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AND HOME MAGAZINE

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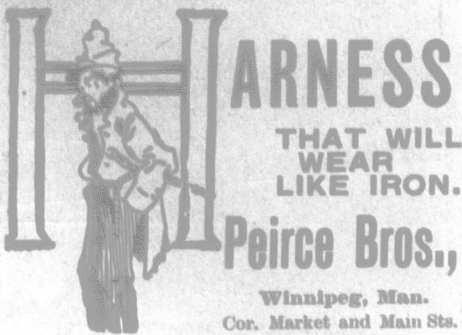
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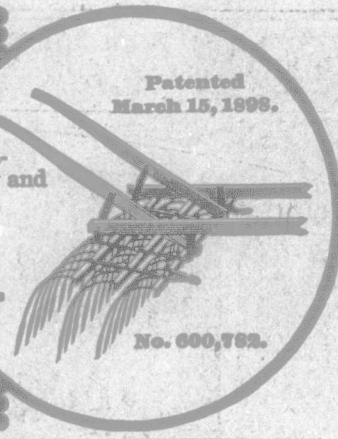
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FARMER'S ADVOCATE

AND HOME MAGAZINE

* AGRICULTURE, STOCK, DAIRY, POULTRY, HORTICULTURE, VETERINARY, HOME CIRCLE. *

Vol. XXXIV.

LONDON, ONT., AND WINNIPEG, MAN., FEBRUARY 20, 1899.

No. 472

Don't Use Damp Grain for Seed.

Elsewhere in this issue Superintendent Bedford warns an enquirer of the danger of using damp wheat for seed. A few days ago one of the local Provincial papers commented editorially on a report a farmer in the neighborhood had received from Ottawa on the germinating strength of a sample of wet wheat. The editor drew the inference that damp and damaged wheat, that commanded a low price on the market, was first-class seed. This, of course, is the gravest folly. Damp grain is very liable to heat the first warm weather, and while the germination of such grain may be perfect before any change of weather takes place, it is difficult to tell when a change has taken place and the vitality of the grain almost ruined. Oats are particularly liable to injury from heating, and the greatest care should be exercised that only sound grain be used for seed. The temptation is sometimes great to use cheap seed, but the risk—a year's crop—is too great. Don't take chances.

Canadian Poetry and Butter.

Mr. C. C. James, Deputy Minister of Agriculture for Ontario, takes advantage of the opportunity which is afforded him when replying to the frequent inquiries received at the department from all parts of the world respecting Ontario to bring Canadian literature to the notice of his correspondents. Recently he forwarded to Mr. Thomas Hutchinson, of Peggwood, Morpeth, England, who has been making the acquaintance of Ontario by correspondence, copies of the Christmas numbers of the FARMER'S ADVOCATE and Acta Victoriana, in which were poems by Mr. J. W. Bengough. The other day Mr. Bengough received a letter from Mr. Hutchinson expressing admiration of his poems, and adds: "I, for one, as one of the directors of our local co-operative society, can vouch for the superlative quality of your Canadian produce—butter in particular. But it is as an ardent admirer of Canadian poetry that I am inflicting this letter upon you."

Buy a Cream Separator and Save the Wife.

To the Editor FARMER'S ADVOCATE:
In FARMER'S ADVOCATE of Jan. 5th you ask those of your readers who use a cream separator to write you. Last spring I bought from Brigham & James, Moosomin, an Alexandra cream separator, No. 12, and believe it was one of the best investments I ever made. Would not be without it. We milked seven cows and passed the milk through the separator in the evening in twenty-five minutes, and in the morning in from fifteen to twenty minutes. Under the old system of deep setting we received about ten quarts of cream; with the separator we received from thirteen to fifteen quarts per day. Your readers may reckon the difference at 25 cents per quart, the price paid in Moosomin; then we had a better quality of cream.

