Yours truly,

J. T. SARGENT, Box 773, Belleville, Ont.

**QUESTIONS AND ANSWERS.**

**HOW TO APPLY PHOSPHATES.**

Forestnook Farm, Jan. 13th.

To the Editor of FARMING:

In your issue of Jan. 3rd I see some one asks "Why butter won't come."

I cannot tell what the cause is, but think I can tell what is of more practical use, how to remove the cause and get the butter.

Heat the milk, as soon as it is brought from the barn, to about 150°, then cool and cream in the usual way. I do not know why this removes the difficulty, but I know it does it.

Do not waste time heating cream alone as that is no use. All the milk must be heated, and, of course, it must be done in some sort of a double boiler, and stirred frequently while heating.

I have a field pretty well run out. I want to raise a crop of oats off it and seed to clover, using phosphate powder for fertilizer. What is the best manner of applying the phosphate? The soil is gravelly.

Yours truly,  
JOHN McNAB.

Smith's Falls, Ont.

Pasteurizing the milk or heating it to about 150° would have the effect of destroying about 90 per cent. of the germs to be found in milk, and if the cause of the butter not coming is due to some injurious bacteria in the milk this method would certainly check their development. In heating milk to this temperature care should be taken to cool the milk as quickly as possible after the heating is done.

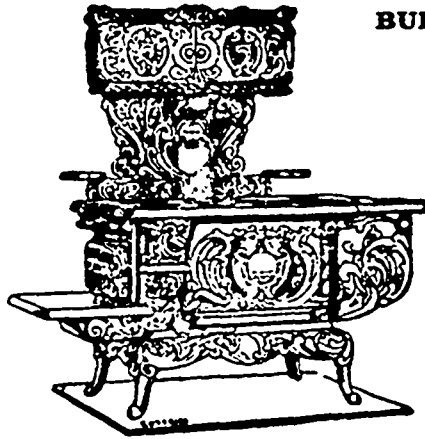
The best time to apply phosphate is in the fall of the year. It is better to apply it to the land after it is plowed, or between plowing and harrowing. If applied to the land before plowing it is apt to get too deep in the soil. All phosphates should be thoroughly mixed with the soil, and to get them thoroughly mixed the soil should be made fine and pulverized. In a gravelly soil there is much more need to apply the phosphate after plowing.

**INTENSIVE CULTURE IN THE GARDEN.**

In my market garden I have practised some methods of intensive cultivation, a description of which may interest your readers. Every market gardener should have an experiment plot in connection with the market garden, that he may first experiment with new methods of culture, or test new varieties of fruits and vegetables, before he uses them extensively. Such an experiment plot has proved very valuable to me, and one of the good things which is the result of several years of experimenting on a small plot is my new method of celery culture. I have before described this method in articles written for publication, but I think it will be new to most of the readers of this journal, and as I believe it to be the latest and best plan by which a good article can be produced at a minimum cost, thus

# SOUVENIRS

## Are Perfect Stoves



BUILT

Upon the  
Granite Rocks  
of . . . .

**EXPERIENCE.**

**For Fifty-five Years** our stoves have been very largely used scarcely a hamlet in this broad Dominion but traffics in our wares. Unequaled experience, large facilities, and special opportunities make great results possible. We claim for

### SOUVENIR RANGES

that they have reached perfection, that is, so far as perfection is known in the science and art of stove-building of to day. The **AERATED OVEN** is only one of their many special features.

## THE GURNEY-TILDEN CO., LIMITED

HAMILTON, ONT.

AGENCIES—Toronto, Montreal, Winnipeg.

USE

## Ulrich's Ensilage Corn

MAMMOTH WHITE  
GIANT PROLIFIC  
YELLOW DENT  
IMPROVED LEAMING

### E. R. Ulrich & Sons

SPRINGFIELD, ILL.

Ask your dealer for samples and testimonials

HIGHEST  
TYPE OF  
BACON  
HOODS . . .

## Oak Lodge Herd of Large Yorkshires

The Largest Herd of Pure-Bred Yorkshires in America.

This herd has won the best prizes offered for the breed during the last ten years. Only one breed kept, but the choicest of its kind. Three imported stock boars and several sows that have all been winners at the largest shows in England, also winners at prominent Canadian and United States shows. Pigs of all ages for sale.

J. E. BRETHOUR, Barford, Ont.

## A FIRST-CLASS INCUBATOR

For Sale at a bargain Capacity,  
100 or 200 eggs as desired.

Apply to . . . .

### THE BRYANT PRESS

44-46 Richmond St. W.

Toronto, Ont.

## TOLTON'S

# No. 1 Double Root Cutter



### POINTS OF MERIT

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

## The Only Double Root Cutter Manufactured

Fitted with Roller Bearings, Steel Shafting and all that is latest and best in principle, material and construction.

**TOLTON BROS**

**Guelph**

securing the largest profit to the grower, I will describe it briefly as follows:

I first make the soil very rich, using two tons or more stable manure per acre; then, when the soil is pulverized very fine, I set early in May plants of the white plume and golden self-blanching varieties in rows, as follows: two rows are set one foot apart, with the plants six inches apart in the row, then I leave a space of eighteen inches and set two more rows in the same way, thus making alternate spaces between the rows of celery twelve and eighteen inches wide. When cultivating the celery, I have sometimes cultivated the eighteen inch space with a horse and Planet Jr. small tooth cultivator narrowed to twelve inches, and then finished the work with hand cultivators, doing the most of it with the wheel-hoe. When the plants were twelve to eighteen inches high, I set boards alongside the double rows, so that the two rows of celery which were twelve inches apart were between the boards. The boards are kept well apart, and held in place by driving stakes on both sides. The eighteen-inch, or vacant space was mulched with manure or other suitable material at hand, then water was applied over the mulch with the hose. The celery soon grew above the boards—which were twelve to sixteen inches wide—the boards were then crowded closer together to further darken the enclosed space between, which completed the blanching in a few days. The celery grew more than two feet high, and because of the rapid growth was very crisp and tender. From one plot of about one-tenth of an acre I received nearly \$200 for the celery, which was sold in my village at an average price of three cents per bunch.—*From Vick's Magazine for December.*

**GET RID OF FILTHY HOG-PENS.**

Whoever would raise hogs without disease (and this is necessary to obtain the highest profit) must get rid of the notion that the hog is naturally a filthy animal; that filth is less distasteful and unhealthful to him than to the steer or horse, and that it is impossible because of the nature of the animal to surround the hog with sanitary conditions. Filth is a prolific source of disease among all animals; and because the hog is brought into contact with the most filth there is the most disease among swine. Filth opposes the health and thrift of swine just as it opposes the health of horse or man. The first step in growing hogs without disease is to keep filth away from them, to give them clean food, clean drink, clean quarters, clean shelter.

Wheat bran is one of the best and cheapest foods for chickens, and eminently healthful. More bran and less corn would improve almost any flock. A richer food is bran and chops mixed, but, where whole corn is fed at evening, bran and oats mixed and fed wet is better for the morning meal.

**Griffiths' Veterinary  
...Menthol Liniment**

A Veterinary Medicine Chest in Itself  
and the most Useful Home Remedy  
for Horses and Cattle.



IT CURES

Strains, Curb, Chapped Hocks, Wind Galls, Splints, Strained Tendons, Rheumatism, Over Reaches, Coughs, Colds, Sore Throat, Founder Lameness, or any Soreness, Swelling, or Inflammation.

Griffiths' Menthol Liniment is endorsed by the highest live-stock authorities as the greatest of external applications. It never blisters or removes the hair; should be in every home.