One mistake, I think, a great many farmers make, is buying one of the larger separators—a No. 8 or 7½. My advice to my brother farmers is if you have a herd of no more than twelve cows, get a 11½ Alexandra, or if another make, one to correspond to that size, it is plenty large enough, and is far more convenient. A complaint I hear from several farmers is that the separator requires so much strength. I had the same difficulty to contend with. When I brought my separator home I could run it quite easily. My wife would turn it once in a while, but my little girls could not manage it. I found it becoming harder each week, until finally I could hardly turn it myself. I unscrewed it from table and examined it very closely, but could see nothing wrong; finally I examined the rubber ring which held the boxing of spindle. I found it had swollen till boxing pressed against head of spindle. I removed ring and put in a new one. Now my little girls, eight and ten years old, turn it without any trouble. Perhaps in the majority of cases where the separator turns so hard it could be remedied if a new ring was put in. My advice is to see that the head of spindle is at least a sixteenth of an inch from boxing. I am speaking of the Alexandra, as I have never had anything to do with the other makes; they may be a better machine, but I am well satisfied with the Alexandra. I bought it upon the recommendation

of Senator Perly, Professor Robinson, and others. The separator is a great saving of labor, especially when the cream is sent to the creamery. No ice to harvest in winter; no bother setting milk morning and evening; crawling through a manhole into ice house every day; filling the tubs or boxes containing cans of milk. A farmer said to me the other day, "My hired man and I milked ten cows and had the milk in well inside of an hour." Very well, my friend, that is better than I can do with separator; but what about the other work? Oh, wife attends to that. Poor wife! If you had a No. 11½ separator your wife would be saved a lot of labor. You or your man could turn the separator, the other could feed the calves, etc. I said to another, "Look at the quantity of cream you lose!" "Well, the calves get it, so it isn't lost." "What about what you feed the pigs?" "I suppose they get the cream, it won't hurt them." "All right, sir, but I prefer to make the cream into gilt-edge butter, and give the pigs the butter-milk."

In conclusion, Mr. Editor, I would advise every person to get a small separator, and if you have from eight to ten cows it will pay for itself in one year in the greater quantity of butter made. I have used both the well and ice, and speak from experience.
East Assiniboia. J. B. POWELL.

Steer Feeding on a Wheat Farm.

To the Editor FARMER'S ADVOCATE:

In answer to your request to give our method of stall-feeding cattle, of which we have 68 head: Our feed consists of hay, green oat sheaves, good green oat straw, frozen or shrunken wheat, oats, and bran. We feed cut green oat sheaves and oat straw—about one-half of each. Mix together with chop, which consists of bushel for bushel of frozen wheat and oats. Feed as much chop as the cattle will stand without scouring. Mix it in the cut feed. We feed this until about the 10th of February, then we use hay in place of oat straw. Experience soon will teach anyone when he is feeding enough grain. Give a bran mash twice a week. Use a little salt in feed and a little sulphur at intervals. Give cattle a change once in a while from the cut feed to whole feed, such as hay or green sheaves. We water by means of a covered trough in front of stall. They can drink nearly any time except when feeding, when we keep the trough covered by means of lids to keep it clean. All our chopping, cutting, and pumping is done by a 15-foot windmill, which gives good satisfaction.

The cattle are fed regularly twice a day, morning and evening, all they will eat up clean, and while being fed in the morning they are cleaned out and bedded with dry wheat straw; in the evening they are only bedded with straw. After they eat all they can and drink they lie right down and rest.

Keep them as quiet as possible. We wash with sheep dip about every twelve days until we are sure they are all clean from lice, which they generally have in the fall less or more. Our cattle are clipped on the back to keep them cool. We use a little oil on back occasionally. We have them all tied except fourteen head, which are in a box stall. Stables are good and warm and well ventilated. We spread the manure from the stable on land which we are going to summer-fallow next summer.

Our opinion is, a farmer should try and raise his own steers, and to raise good ones never let them get thin, and when he comes to stall-feed them they will know how to put on beef.

We are not experienced feeders, and would be glad to get a few good ideas on feeding from some of your readers who have more experience. We will write you again when we know what result we will obtain.
A. & G. Mutch.

Central Assiniboia.

Dairy Product of Assiniboia for 1898.

A party in a position to know whereof he speaks furnishes us with the following estimate of the products of the dairy industry in the district of Assiniboia and Saskatchewan for the year 1898: Of creamery butter there was 308,000 pounds manufactured, which realized 19 cents at the creameries, netting the patrons 15 cents. In some cases 20 cents was realized, making 16 cents to the patrons. Of home dairy butter there was about 220,000 pounds, which realized the farmer from 7½ to 17 cents, or an average of 11½ cents. Factory and homemade cheese about 90,000 pounds, averaging the farmer about 8 cents. This totals as follows:—Amounts received by the farmers: Creamery butter, \$46,200; home dairy butter, \$25,300; cheese, \$7,600. Total—\$78,700.

Good Results from the Use of the Weeder.

As this is a good time for farmers to read and think over these things, I offer my experience in killing weeds after the grain is sown. I have used the ordinary harrow more or less for the last ten years or more in harrowing grain after sowing to kill small weeds, with more or less success. In some conditions of the ground the ordinary harrow does pretty well, but other times it is entirely too severe on the grain, and puts it back by pulling out or burying too much of it, so that it takes the grain too long to recover, and is liable to make the crop later in ripening. I borrowed one of the Breed weeders several times to try it, but concluded that it was not enough better than a harrow to get one. Last winter I intended to get a very light wooden harrow made for the purpose, but saw a new weeder advertised that took my fancy. After looking over their circulars carefully I sent for two, a single one, 7½ feet, and a 12-foot one for two horses. I used them both on my grain last season with what I consider very good results, and am well pleased with them. I consider I owe a portion of my good crop to their use, and think they paid me many times over last year. I never had pig-weed come up so bad as it did last spring; still I had a pretty clean crop and a good yield. The teeth of the weeder I have are made of flat spring steel, rounded at the point, and are so arranged in three rows on the angle iron frame that they clog less with rubbish and do better work than any harrow or weeder I know of. The small one is very handy on a potato patch or garden, and does quite as good work as the larger ones any place, but many people will likely prefer the larger one on account of the extra speed they make. The makers have the large one arranged with wheels and levers, etc., for \$9. They can be bought either way. I do not know whether the wheels are any advantage other than riding instead of walking (quite a consideration, some will think), as I have only seen the cuts of them yet. I have found it is better to have the grain sown a little on the deep side and pretty well harrowed either before or after sowing, so that the ground is pretty level on the surface, and the freer from rubbish the better; also fairly firm, but not baked or lumpy; in that condition you can kill the weeds better with less injury to the grain. I think the best time to go over the grain first time is just before or about the time the grain is coming through the ground. The weeds are usually starting then, and are easiest killed at that stage, and it does very little harm to the grain at that time. You can't kill large weeds with either weeder or harrow, as what will kill them will hurt the grain. The use of the weeder can be repeated if necessary till the grain is quite high. The horses' feet will do the most harm.

I think, in a dry season especially, using a weeder is a great benefit. It saves the moisture for the grain, that the weeds would draw out of the ground, and seems to prevent evaporation to some extent, causing a much better growth of grain than if not used.

I believe harrowing the crops, especially with the ordinary harrow, has a tendency to delay the ripening to some extent, and perhaps makes the land more liable to drift with the winds, although I have never lost much that way on account of the harrowing. The weeders are much safer to use than any harrow on account of working much nearer the surface and doing the grain less injury.

The principal reason of the success of the weeders over the harrow is that the grain is sown say 2½ inches deep, and the weeder teeth work the surface above the grain an inch to an inch and a half, killing the surface weeds and disturbing the grain very little. The flat spring teeth are not near so liable to drag rubbish and cover the grain. It is called the "Success Anti-Clog Weeder and Cultivator," and pretty well deserves that name.

I could not advise the purchase of a weeder unless the work is done when the weeds are small, if necessary leaving all other work till afterwards.

Judging by last season, it looks as if we will have to do something of that kind or frequently lose quite a portion of our crop, for we can't grow a good crop of grain and a crop of weeds on the same land at the same time.
Brandon, Man. H. NICHOL.

No art is fraught with so many difficulties or has more varied conditions that affect management than that of agriculture. The long winter evenings afford the best time in the world to study them. Experience is a good school, and a little theory for dessert will not come amiss.

THE FARMER'S ADVOCATE AND HOME MAGAZINE.

THE LEADING AGRICULTURAL JOURNAL IN
THE DOMINION.

PUBLISHED BY
THE WILLIAM WELD COMPANY (LIMITED),
LONDON, ONTARIO, AND WINNIPEG, MANITOBA.

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Strand, London, W. C., England.

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Farmers' Institute Meetings.

Mr. H. McKellar, Chief Clerk of the Department of Agriculture, and Rev. W. A. Burman, of St. John's College, gave a number of addresses at Farmers' Institute meetings, in the County of Dennis, during the week ending Jan. 28th. On the 24th the first meeting was held at Bradwardine, Mr. Jasper in the chair. The schoolhouse was crowded with an appreciative audience, including several ladies. At this, as at later meetings, Mr. McKellar, after alluding to matters of local interest, spoke at considerable length upon "Subjects suitable for consideration at Farmers' Institutes."