Sold by Druggists everywhere—  
**25 and 75 Cents**

**The GRIFFITHS AND MACPHERSON CO.**  
SOLE PROPRIETORS  
TORONTO and VANCOUVER, B.C.

**...FOR SALE...**

**8 SCOTCH SHORTHORN BULLS**

From 10 to 18 months old. 1 BULL 2 years old, bred by O. & W. E. Watt, Salem. Also a number of

**COWS AND HEIFERS**

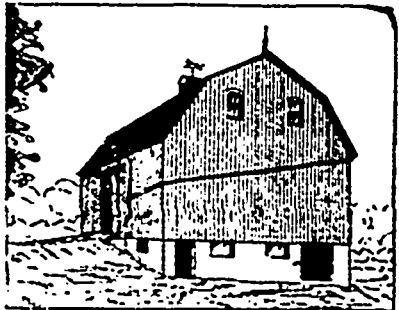
**DAVID MILNE,** - - - Ethel, Ont.

Established 1841.

Work done with

# Thorold Cement

Speaks for Itself.  
58 YEARS IN USE.



**BARN OF WM. PATTON, SOUTH CAYUGA, ONT.**  
Size of Basement Walls 36 x 60 x 9 feet. Built with Thorold Cement.

It is with pleasure that I testify to the good qualities of your Thorold Cement for building purposes. During the past summer I have built a barn 36x60 feet, with basement walls 9 feet high, and with cistern under driveway 8 ft. x 9 ft. by 7 ft. high. I also put concrete floors throughout, for cow stalls as well as horse stalls.

I consider both wall and floors to be much better and cheaper than if they were built of any other material.

Sincerely yours,  
**WILLIAM PATTON.**  
Dunnville, Haldimand Co.  
Nov. 1, 1898.

**Estate of Jno. Battle** Thorold Ont.  
Mention FARMING.

# FREE! For a Few Hours' Work.

We give these beautiful Premiums for selling our gold-topped, enamel-backed **LEVER COLLAR BUTTONS** at 10 cts each. **NO MONEY REQUIRED, you run no risk.** Write and we forward the buttons, postpaid, and our prize list, which contains many articles besides those shown here, such as Magic Lanterns, Tool Sets, Work Boxes, Manicure Sets, Motors, Printing Presses, Fountain Pens, Sterling Silver and Gold Jewellery, etc., etc.



**Gold Ring for 2 doz. Jewellery, etc., etc.**  
Sell the buttons, return our money, and we send your premiums promptly and **FREE OF ALL CHARGES.** Liberal Commission if Preferred. Our Boy's Watch is of American make, handsome, durable and reliable. Our Lady's Watch is a little gem, Swiss made, dainty and accurate. The **Daisy Air Rifle** and **Boker's Skates** With 5 Doz. speak for themselves. Our Cameras are of latest model, warranted for time or lightning exposures. In fact every article we offer is thoroughly reliable, as we find it to our best interest to handle only what we can guarantee.

**Unsold Buttons Returnable** at Mention this paper when writing and the price you want.

**Lever Button Co.**  
TORONTO, ONT.  
With every Watch we send a **WRITTEN GUARANTEE** to Repair or Replace. Good for one year.

**THE HOME MONEY MAKER**

# HOME WORK.

We want the services of a number of families to do knitting for us at home, whole or spare time. We furnish \$25 machine and supply the yarn free, and pay for the work as sent in.

Distance no hindrance. \$7 to \$10 per week made according to time devoted to the work. Write at once.

Name references.

**CO-OPERATIVE KNITTING CO.**  
TORONTO, ONT.



**BOOKS AND BULLETINS RECEIVED.**

Annual Report of the Canadian Holstein-Friesian Association, including Volume III. of the Holstein-Friesian Herd Book. Mr. G. W. Clemons, St. George, Ont., is secretary of the association.

Fifteenth Annual Report of the Agricultural Experiment Station, University of Wisconsin

1899 Almanac of the London *Live Stock Journal*, profusely illustrated, and containing special articles on live stock husbandry, including a breeders' table. Price, one shilling.

The *Scottish Farmer* Album for 1899, containing portraits of the leading prize-winners of 1898.

**SUCCESSFUL INSTITUTE MEETINGS.**

We are pleased to learn that Mr. John I. Hobson, of Guelph, and W. C. Shrearer, of Bright, have conducted very successful institute meetings in West Northumberland, West Hastings and Prince Edward county during the past two weeks. The meetings have been largely attended, and interesting and profitable discussions have invariably taken place on all the subjects brought up by the speakers.

**CANADA'S GREAT EXPOSITION AND INDUSTRIAL FAIR.**

The twenty-first annual exposition and fair of the Industrial Exhibition Association of Toronto will be held at Toronto from August 28th to Sept. 9th, 1899. The motto adopted for this year is, "A greater than has ever been," and there is not the least doubt that the management will leave nothing undone to make the exhibition for this the last year of this century one of the greatest events of the kind in the history of the Dominion.

England pays Denmark more than \$20,000,000 annually for butter. Having educated her people to become expert butter-makers through her experiment stations and dairy schools, Denmark next undertook experiments in feeding pigs and the curing of bacon and other pork products. Since 1880 more than \$50,000 was expended in this one line of effort, and the best scientific talent of the country was employed. Until Professor Henry's work on "Feeds and Feeding" appeared, these extensive and invaluable experiments were not available to our people because they were printed in the Danish language. In his book on Feeds and Feeding Prof. Henry has devoted a whole chapter to the Danish pig-feeding experiments.

**Publishers' Desk.**

**Sewing Machines.**—We call attention to the advertisement of Messrs. Bailey, Donaldson & Co., 7 St. Peter street, Montreal, who are offering high grade sewing machines at manufacturers' prices. If you want a sewing machine it will pay you to send for a copy of their catalogue.

**Fur Coats.**—Have you ever enjoyed the luxury of a really good fur coat? If so, you will never use any other kind for a top coat in winter. It is by far the cheapest coat you can buy, for with any sort of ordinary care it will last a lifetime, and for real solid comfort there is nothing to approach it. As a preventive of grippe, rheumatism and kindred diseases it is better than all the remedies in the British Pharmacopœia and the United States Dispensatory combined. This year the prices of such coats are lower than they have been for years, and there is no place where you can get better value for your money than at the store of Messrs. W. & D. Dineen, 140 Yonge street, Toronto. This firm have been in business in Toronto for fifty years and have a continental reputation as a first-class fur house. You can therefore rely on getting just what they promise you with ample satisfaction and courteous treatment every time.

**Famous Machines.**—The claim made by the Deering Harvester Company in their advertisement that theirs are the machines which "have made America famous" contains more of truth, perhaps, than the casual observer might think possible. But those whose travels have led them to parts of the globe

**"That Tired Feeling"**

Is just as common and just as reasonable in horses as it is in men. When their blood is impoverished their appetite and energy leave them—their work feels twice as hard.

**Dick's Blood Purifier**

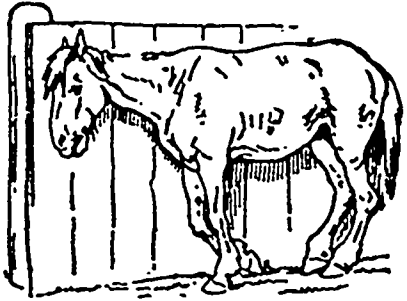
restores this lost vitality—The food is enjoyed—Every particle is digested.—The hide frees itself. Bots and kindred worms are destroyed and the horse thrives.

50 Cents a Package.

Trial Size, 25 Cents.

LEEMING, MILES & CO. Montreal, Agents.

DICK & CO., Proprietors.



where the products of the field and farm, and the best means of harvesting and marketing them, are of greater interest than politics and the progress of nations, can appreciate the statement. In such places the introduction of the Deering machines has been infinitely more important to the people than the war with Spain, the question of territorial expansion, or of an Anglo-American alliance, and the fame of America as a great manufacturing country has been increased thereby. Wherever harvesting machinery is used the "Deering" machines are famous, and some of that fame attaches itself to the country from which they come

**The Wooden Hen.**—This is not the hen of uncertain equilibrium, the "Noah's Ark" of our infancy contained, which though a

wonderful bird in many ways could not hatch a chicken. This is a still more remarkable "fowl," for it will double discount the largest



and most persistent "hiddy" in hatching chickens, and is accompanied by an "Aunt" which will bring them up with care after they are hatched. It is the invention of Mr.