The subjects suggested included: "What quantity of seed shall we sow per acre?" "Stacking;" "Feeding cattle for market;" "Farm buildings;" "The farmer's garden;" "Noxious weeds;" "Swine," etc. The Rev. W. A. Burman followed with an address on "Plant life in reference to noxious weeds." Both speakers were listened to with marked attention, and at the close appreciative remarks were made by Mr. Norris, M. P. P., and Rev. D. A. B. Stoddart.

The Institute in this district is in a flourishing condition, and the meeting was a marked success.

The next day (Wednesday) a meeting was held at Avon River, with Mr. Lynch in the chair. Although a blizzard was blowing, there was a fair attendance and much interest was evinced by those present. After the meeting the speakers drove to Virden, twenty-five miles through the blizzard, whence they proceeded to Elkhorn. Here a meeting was held the following day. The attendance was doubtless diminished by the intense cold and high wind; nevertheless, there was a goodly number of farmers present, whose interest in the proceedings proved their earnestness in the work of the Institute.

The next meeting was at Virden. It was a bitterly cold day, yet the attendance of farmers was very encouraging, and in addition a number of the senior scholars of the public school were present by invitation, so that the hall was well filled. The chair was taken by Mr. P. Macdonald; and the mayor of Virden, Mr. Macdonald, and other citizens were present to show their interest in the work of the Institute.

At Oak Lake the Institute met on Saturday afternoon. There was a very large attendance, and in point of interest the last of the series was the best meeting of the week.

The addresses of the speakers mentioned above, but varied to suit the local conditions, was especially the case with Mr. Burman's address, in which he dealt with weeds peculiar to the district, and in each district.

Corn and Oats a Good Substitute for Hay.

To the Editor FARMER'S ADVOCATE:

I wish to compliment you on the Christmas number. It was very good, only I think if the illustrations were all of Shorthorn cattle, Yorkshire pigs, and Cotswold sheep, the country would soon be a great deal richer. I see Mr. Martin, of Regina district, is the only one who has come out in support of hauling out green manure. His farm may not be weedy as yet, but he may realize the truth when too late. Now, I will go a little further and prove it to be a great loss besides cultivating weeds. I could give lots of tests, but will confine myself to the experience of last year. Last fall I thought I would sow broadcast a few acres of corn and oats mixed, and lightly plow in and give one stroke of harrows. With this in view, in the fall I covered about three acres with well-rotted manure at the rate of ten loads per acre. In the spring I did other three acres with green manure from the stables at the same rate. In the second week of June I sowed it; rain came when we were working at it, so all got a good chance and all came up well, but when cutting time came, what was green manured was fully six inches shorter than where there was no manure, and where the rotted was applied the crop was fully nine inches longer than when there was no manure. It was all a fine crop. I cut with the binder and took off twenty-four good loads—a grand substitute for hay. In fact, I think, far better than prairie hay. I intend following this up. Sorry I cannot accept of Mr. Martin's invitation at present, but if spared may avail myself of it on some future occasion,
JAMES MILLIKEN,
Pipestone Municipality, Man.

Symmetry Should Not be Lost Sight of in the Dairy Cow.

To the Editor FARMER'S ADVOCATE:

I rather like the ADVOCATE, and among the excellent articles that appear in its columns from time to time there are none that I have enjoyed reading better than those by Mr. F. S. Peer. This last one from his pen, in your January 20th issue, is, I think, the best yet. While the Ayrshire breeders in Scotland may have erred in not giving sufficient attention to the utility side of the question, I think a great many of the expert judges of dairy cattle we have on this continent are going too much to the other extreme; some of them seem to think that all the virtues of a dairy cow are in the backbone, the hide and the milk vein, and if a smooth, symmetrical animal is placed before them they are sure to arrive at the conclusion that that animal is no good for dairy purposes. As far as Ayrshires are concerned a greater mistake could not be made. Type, style, symmetry and beauty of form is what tops the market in all breeds of live stock, and I trust the Ayrshire breeders will not let these expert theorists fool them into dropping the substance and grasping at the shadow.
GEORGE STEEL,
"Heather Lodge Farm," Glenboro, Man.

A Satisfactory and Cheap Food Boiler.

To the Editor FARMER'S ADVOCATE:

I have just read, in your issue of Jan. 5th, "Invicta's" remarks on feed cookers. In the beginning of this winter I made a wooden cooker with a sheet-iron bottom, after the style of the one used by Mr. Brethour and twice illustrated in the ADVOCATE. It is about 6 ft. long by 2 ft. 6 in. wide and 12 in. deep. I have a tight wood lid on it. The total cost, including stovepipes, elbow and damper, was a little under \$4. The fire box is simply two walls of rough stones well plastered, 12 in. high and 2 ft. between them. The elbow is set in the stonework at the end to connect to the upright stove pipe or chimney, and an old piece of sheet iron is used for a door at the other end. This rig gives unqualified satisfaction, and I am only sorry that I did not make one years ago. One can boil two bags of cleanings in it easily. It is economical of fuel, as such a large surface is exposed to the heat, and by putting in a couple of sticks at bedtime the stuff is quite warm next morning, even when it is 20° below zero. Of course, one must pay attention to having enough water in it to prevent the bottom from burning. Trusting that this may be of use to some brother farmer,
FRANCIS J. B. DOUGLAS,
Turtle Mountains, Man.

Self-Confidence Needed.

To the Editor FARMER'S ADVOCATE:

Will you please give an old reader of the ADVOCATE a small space in your paper to make some remarks on breeding stock. It seems very strange to me sometimes to hear old breeders find fault with the country, complaining that they can't raise stock here to compete with Ontario and the Old Country; also complain about people who have means buying good animals to compete with and beat theirs, as Hon. Thomas Greenway did last July at Winnipeg Industrial and Brandon. Now, I glory in his "spunk," to have the best, if possible, at any cost. But why not beat Mr. Greenway here without going out of the Province; for we can raise just as good and even better than Ontario or the Old Country either. I will give you proof for what I am saying right here with my own breeding. First, consider "Farmer's Pride," or what was called "Mullen's big calf." Now so far as proof can be got of any calf, this one beat the world, for at four months he weighed 106 pounds

and at eight months 897 pounds. Now, this is what defies the world. And if you turn to the ADVOCATE of February, 1890, you will get what your own representative said about the calf, which would be well worth a reprint to prove what can be done when we try, and don't mind what anyone says, for theory is no use without practice, and it was and is practice that I speak from.

Now, a word on heavy horses, that lots of people say can't be grown in this country. I raised two in 1891 that at seven months weighed 717 pounds and 720 pounds respectively. Canadian Lion was one of the colts. And there is a four-year-old now on the farm of Robert Grames that is about 17½ hands high, and weights about 1,000. When one does this, why not another? As for light horses, my own fancy, I can show two here now out of a small, well-bred mare, Sleepy Molly, 15½ hands high, by Daniel (2.28), dam Gold Dust, that I think can defy the Dominion for the age and condition. Molly Sprague is coming four years, full 16 hands high; May Sprague, a full sister, coming three years, is 16 hands high, with good body and limbs for a roadster. A letter in January 5th ADVOCATE by A. G. Hopkins, V. S., pleases me well, and ought to please a lot more breeders in striving to get size as well as quality. This can be done, too, if you try, for a big driver is what we need, especially when they have good breeding and can "go some." Now, when I can raise such animals as mentioned, why not others? They can if they try, for there are lots of good breeders in Manitoba that can do more than they think they can, for the simple reason that they lack self-confidence, and think it no use trying to beat some great man in Ontario or England.

Hoping more will take a greater interest in breeding,
JAMES A. MULLEN,
Manitoba.

Puts Green Manure on Barley Land.

To the Editor FARMER'S ADVOCATE:

The question raised in your last issue as to the best and most economical method of handling manure I think a very important question. I will give you my plan, which I find very satisfactory. I use manures on barley land, and handle the land in this method: I select the poorest piece of land convenient to yard and plow in the fall; then all the manure we make in the stables we apply through the winter as it is made, and as soon as possible in the spring put the heavy Randle harrows on and give it one stroke. This starts the weeds. Then as soon as we finish our wheat and oats we draw all the manure out of the yard and Randle-harrow in without plowing, and then sow barley with the disk seeder, which puts it in very well.

My reason for handling in this way is (1st) we do not plow our weed seeds under to be plowed up again the next year to germinate and bother us. (2nd) We find the barley a great exterminator of weeds. The weeds start, but the barley makes such a rapid growth it smothers them, and they don't amount to anything. (3rd) Handling direct from the stable and yard we find a great quantity of oats grow, which if the land is sown to wheat is a detriment, but as we use all our barley for feed a few oats mixed with it does no harm, and as we cut the barley rather on the green side the straw makes splendid fodder, having the green oats in it. The next year follow with wheat, and summer-fallow or seed down the third year. We apply about eighteen loads per acre.