**WIRE FENCE**  
**\$8 to \$15 per 100 yds.**  
 to make your own fence of Galvanized Iron Steel Spring Wire, 22 inches high, at 25 Cts. per Rod. \$100 buys wire for 100 rods. Agents Wanted. Catalogue Free. **CARTER** Wire Fence Mach. Co., Box 1, Mt. Sterling, O.  
 No duty on fence wire. S. CROUCH, Ridgeway, Ont. General Agent for Canada.

**NORTH BRUCE HERD**  
**Large White Yorkshires**

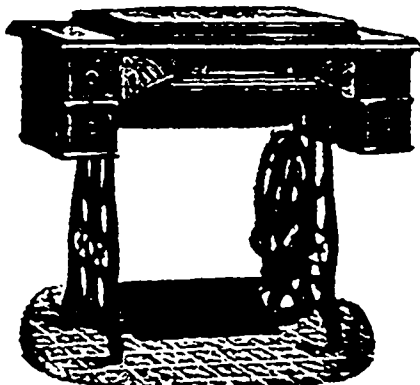
Boars fit for service and young stock of both sexes from eight weeks to six months old for sale.



Write for prices. **WM. HOWE, - - North Bruce, Ont.**

**"SEAMSTRESS" AND "EXPERT"**  
**High-Grade Sewing Machines at Factory Prices**

Equal to any Machine made in every respect, regardless of name or price



Latest improvements, high arm, long self-threading shuttle, automatic bobbin-winder, steel attachments. ALL STYLES. OAK OR WALNUT FINISH. Why spend from \$40 to \$80 on a machine when you can buy as good a machine at ever was made for half the money? Write for catalogue and prices.

**THE BAILEY DONALDSON CO.**  
 1 ST. PETER STREET  
 Department "F." MONTREAL

**Good Butter Making**

Do you want to make your churning safe, profitable? And easy, too? Do you want to find a quick market for your butter?

Then try WINDSOR SALT—the salt that is pure and dissolves so easily. It has no bitter taste—successful buttermakers recommend it, and they ought to know.

Progressive Grocers Sell

**Windsor Salt**

The Windsor Salt Co. Limited, Windsor, Ont.

Geo. H. Stahl, and is modelled after the famous "Excelsior" incubator. It takes up no more room than a good-sized hen and holds 50 eggs—in fact, is a complete incubator with automatic regulator to control the temperature and all the other appliances necessary for the perfect accomplishment of its purposes. The cost of this machine with the "Auntie" brooder is such as to make it available to anyone desirous of learning the mysteries of egg incubation by steam. Those interested should write to Mr. Geo. H. Stahl, Quincey, Ill., for his illustrated descriptive catalogue of the "biggest little thing on earth," and in doing so kindly mention FARMING.

**The Windsor Disc Harrow.**—The advertisement of the Frost & Wood Co., Limited, of Smith's Falls, Ont., occupies the place of honor in this week's issue, and will necessarily attract the attention of every reader of the paper. Some of the especially meritorious features of the Windsor Disc Harrow are pointed out in the advertisement, and will be so clearly understood and so fully appreciated by every farmer that it is unnecessary to enlarge upon them here. But the subjoined letters from prominent farmers whose knowledge of the quality and capacity of the implement is gained by actual trial will, we are sure, interest our readers:

Harrowsmith, April 1st, 1898.

Frost & Wood Co.,  
Smith's Falls, Ont.

DEAR SIRS,—The No. 4 12 x 18 inch Disc Harrow gives perfect satisfaction here. We had a trial of discs here on a field of quack grass that had not been plowed; there was not a disc here that could take it up. I sent and got my brother's Frost & Wood Disc with 12 x 18 inch plates, and it did the work perfectly.

Yours truly,

(Sgd.) Wm. Douker.

Addison, January 11th, 1899.

Messrs. Frost & Wood,  
Smith's Falls.

DEAR SIRS.—I purchased one of your No. 4 Disc 12 x 18 inch last season, and it has given me every satisfaction. I find that it does better work than any other make of harrow in this section, and I can gladly recommend your harrow to any and all farmers requiring an up-to-date article.

(Sgd.) ROBERT BARLOW.

**Stock Notes**

J. E. BRETHOUR, of Barford, makes the following report of his herd of large Yorkshire hogs: "I have sold since September 1st, 1898, over three thousand dollars' worth of my hogs for breeding purposes, and the winnings in the various shows have been over one thousand dollars during the same period. The past season has been one of the best that I have ever experienced for the sale of really good bacon hogs for breeding purposes. It is quite evident that farmers and breeders are waking up to the fact that it pays to breed the class of hogs which the markets demand. The type of hog which I am endeavoring to produce is one that is profitable to the feeder and at the same time furnishing the highest quality for the export trade. As good evidence that the quality of my stock is suitable for the export trade, in the competition at the Provincial winter show in Brantford for four of the best pigs suitable for the export trade of any pure bred, cross bred, or grade, four pure bred Yorkshires from the Oak Lodge herd won the first prize. I am breeding one hundred sows for the spring trade. A number of these are young sows which I am now offering. The total number of pigs now on hand is over two hundred, and I am convinced they are as good as I have ever offered. I will give a list of prizes won by my herd at the various shows in my next report.

Mr. H. C. GRAHAM, of Ailsa Craig, Ont., writes that he has a number of bronze turkeys weighing from twenty to twenty-five pounds which he can supply to customers on favorable terms. Write him.

**GIVEN AWAY!** We ask not a cent of your money.

Simply send your name and address, and we mail you a shipment of the best wicks in the world, absolutely free of charge also our complete prize list of articles, given for selling them. A few only are shown here. We have also Manicure Sets, Sterling Silver Jewellery, Pure Gold Rings, Chains and Bracelets, Fountain Pens, Tool Sets, Wagle Lanterns, Motors, Musical Instruments, etc., etc. Cash Commission if Preferred. You sell the wicks, return our money, and we forward your prizes, all charges paid by us.

Its light is like the Incandescent, clear, strong and steady. No more sputtering, clogging and bad odor. It makes reading and needlework a pleasure. All we need is to have it introduced, and we can well afford to make the most generous offers to get agents. Lose no time. Order at once. You run no risk. Unsold Wicks are returnable. When writing mention this paper, and the prize you want.

**The Whitelight Wick Co., Toronto.**

Free, with *Chains and Charms*, for selling 5 doz.  
Free, with *Chains and Charms*, for selling 5 doz.  
Free, with *Battery* for selling 5 doz.  
Free, with *Screen*, for selling 5 doz. Also *Ladies' Barber's Best Spring Shavers*, Free, with *Straps*, for selling 5 doz.

With every watch we send a *Written Guarantee* to repair or replace. Good for one year.

**Pearce's Poultry Supplies**

Green Bone Meal; Guaranteed No. 1..... \$7 00  
" " " " " No. 2..... 10 00

**"THE BEST" INCUBATOR AND BROODER**

Are not only the best in name, but are also the best in simplicity of running, the best in economy of fuel, the best for a large percentage in hatching, and also "The Best" are the cheapest, being placed so low in price that farmers, amateur poultry keepers, etc. can afford to purchase. "The Best" Incubators are made throughout with thoroughly kiln-dried white pine, and are well put together. It is not got up for show only; it is as well made on the inside as it is without, and is built to hatch.

Incubators, 100 egg size, \$15.00; 300 egg size, \$21.00  
Brooders, 100 " " 6.00; 300 " " 8.00

Send for circular giving full particulars regarding application of heat, ventilation, moisture, nursery, etc

Our 1899 Seed Catalogue now ready to mail. Address

**JOHN S. PEARCE & CO., London, Ont.**

Kindly mention this paper.