In regard to cultivated grasses, we had good success with timothy last year. Have eighty acres for hay the coming season if our new seeding comes out all right. We intend taking two crops on summer-fallow, then seed down. Also had a piece of Bromo grass which did well, but find the seed rather expensive yet to seed down in any quantity.
STEPHEN BENSON,
Langford Municipality, Man.

The Live Stock Outlook.

(FROM OUR ONTARIO AND EASTERN EDITION.)

Reports which we have just received from feeders in several districts indicate a decidedly improved demand for export cattle. Several sales are already mentioned at five cents per pound, live weight, for May deliveries. One writes: "I have sold \$2,000 worth of stock in the past ten days." This included, we understand, his stall-fed beasts and a few breeding animals besides. Better prices for export beefs will react favorably on stock for home consumption. Since the removal of the ninety-day quarantine many thousands of feeders have been drawn away to the States at very good prices, considering that they were not of the most desirable type. It has had doubtless a stimulating effect upon trade, but in our opinion a better class of beefs should be reared and finished at home in order that the full advantage of the industry be derived. The prices being realized for other farm stock are also encouraging.

There has been a corresponding advance in the prices, and demand for breeding stock. The annual meetings of the Canadian live stock breeders in Toronto last week were very largely attended and most encouraging throughout, as we foreshadowed in our last issue. From present appearances 1890 ought to be a record year with the Canadian breeder and farmer, whose greatest security rests in an intelligent system of live stock husbandry.

The Conventions.

The annual gatherings of the live stock breeders, dairymen, and horticulturists, which were this year held during Bouspiel week in Winnipeg, certainly proved the most successful, in point of numbers and interest taken in the proceedings, of any yet held. In a country of such magnificent distances it cannot be hoped to collect a very large concourse of people at any one point for meetings of this sort, but it is most gratifying that the attendance is yearly increasing and that so many of the leading breeders and others take an active part in these conventions. On every hand were heard expressions to the effect that this year's meetings were the best ever held, that the papers read and the discussions which followed were of a most helpful and encouraging nature.

The opening meeting, on the evening of the 7th of February, was a joint gathering of cattle and sheep and swine breeders and dairymen. The attendance was good, the large council chamber of the City Hall being filled to the doors. It was much regretted that illness prevented the presence of Mayor Andrews, who was extremely anxious to offer a fitting welcome to the representatives of these important interests. Illness also detained Hon. Thos. Greenway, whose address was looked for as one of the chief features of interest. He, however, was able to attend one of the later sessions, and delivered an interesting address. After a few words of welcome from Alderman Mathers, and a happy reply on behalf of the stock and dairymen from Dr. Rutherford, M. P., of Portage la Prairie, John A. Craig, Professor of Animal Husbandry at the Agricultural College, Ames, Iowa, addressed the meeting on *Selection in Stock-raising*. The Professor is a clear, fluent speaker, thoroughly conversant with his subject and quick to catch his audience. He delivered two addresses during the week, and was always ready to take part in the discussion of the many subjects that came up and to give the results of his wide experience in experimental stock feeding and breeding, etc.

In the absence of two speakers who were on the programme, Experimental Farm Superintendents Angus McKay, of Indian Head, and S. A. Bedford, of Brandon, kindly consented to read their papers that were on the programme for other sessions. Mr. McKay read a valuable paper on *Root Cultivation*, and Mr. Bedford spoke on *Grasses and Fodders, and the Feeding of the Dairy Cow*.

Sheep and Swine Breeders' Association.

The fifth annual meeting of the Sheep and Swine Breeders' Association of Manitoba and N.-W. T., held in Winnipeg on February 8th, was unquestionably the most successful in point of numbers and interest yet held. The report of the Secretary-Treasurer showed the Association to have a largely increased membership, and that the work undertaken in the interests of the breeders of sheep and swine was having a beneficial effect. Reports from the Association's representatives to the Winnipeg Industrial and Brandon Exhibitions, as well as many local agricultural fairs, testified further as to the influence and usefulness of the Association's efforts.