**Persiatic Sheep and Animal Wash**

A powerful non-irritant and healing preparation that is proving a boon to farmers all over Canada for sheep and cattle ailments, such as:

- TICKS
- MAGGOTS
- GANGRENE
- SHEAR CUTS
- RED LICE ON SHEEP
- WOUNDS
- RINGWORM
- BRUISES, ETC., ETC.
- AND SCAB.

Full directions on every can. Cures the worst cases. The most effective and economical dip on the market. If your dealer can't supply you, write us direct for it, and if there's anything out of the ordinary in the ailments of your flocks and herds we'll be pleased to give free any additional advice in the matter.

**The Pickhart Rowfrow Co.**

(LIMITED)

STOUFFVILLE, ONT.



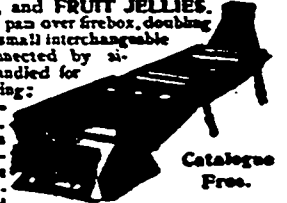
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For MAPLE, SORGHUM, CIDER, and FRUIT JELLIES. Has a corrugated pan over firebox, doubling boiling capacity; small interchangeable syrup pans (connected by siphons), easily handled for cleaning and storing; and a perfect automatic regulator. The Champion is as great an improvement over the Cook pan as the latter was over the old iron kettle hung on a fence rail.



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will be given to any one sending us not less than 100 new subscribers at \$1 each.

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will be given to any one sending us not less than 50 new subscribers at \$1 each.

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will be given to any one sending us 25 new subscribers at \$1 each.

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will be divided between the persons sending us the two largest lists of new subscribers prior to 1st June, 1899, as follows:

### \$20.00 CASH

to the person sending us the largest list, and

### \$15.00 CASH

to the person sending us the second largest list. If the two largest lists are equal, the \$35 prize will be equally divided between the persons sending them in.

**"The laborer is worthy of his hire,"** and no one who attempts to obtain a prize will go unrewarded, so long as he succeeds in obtaining subscriptions, no matter how small the number may be.

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## ONE MAN'S OPINION

John Humbly, Regina, N.W.T., writes as follows: "I received the 'Buffalo Coat' all O.K. and find it even better than expected. Storekeepers here are asking \$50 for the same kind of coat. Please send your catalogue."

**LOT 1.—Walloby Fur Coats.** These coats are a dark grey fur, 50 inches long, storm collars, quilted farmer's satin linings, fur binding, with loops and barrel buttons, our regular price \$25.00. Selling now for..... **\$18**

**LOT 2.—Matissina Buffalo Coat**—long strong fur, made same style as above. An excellent coat for teaming and rough wear, will last a lifetime. Every farmer should have one. The regular price was \$35. We are selling them now at..... **\$25**

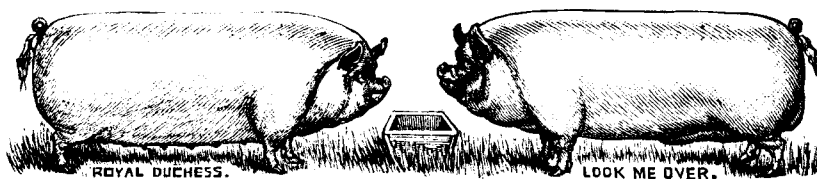
**LOT 3.—The strongest coat ever made, Prairie Dog Fur,** looks exactly like Coon, well made and lined, inside and outside pockets. We have only a few of these left and will sell at \$15. Don't think of buying a cloth coat when you can get one of these fur coats for \$15. You'll never regret it and we'll guarantee them.

**LOT 4.—The finest assortment of Real Coon Skin Coats** in Canada. They are all you can desire. Beautiful long hair, well made, nothing wanting, any size, 50 inches long. Regular \$50. Selling at..... **\$35**

Established 50 years.

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**Summer Hill Herd of Yorkshire Hogs—Large Lengthy English Type—**Among them being the undefeated prize-winning boar "LOOK ME OVER" —2602—acknowledged to be as good as any if not the best of his kind on the continent of America to day. Also "ROYAL DUCHESS," a first-prize sow at the Royal Show, Birmingham, England, in 1898, together with a choice lot of other sows, young boars fit for service, and pigs eight weeks old, single or in pairs not akin. Also choice young sows bred to "Look Me Over." We ship to order, prepay express charges, guarantee stock as described.

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Our List of SEED PREMIUMS in next week's issue. Agents Wanted. Samples and Outfit Free.

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to a good thing when you find it. The planter who once reads Gregory's Seed Book—who once plants Gregory's Seeds, will never begin a season's work without them.

**Gregory's Seeds**

represent the highest development of scientific seed culture. Gregory's seed book contains the best of seed and flower facts. The book is free to all—the seeds cost no more than the ordinary kind. Send for book at once.

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Marblehead, Mass.

## FOR SALE FIVE AYRSHIRE BULLS

Ranging from six months to two years. First-class animals, fit to head any herd.

Also, **BIRDS**

of thirty varieties of land and water fowl

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BUY  
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THE BEST

## For Dairy or Table Use

IT IS UNEQUALLED.

## Salt on the Farm

for wire worm, joint worm, army worm and all insects that destroy crops. Salt is the best insecticide. It is also a fertilizer.

**TRY IT.**

# R. & J. Ransford,

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# 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.

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

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

### BENEFITS OF MEMBERSHIP.

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

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

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

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

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

The list of cattle, sheep, and swine for sale will be published in the third issue of each month. Members having stock for sale, in order that they may be included in the Gazette, are required to notify the undersigned by letter on or before the 9th of each month, of the number, breed, age, and sex of the animals. Should a member fail to do this his name will not appear in that issue. The data will be published in the most condensed form.

F. W. HODSON, Secretary.  
Parliament Buildings Toronto, Ont.

bearing not only on the immediate crop but frequently on many subsequent ones. All seeds should be carefully examined before planting in order to test their purity and vitality. The introduction of foul weeds and disappointment from sowing seeds of low vitality are thus avoided.

The vitality of seed is influenced by a number of factors, among which are the kind of seed, degree of maturity at harvesting, methods of handling, water content, and temperature at which germination takes place. If thoroughly dried, seed will stand almost any degree of cold, and may for a few minutes be subjected to dry heat equaling that of boiling water without injury.

When immature seed is sown the tendency is to produce an earlier and more prolific product, as has frequently been done with tomatoes, but this is carried out at the expense of the ultimate vitality of the stock.

The age of seed is an important factor in their vitality. A very few seeds, such as those of cucumbers and melons, are supposed to increase in value till they are three years old. On the other hand some seeds become worthless in a short time. In an experiment it was found that barley and oats retained their vitality for ten years, wheat fell off nearly one-half, rye became practically worthless in that length of time. Tests of forage plants in England showed a depreciation in vitality during two and one-half years amounting to from 11 to 100 per cent.

Experiments show almost without exception that the largest and heaviest seed tend to produce the largest and most vigorous plants. For this reason, the too common practice of selling the best clover and grass seed and saving the screenings for the farm cannot be justified in any way. Not only do these contain many weed seeds, but what pure seed is in them is generally small and inferior.

It was found in some investigations in France that sulphate of ammonia, chlorid and sulphate of potash, nitrate of soda, and ammoniated superphosphates, when in contact with the seed, injuriously affected their germination. The amount of the different chemicals used was, it is true, considerably in excess of the quantity ordinarily applied to the soil, but, at the same time, this fact should be borne in mind by those using such fertilizers at the time of seeding.

The bulletin refers to the advantageous results obtained from sowing seed grown on soils of a certain char-

### STOCK FOR MANITOBA.

The live stock associations will forward a carload of pure bred live stock to Manitoba the end of this month. Buyers wishing to have stock shipped to the West should write to F. W. Hodson, Toronto, Secretary of the Dominion Live Stock Associations, for full particulars regarding rates, etc.