President S. J. Thompson, V. S., reported, as representative to the Winnipeg Industrial, on last year's work, and suggested further improvements for the future. Henry Nichol represented the Association at the Western Fair, Brandon, and made a most encouraging report. As a mark of the appreciation for past services, both these representatives were re-elected. For the ensuing year the officers were elected as follows: President, Jas. Riddell, M. P., Rosebank; First Vice-President, Andrew Graham, Pomeroy; Second Vice-President, F. W. Brown, Portage la Prairie; Secretary-Treasurer, G. H. Greig, Directors representing sheep—W. J. Helliwell, Oak Lake; O. W. Bailey, High Bluff; J. B. Jickling, Carberry; W. Wallace, Neversville. Directors representing swine—Jas. Bray, Longburn; J. A. McGill, Neepawa; Jas. Yule, Crystal City, and K. McLeod, Dugald. Auditors, R. Waugh, Hugh McKellar. Representatives to Exhibition Boards—Winnipeg, S. J. Thompson; Brandon, Hy. Nichol; Portage la Prairie, James Bray; Carberry, J. G. Barron.

A letter was read from F. W. Hodson, Secretary of the Dominion Swine Breeders' Association, stating that the sum of \$100 had been voted for the Swine Department at the Winnipeg Industrial, but the appropriation was made too late to be available under the conditions named to apply to the 1898 show, but could be counted on for 1899. It was decided that the executive take this matter up and see if the amount which was intended for last year could not be obtained, as well as a like amount for this year, as the Dominion Association received a very large share of its fees from the breeders of this Province.

Mr. Riddell, M. P., Rosebank, read a paper on *Legislation to Restrict the Depredations of the Prairie Wolf*. He presented a strong array of facts showing that the prairie wolf had almost made sheep breeding an impossibility, and strongly favored legislation that would give an increased bounty and provide for an unlimited payment of bounty. An interesting discussion followed, which resulted in a resolution being carried that the Government provide unlimited funds for payment of wolf bounty; that the bounty be increased, and

that dogs be taxed, and the funds so raised be applied on the wolf bounty fund.

A *Satisfactory Piggery for Manitoba* was the subject of a paper by Jas. Yule, in which the piggery on Prairie Home stock farm was described in detail.

H. W. Kellar, Chief Clerk, Department of Agriculture, presented some statistics on the hog industry, showing that the field for the breeder of pure-bred hogs was an extensive one, and well worth cultivating.

Mr. P., foreman of the J. Y. Griffin & Co. pork-packing establishment, presented a paper on the *Bacon Hog*, but time did not permit of its being read.

Pure-bred Cattle Breeders' Association.

The above Association held its eighth annual gathering on the afternoon of February 8th, in the City Hall, Winnipeg. In the unavoidable absence of President Gray, the Vice-President for the N.-W. T., Mr. Angus McKay, of Indian Head, took the chair. After the reading and adoption of the minutes of the last meeting, the President's address and the report of the Secretary-Treasurer, the officers for 1899 were elected. There were three nominations for President, and it required four ballots to decide the election. The result was: President, Walter Lynch, Westbourne; First Vice-President, Andrew Graham, Pomeroy; Second Vice-President, F. W. Brown, Portage la Prairie; Vice-President for N.-W. T., J. E. Peaker, Yorkton; Secretary-Treasurer, G. H. Greig, Winnipeg; Auditors, R. Waugh and H. McKellar. Representatives of Breeds—Hon. Thos. Greenway, Shorthorns; Wm. Shannan, Herefords; Hon. W. Clifford, Polled Angus; Wm. Martin, Galloways; D. Monroe, Jerseys; Geo. Steel, Ayrshires; Jas. Glennie, Holsteins. Additional Directors, W. S. Lister, J. G. Barron, and James Ray. Representative to the Winnipeg Industrial Board, J. G. Barron.

A resolution expressing the appreciation of the Association at the action of the Local Government in giving a cash grant of \$2,500 to the Winnipeg Industrial last year, and trusting that at least a like amount would be granted this year, was unanimously carried, on motion of Geo. Steel, seconded by Wm. Shannan.

The afternoon programme contained papers on *Barn Building*, by S. A. Bedford; *Corn Growing*, D. Munroe. Both papers were listened to with marked attention and were earnestly discussed, showing that there is an increasing interest taken in these subjects, both of which are so intimately connected with successful stock-raising.

JOINT EVENING SESSION.