Lambton, West.....	112
Muskoka, South.....	46
Middlesex, North.....	41
Northumberland, West.....	72
Ontario, South.....	47
Prescott.....	7
Prince Edward.....	100
Port Carling.....	20
Simcoe, West.....	42
Stormont.....	30
Victoria, West.....	65
Wellington, Centre.....	55
York, West.....	124

The following is the average attendance at meetings, reports of which have been received since the last list published:

Brockville.....	60
Bruce, South.....	198
Bruce, West.....	135
Dufferin.....	55
Durham, West.....	55
Essex, South.....	138
Frontenac.....	47
Haldon.....	294
Hastings, West.....	90
Huron, West.....	87
Kent, West.....	78
Lambton, East.....	65
Lambton, West.....	78
Leeds N and Grenville N.....	65
Middlesex, North.....	213
Muskoka, South.....	31
Northumberland, East.....	113
Northumberland, West.....	177
Port Carling and Bala.....	145
Prescott.....	55
Russell.....	131
Stormont.....	70
Simcoe.....	113

### NOTICE TO SECRETARIES OF FARMERS' INSTITUTES.

According to the rules and regulations governing Farmers' Institutes, each secretary is expected to send a report of each meeting on Form A within one week after the close of each meeting or series of meetings; a list of members on or before the 10th of January of each year, and on the 10th of each month thereafter, and at least two papers prepared by local talent. See clauses 48, 49, and 50 on page 5 of the secretary's minute book.

Hereafter the acknowledgment of lists of members will be published each week in FARMING. Secretaries of Farmers' Institutes are respectfully requested to take note of this and at once report to the superintendent any neglect to promptly publish the acknowledgment of lists of members sent in by them.

The following is a list of members received since last issue:

Brockville.....	73
Bruce, North.....	90
Bruce, South.....	19
Bruce, West.....	84
Carleton.....	49
Cornwall.....	3
Dufferin.....	53
Durham, West.....	54
Essex, North.....	43
Essex, South.....	52
Grey, North.....	99
Hastings, West.....	109
Lambton, East.....	41

### AN ABRIDGED REPORT OF AMERICAN EXPERIMENTS WHICH ARE OF VALUE TO CANADIAN FARMERS.

(Continued from last issue.)

#### SEED SELECTION.

Farmers' Bulletin No. 73, issued by the U.S. Department of Agriculture, contains some timely remarks on seed selection, which has shown an important



acter on soils of a different texture, such as changing from a sandy to a clay or lime soil. It also mentions the benefit derived from a change of seed from one locality to another, notably from North to South.

GOOD ROADS — BROAD VERSUS  
NARROW TIRES.

Experiments conducted at the Missouri Station for two years on macadam, gravel and dirt roads, in all conditions, and on meadows, pastures and plowed fields, both wet and dry, showed that, as a general rule, the draft was considerably less when tires 6 inches in width were used than when the tests were made with tires of standard width, viz., 1 1/2 inches.

It was found that on a macadam road a load of 2,518 lbs. could have been hauled on the broad tires with the same draft that a load of 2,000 lbs. required on the narrow tires. On a gravel road except when it was wet and sloppy on top the results were about the same. The same favorable results were found on a dirt road when dry, hard, and free from ruts. When, however, the surface was covered with two or three inches of very dry, loose dust, the draft of the broad tires was greater than that of the narrow tires, as it was, on a clay road, muddy and sticky on top and firm underneath. When tested on a clay road with mud deep and drying on top, or dry on top and spongy underneath, the difference in favor of the broad tires amounted to from 52 to 61 per cent., or, in other words, a load of 3,200 lbs. could have been hauled on the broad tires with the same draft required to draw 2,000 lbs. on the narrow tires. As the road dried and became firmer, the difference in favor of the broad tires diminished until it reached about 25 or 30 per cent. On the other hand, as the mud became soft and deeper, the difference diminished until the condition arrived when mud adhered to both set of wheels when it was found that the narrow tires pulled materially lighter.

On a clay road with a dry surface, with deep ruts cut by the narrow tires in the ordinary use of the road, the first run of the broad tires over the ruts showed a materially increased draft as compared with that of the narrow tires. The second run of the broad tires, however, in the same track completely reversed this. Where the ruts were 8 inches deep, with rigid walls, three runs of the broad tires over the ruts in its own track eliminated any disadvantage against them in favor of narrow tires.

A large number of tests on meadows, pastures and plowed ground, in every condition, proved without exception that there was a difference in draft in favor of broad tires of from 17 to 120 per cent.

Six inches is recommended as the best width of tire for a combination farm and road wagon. Both the axles should be the same length, so that the front and hind wheels will run in the same track.

**P**lant life, to be vigorous and healthy, must have

## Potash

Phosphoric Acid and Nitrogen. These essential elements are to plants, what bread, meat and water are to man.

Crops flourish on soils well supplied with Potash.

Our pamphlets tell how to buy and apply fertilizers, and are free to all.

GERMAN KALI WORKS,  
93 Nassau St., New York.

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You may enter at any time. Write for prospectus. W. H. SHAW, Principal.  
Yonge and Gerrard Sts., TORONTO.

STRATFORD.

## Central Business College

STRATFORD, ONT.,

Don't Wait for something to turn up. Get a business education and turn something up. Active, educated and well-trained young men and women are wanted everywhere. We admit students at any time. Write for circulars.

W. J. ELLIOTT, Principal.



## FARMERS WANTED

To take orders in their section for the famous land renewer,

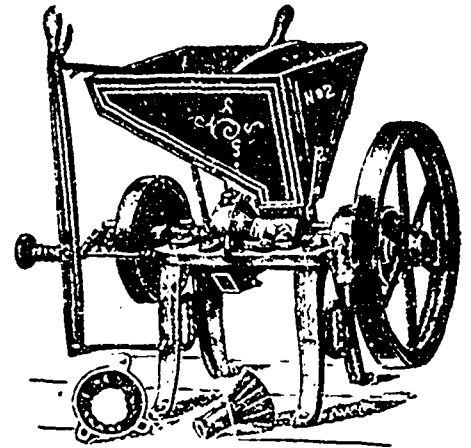
Alberta's Thomas-Phosphate Powder (Reg.)

Purity and analysis guaranteed. Correspond at once, as fall dressing of the land is important.

WALLACE & FRASER

Canada Life Building, - TORONTO

## GRINDER



A farmer's machine will last a life time. Plates as hard as steel and very durable. Plates conical in shape. We supply size No. 2 with either one or two fly-wheels. Our No. 2 is suitable for two-horse or three-horse Tread Power or four-horse or six-horse Sweep Power.

We manufacture also

TREAD POWERS  
THRESHERS  
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CIRCULAR SAW MACHINES  
etc., etc.

**MATTHEW MOODY & SONS**

TERRERONNE, QUE.

## Hamilton Engine

AND

## Thresher Works

Compound and Simple Traction  
and Plain Engines  
Threshing Machines,  
Clover Hullers,  
Horse Powers,  
Saw Mills, with all the latest improvements.

—ALSO—

ROAD-MAKING MACHINERY

Stone Crushers, Road Rollers, and Graders

For descriptive catalogues, prices, and terms, apply to

**SAWYER-MASSEY CO., LIMITED**  
HAMILTON, ONT.

## Binder Twine

Agents Wanted. Ontario Binder Twine Co., 124 Front St. West. Toronto, Ont.

When replying to advertisements please mention **FARMING**

FARMING

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

Published every Tuesday by

THE BRVANT PRESS,

44-46 RICHMOND STREET WEST, TORONTO, CANADA.

Subscriptions in Canada and the United States, \$1.00 per year, in advance; six months, 50 cents, three months 25 cents. In all countries in the Postal Union, \$1.50 a year in advance.

The date opposite the name on the Address Label indicates the time to which a subscription is paid, and the changing of the date is sufficient acknowledgment of the payment of a subscription. When this change is not made promptly notify us. In ordering change of address, be sure to give the old address as well as the new.

FARMING will be sent to all subscribers until notice by post card or letter to discontinue is received and all arrears are paid up. Returning a paper is not a notice to discontinue. All arrears must be paid up before a name can be taken from our list. All remittances should be made by P.O. money order, express money order, or registered letter. Sending money in an unregistered letter is unsafe, and will be at the sender's risk.

Advertising rates furnished on application. All communications should be addressed to "FARMING, 44-46 Richmond Street West, Toronto, Canada."

Representative for Great Britain and Ireland, W. W. CHAPMAN, Fitzalan House, Arundel St., Strand, LONDON, ENG.

MARKET REVIEW AND FORECAST.

Office of FARMING,  
44 and 46 Richmond street west,  
January 23, 1899.

Though business is somewhat quiet in wholesale circles, trade generally continues to improve: orders show a larger volume, and the prospects for the spring trade are very encouraging. Report from England show that Canada and her products are coming to the front in England as they have never done before. Money seems to be in ample supply, and rates are unchanged at 4 to 4½ per cent. on call. Trade reports from the United States are also encouraging.

Wheat.

The wheat markets have been comparatively steady during the past week, with an easier feeling at Chicago and Liverpool towards the end of the week. There does not seem, however, to be anything in sight to bring about any decided change in the situation in the near future. The weather during the past week or two has been somewhat unfavorable for the growing crops in some sections, and should these unfavorable conditions continue may have some effect upon the speculative side of the market. There seems to be a prevailing sentiment in foreign countries that America could obtain higher values for wheat if the speculative element were equal to bringing about the advance. But as there seems to be nothing in the situation to cause any decided advance, it would be unwise to put up values on mere speculation. The wheat coming forward in the west and in Canada has fallen off somewhat owing to a feeling that higher values are ahead of us. The world's supply in sight is 17,000,000 bushels less than it was at this time last year, but as the 1898 crop is 250,000,000 bushels more than in 1897 it is not an important factor. Reports show that more wheat is coming forward from the Argentine. The *Trade Bulletin's* special cable of Jan. 19 reads: "The market is unsettled, but with light stock holders are not pushing sales. On the Baltic prices have fluctuated for cargoes afloat, but during the past day or two a decidedly weaker feeling has been developed."

The Montreal market is quiet and prices are largely nominal on spot. West of Montreal sales of red winter have been mar at 69½ to 70c. f.o.b. during the week. Red

and white is quoted here at 69 to 70c. west; goose at 70c. west, and No. 1 Manitoba hard at 79 to 81c. Toronto, and No. 1 Northern at 74c. Red and white wheat on the local market brings from 72½ to 73c., spring life 70½c., and goose 70½c.

Oats and Barley

Under increased supplies the London market for oats is easier. Oats are dull at Montreal but prices have not undergone any material change, and quotations are 32½c. for No. 2 white, and 32c. for No. 3 in car lots. Oats are dull here at 28 to 28½c. for mixed, and 29c. for white west. They bring from 33½ to 34½c. on the local market.

The Montreal barley market is quiet at 55 to 57c. for No. 1 malting. It is easier here at 46 to 47c. west.

Peas and Corn.

The London market for peas is firm. The Montreal market is steady but quiet at 71 to 72c. in store and 66½c. west. The market here is quiet at 65 to 66c. west. On the local market peas fetch from 59 to 66c. per bushel.

The Montreal corn market is steady at 46 to 47c. for No. 2 American mixed in car lots. Canadian yellow is quoted here at 36c. west, but not much is to be had. No. 2 old American yellow is quoted at 45c. and new at 42½c. Toronto.

Bran and Shorts.

Ontario bran at Montreal is quoted at about \$15, Manitoba bran at \$14.50, and shorts at \$15.50 to \$16 per ton. Mills here sell bran at \$14 and shorts at \$15 in car lots f.o.b. Toronto.

Clover and Timothy Seeds.

The Montreal market is quiet but steady; American timothy being quoted at \$1.25 to \$1.50, red clover at \$4.25 to \$5, and Alsike at \$4 to \$5. Some Canadian red clover has been shipped to England lately. The market here is the same as last week.

Eggs and Poultry.

The English markets for Canadian eggs have declined from 1s. to 1s. 6d. during the week, owing to over supplies. The Montreal market is steady. New laid eggs are quoted there at from 21 to 30c., fine candled stock at 16 to 17c., and lined at 15½c. The recent sharp demand from the United States is over. The market here is steady at 22c. for new-laid, and 16 to 18c. for held stock. On the local market strictly fresh eggs are quoted all the way from 25 to 35c. per dozen.

Choice fresh turkeys are in good demand at Montreal at 9½ to 10c., and in some cases 10c. per lb. Choice chickens are quoted at 7 to 7½c.; ducks, 7 to 8½c.; and geese, 6 to 6½c. The offerings here are not large, and the market is steady at 6 to 7c. for geese, 7½ to 9c. per lb. for turkeys, and 30 to 75c. per pair for chickens, and 40 to 70c. for ducks. Prices are a shade higher on the local farmers' market.

Potatoes.

The Montreal market is steady at 55 to 57½c. per bag in car lots on track. The market here is steady at 55 to 60c. per bag in car lots and 70c. out of store. On the local market they bring from 60 to 70c. per bag.

Fruit.

The trade at Montreal is quiet. There is a better feeling in the apple market, though prices show no change. On the local market here apples bring from \$1.50 to \$2.50.

Hay and Straw.

Shipments of hay to England have so far given good returns, yet prices on this side show very little advancement. No. 1 clear timothy is reported scarce at Montreal at \$6.00 or \$6.50 f.o.b. at country points, which red equal to \$7.00 to \$7.50 at Montreal. Mixed clover and timothy bring from \$5.00 to \$5.00

Baled hay is steady here at \$7.00 to \$7.50 for cars on track, and \$4.00 to \$4.50 for baled straw. On the local market timothy hay is quoted at \$9.00 to \$10.50 per ton and clover at \$5.00 to \$7.50.

Cheese.

The *Trade Bulletin's* special London cable of January 19th reads: "The market is firmer with a good demand, and in view of light stocks and the requirements between now and the new make holders are not making concessions." The total shipments from Montreal from May 1st, 1898, to January 14, were 2,087,703 boxes as compared with 2,315,834 boxes for the same period of 1897, showing a decrease of 228,131 boxes. The shipments from New York for the same time were 335,064 boxes as compared with 622,749 for 1897, a decrease of 287,685 boxes, making a total decrease from both places of 515,816 boxes. With these shrinkages holders are not anxious to unload, feeling that values may increase later on. At present it would be difficult to get more than 9½c. for fines; western at Montreal, but holders will not take less than 10 cents.

Butter.

Owing to large imports from Australia the London butter market is weaker and 4s. per cwt. lower, finest Canadian creamery having been sold during the week at 96s. In keeping with this the Montreal market is quiet and easier at 19 to 19½c. for choice late made creamery. The shipments from Montreal from May 1st, 1898, to Jan. 14 were 328,867 packages against 246,189 packages in 1897, an increase of 82,678 packages. The shipments from New York for the same time show a decrease of 107,818 packages, making the net decrease from both places 24,140 packages. Creamery is steady here at 20 to 21c. for prints and 19 to 20c. for tubs. Choice dairy tubs are quoted at 13 to 15c. and large rolls at 15 to 16c. On the local market lb. prints bring from 15 to 21c. and large rolls from 13 to 14c. per lb.

Cattle.

The cattle situation shows little if any change. At the leading American markets really good cattle are in demand at fair prices, but there have been too many half-finished cattle off-ring of late and the market for these is dull and draggy. It will pay farmers to finish their cattle better. On Friday all good cattle found ready sale on this market, but inferior and unfinished cattle were off in price fully \$2 per head and slow of sale.

*Export Cattle.*—Choice heavy exporters are worth from \$4.40 to \$4.75, and light ones \$4.25 to \$4.50 per cwt., choice heavy bulls bring from \$3.65 to \$4.12½, and light ones at \$3.25 to \$3.50.

*Butchers' Cattle.*—Choice picked lots of butchers' cattle, equal in quality to the best exporters, bring from \$3.75 to \$4 per cwt.; good from \$3.50 to \$3.75, and medium from \$3.25 to \$3.35 per cwt.

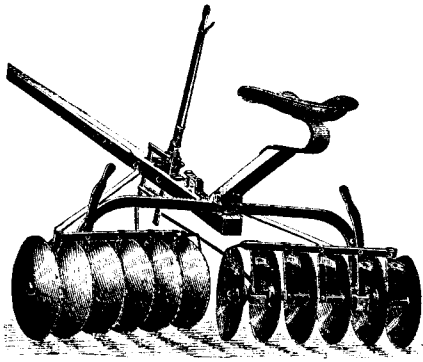
*Stockers and Feeders.*—Trade in stockers was brisk on Friday with prices 10c. per cwt. firmer, selling all the way from \$3.25 to \$3.40 for medium to good, and \$3.50 for choice steers. Stock heifers and bulls bring from \$2.25 to \$2.60 per cwt. Heavy feeders weighing about 1100 each are in demand and bring from \$3.60 to \$3.80 per cwt.

*Calves.*—Very few calves are being offered and prices are unchanged at \$3 to \$6 each, with \$5 per cwt. for choice veals of extra quality.

*Milk Cows.*—These sell all the way from \$28 to \$40 each for the general run, with some good ones reaching \$45.

Sheep and Lambs.

These have been fairly steady at American markets. There has been a large supply of lambs at some points, which has tended to lower values in these a little. The market



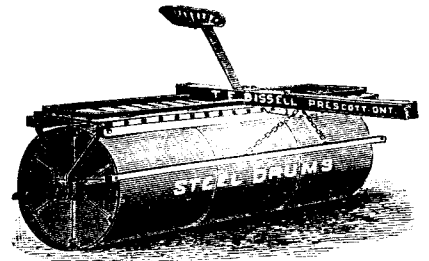
See it—It's a Beauty.  
Try it—It gets there.  
BUY IT—It's the Best.

# Bissell's 2 Leaders

Disk Harrows  
Steel  
Land Rollers

For prices and particulars  
write to

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



Steel Drums.  
Roller Bearings.  
6, 8, 9, and 12 feet sizes.

here shows no change, and prices are \$3 to \$3.25 for ewes, and \$2.50 to \$2.75 for bucks. Yearling lambs bring from \$4.25 to \$4.40 per cwt.

**Hogs.**

There seems to be quite a little strife on between the drovers and packers due to a circular sent out by the packers to the former, who claim that the packers have formed a combine against the drovers. The Wm. Davies Co., of this city, claim that there is no combine whatever, and that the circular in question was issued in self-defence. The drovers claim that the packers cull too closely and make too great a discrimination between fat and lean hogs. The deliveries of hogs were heavy on Friday, and, though prices were unchanged at \$4.50 to \$4.62½ for choice selected bacon hogs weighing from 160 to 200 lbs., unfed and unwatered off the cars a weaker feeling prevailed. Light hogs sold for \$4 to \$4.25 with thick fats at \$3.75 per cwt. Prices for the best selections this week will be \$4.37½ per cwt.

Regularity in feeding is an important factor. If cattle are fed at certain times of the day, and only at those times as far as practicable, they will learn to expect it then and only then. This will remove the uneasiness often exhibited when persons enter the stable or are working about them at other times. It is also a saving on their digestive organs.

## The Machines that made America famous

All our competitors  
are trying to copy.



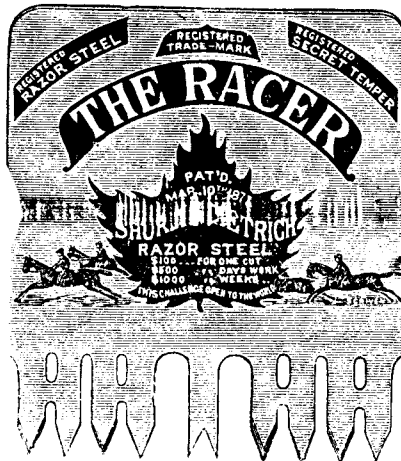
**MORAL:** See that the machine you purchase bears the name **DEERING.**

Main Office and Factory:  
**CHICAGO, U.S.A.**

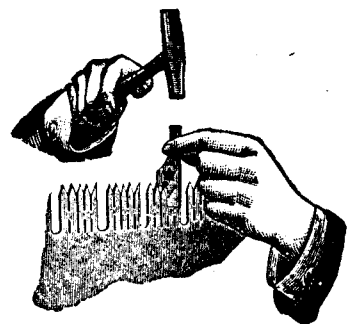
Permanent Branch House:  
**LONDON, ONT**

### THE RAZOR STEEL, SECRET TEMPER, CROSS-CUT SAW

WE take pleasure in offering to the public a Saw manufactured of the finest quality of steel and a temper which toughens and refines the steel, gives a keener cutting edge and holds it longer than any process known. A saw to cut fast "must hold a keen cutting edge." This secret process of temper is known and used only by ourselves. These saws are elliptic ground thin back, requiring less set than any Saws now made, perfect temper from tooth to back. Now, we ask you, when you go to buy a saw, to ask for the **MAPLE LEAF, RAZOR STEEL, SECRET TEMPER SAW**, and if you are told that some other saw is as good, ask your merchant to let you take them both home, and try them, and keep the one you like best. Silver steel is no longer a guarantee of quality, as some of the poorest steel made is now branded silver steel. We have the sole right for the "Razor Steel" brand. It does not pay to buy a Saw for one dollar less, and lose 25 cents per day in labor. Your saw must hold a keen edge to do a large day's work. Thousands of these Saws are shipped to the United States and sold at a higher price than the best American Saws.



#### Maple Leaf Saw Set



**Directions.**—Place the Set on the point of tooth as shown in the above cut, and strike a very light blow with a tack hammer. If you require more set, file the tooth with more bevel. If you follow directions you cannot make a mistake. Be sure and not strike too hard a blow, and it will set the hardest saw.

Manufactured only by **SHURLY & DIETRICH, Galt, Ont.**

**Windmills**  
ECONOMIC POWER  
is secured with a  
**Canadian Steel Air-Motor**  
A household word in Canada.  
Greatest Labor-Saving Machine on the farm.  
Will Owe You Nothing After Two Years.  
Tanks, Pumps, Grinders, Water-Basins, Etc., Etc.

**Ont. Wind Engine & Pump Co. Limited**  
LIBERTY ST. - TORONTO

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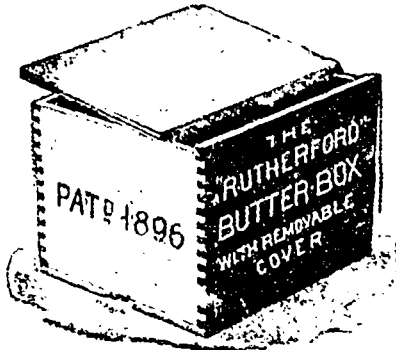
THE Twentieth Century Mender bids good-bye to the needle and thread. Welcomed by thousands of women and praised by men. No more dirt in your home from mending bags. PATCHALL mends grain bags, binder canvas, and all kind of cloth. It is a great saver for the farmer. Straw passing through small holes, winding on the rollers of the self-binding mangle, winds out. A nice piece of canvas and a little PATCHALL saves time and money. A great success in grain warehouses wherever tried. Thousands of bags are now patched by PATCHALL. Eight patches, two inches square, cost a cent. If you cannot obtain it from your hardware dealer, send 25 cents, and we will mail a can to your address prepaid. Manufactured by

**Domestic Specialty Co.,**  
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## COLDSRING HERD TAMWORTHS.

A number of fine young sows in pig, some Brantford winners. Choice September and October pigs of both sexes. A fine litter from Beauty I am ready to ship. Orders booked for spring pigs. Prices easy.

**NORMAN BLAIN,**  
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Made of Kiln dried spruce. Smaller at bottom. All boxes paraffined lined. For sale by Dairy Supply Furnishers and Produce Dealers.

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Incubators and Brooders. Self-Regulating. Special low price for first in any locality. Agents wanted everywhere. Eggs for hatching, by the hundred cheap. B. P. Rocks a specialty. Catalogue free. Address Geo. S. Singer, Cardington, O

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Not one case in a hundred that cannot be cured by one to three applications of

## Fleming's LUMP JAW CURE



Trade Mark Reg'd.

Lump Jaw has heretofore baffled treatment. It has infected herds and pastures, and caused loss of hundreds of thousands of dollars. This new remedy cures quickly, thoroughly, and permanently. Leaves jaw smooth and sound. Easy to apply: costs but a trifle compared with results.

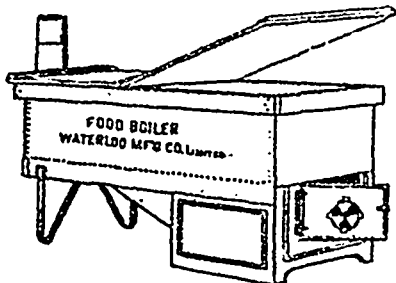
**GUARANTEE.**—Every package sold under positive guarantee; money back if it should ever fail to cure. Sent everywhere by mail. Price, \$2.00.

**FREE** A valuable illustrated treatise on cure of Lump Jaw sent free to readers of this paper.

Address: **FLEMING BROS.**

Chemists, ST. GEORGE, ONTARIO

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Used chiefly by Farmers, Stock Feeders and Butchers for  
**COOKING FEED FOR STOCK AND POULTRY,**  
For **BOILING SAP,**  
**SCALDING HOGS,**  
Etc., Etc.

The Most Economical on Fuel and the Most Convenient for all-around purposes of any Cooker in the Market

**IT PAYS TO BOIL FEED for STOCK, HOGS and POULTRY**

Built in 40, 80 and 125 Gallon Sizes. Write for Circulars and Prices

**WATERLOO MANUFACTURING CO., Limited**  
WATERLOO, ONT.

## Extract from Annual Report for 1897

of the Consulting Chemist of the ROYAL AGRICULTURAL SOCIETY OF ENGLAND, published in their Journal, 31st December, 1897, page 732:

"It has been necessary to call attention to the fact that under the name of 'slag,' and sometimes even under that of 'basic slag,' have been sold refuse materials of a very different character, and having little or no manurial value. These have not been the product of the now well-known 'Basic' or THOMAS process of iron or steel-making, and have contained little or no phosphoric acid such as basic phosphate' is. In several instances the purchasers believed that they were buying the true basic slag. It behoves one, therefore, to be careful to stipulate for THOMAS-PHOSPHATE, and to have a guarantee of phosphoric acid contained, and of fineness of division."

We handle the only true

## Thomas-Phosphate Powder

sold in Canada; and to be sure of genuine material, see that the bags have our name and address.

**WALLACE & FRASER**

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ST. JOHN, N.B.

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## Humpty-Dumpty Egg Crates



See what loss might have been prevented if the new Egg Crates were used by all farmers.

They are exceedingly cheap and very strong and durable.

**Be Sure You See Them.**

**THE DOWSWELL  
MAN'G CO LIMITED**

If your dealer has not got them send to us for Circulars.

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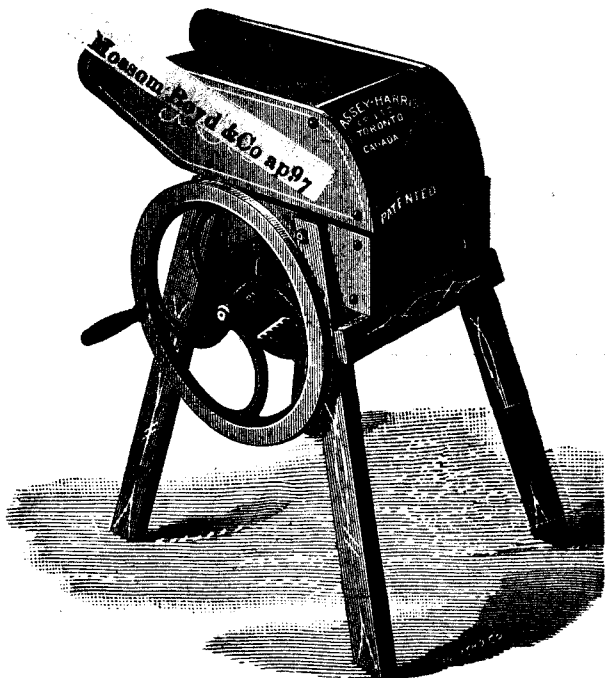
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BOOK on POULTRY and Almanac for 1899. 150 pages. 100 illustrations of Poultry, Incubators, Brooders, Poultry Houses, etc. Tells how to raise chickens successfully, their care, diseases and remedies. Diagrams with full descriptions to build poultry houses. All about INCUBATORS, BROODERS and Fancy Poultry, with Lowest Prices. Price only 15c. C. C. Shoemaker, Freeport, Ill., U. S. A.

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IN THE POULTRY BUSINESS and how to make it a complete success is the theme of our POULTRY GUIDE. Tells all about poultry houses, how to build, cost, etc., and how to breed, feed and market fowls. Treatise also of the famous **CYPHERS INCUBATOR** which is delivered freight paid to every purchaser. This machine requires absolutely no artificial moisture. Send 10 cents and get the book. Circulars FREE. THE CYPHERS INCUBATOR CO. Box 49, WAYLAND, N.Y.

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# Your Cattle

need careful attention in order to bring you good returns. The roots they eat should be well sliced and pulped. The



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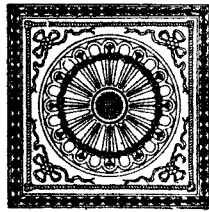
Roller  
and  
Ball-  
Bearing  
**PULPERS**

are the best machines made for this purpose; they go so easily and will do the work so speedily!

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Nor anything else as good for interior finish as our



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We make countless artistic designs that will suit any room of any building—they are easily applied and moderate in price.

**Fire-Proof, Sanitary, and Permanently Beautiful.**

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The Safest, Best BLISTER ever used. Takes the place of all liniments for mild or severe action. Removes Bunches or Blemishes from Horses and Cattle. **SUPPRESSES ALL CAUTERY OR FIRING.** Impossible to produce scar or blemish. Every bottle sold is warranted to give satisfaction. Price \$1.50 per bottle. Sold by druggists, or sent by express, charges paid, with full directions for its use. Send for descriptive circulars. **THE LAWRENCE-WILLIAMS CO., TORONTO**

## The Unparalleled Reputation of

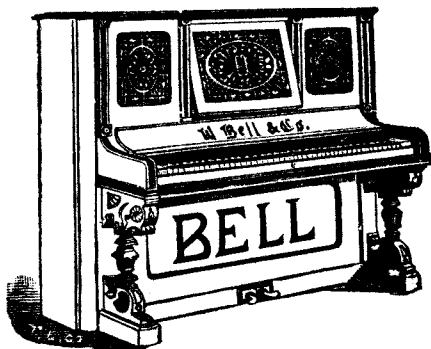
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Is accepted without dispute by all other makers

ORGANS from \$40 upwards  
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Only the best materials used. All others are rejected  
On Reasonable Terms from all Agents  
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If once gains a foothold in your herd will in all probability carry off from ten to twelve per cent.

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**WE ABSOLUTELY GUARANTEE TO CURE ALL CASES.**

If it fails we return your money. Endorsed by Canada's leading cattle exporters, Gordon, Ironside & Fares, Montreal and Winnipeg.

Price \$3.00.

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**W. J. Mitchell & Co.,**

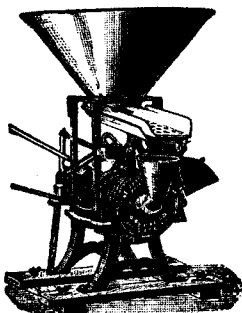
CHEMISTS,

Prince Albert, N.W.T.  
Winnipeg, Man.

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