At the evening session, which was a joint meeting of the Live Stock Associations, addresses were delivered by several prominent speakers. Charles W. Peterson, Deputy Commissioner of Agriculture, Regina, read a paper on the *Interdependence of the Cattle Industry on Farm and Ranch*. He first showed the importance of the cattle industry, and referred to the countries from whence the world's supply was chiefly derived. The Argentine he considered Canada's chief rival; she had for several years been importing vast numbers of choice bulls of the best breeds from Britain and from France, which must tend toward improved quality, while he feared Canada had been losing ground in this respect, at least the quality of the stock on the ranches of the West was deteriorating owing to the use of inferior sires. In order to assist in improving the quality of the cattle, the Government of the Territories was prepared to bear a large portion of the freight charges on pure-bred bulls imported from Ontario through the Dominion Cattle Breeders' organization, or for that matter from Manitoba, provided some responsible organization, such as the Pure-bred Cattle Breeders' Association, would undertake to collect the animals and have them forwarded under proper supervision. He referred briefly to the qualities of the several beef breeds for ranching and stall-feeding purposes. He also referred to some of the drawbacks to breeding cattle on the ranches, and the heavy percentage of loss to calves the first year. Stock could be profitably bred on the farm and sent as yearlings to the ranges to be finished.

James Glennie read a very amusing paper on the *Dairy Cow*, referring to the special purpose beef cow, the special purpose dairy cow, and the so-called general purpose cow. He was a firm believer in the special purpose animal, and found in the Holstein his ideal for his purpose. He had not the least doubt but that the fastidious taste of the Englishman would before long change as regards his beef, as it had done with bacon, until he would demand that the tail be left on the beef carcass, so that he could be certain his beef was that of a black and white animal.

Dr. Rutherford, M. P., Portage la Prairie, spoke briefly on *Stable Hygiene*, which was, he said, a most important subject, that from his many years' experience in an extended veterinary practice was very little understood. He explained the system of ventilation that after many years' experimenting he had in his stable, and which was an actual *working success*, not a mere theory. He had a good-sized ventilator in the center, provided with a damper that could be opened or closed at pleasure, and then fresh air inlets under the walls of the stable, through air-tight boxes, or, better, "U" pipes.

Prof. John A. Craig gave an address on *Sheep—Good and Bad*, illustrating his remarks with a series of large photographs. He also gave some figures from experiments carried on at the Iowa Agricultural

College on cattle feeding. In answer to questions, he stated that they had at the College, Shorthorns that gave 30^c pounds and over of butter a year, and the steer calves from these same cows had been fed to weigh 1,500 as two-year-olds. Such cows he considered profitable, and they had been able to breed heifers from them that would surpass their dams. Of course, he did not maintain that steers from such cows would come up to steers from specially bred beef sires and dams. But under conditions existing in some sections where there is a lot of roughage to use up, he considered animals of that sort would best answer the purpose. Dr. Rutherford said that in some of the best districts in Scotland the Shorthorn bull used on the Ayrshire female produced a general purpose beast *par excellence*; in fact, steers from that cross were better feeders than pure Shorthorns, and the females the best of dairy cattle.

Prof. Craig considered the dangers of crossing breeds serious; it was difficult to know just what the results would be.

BULLS FOR THE NORTHWEST.

At a directors' meeting of the Pure-bred Cattle Breeders' Association it was decided to co-operate with the Territorial Government in arranging for the handling of pure-bred bulls shipped from Manitoba to Territorial points. Under this arrangement the breeders will notify the Secretary, George H. Greig, Winnipeg, of any sales of bulls for shipment to the Territories. The first car will likely be forwarded early in April. A careful man will be sent in charge, and every attention given to the stock. The Government assumes all transportation charges except \$5 a head, which the purchaser deposits with the Department of Agriculture, Regina, along with his application.

Annual Meeting of the Manitoba Dairy Association.

In spite of the fact that the dairy industry has not been so satisfactory this past season as could be wished, the annual gathering was well attended and a very live interest taken in the proceedings throughout. At the opening session the Directors' report was presented after the reading of the minutes. It went very exhaustively into the situation of dairy matters in the Province, and while citing some of the difficulties that were confronting the industry, pointed out many causes for hopefulness as to the ultimate success of dairying in Manitoba.

A recommendation was made that as a large portion of this Province was more adapted to mixed farming than wheat-raising alone, the Dominion Government should establish a small dairy in connection with the Brandon Experimental Farm, and also that more attention be given to the feeding and breeding of dairy stock on the Experimental Farm. The question of whether the convention should be held at some other place than Winnipeg next year was reverted to and discussed at length, it being finally decided that Winnipeg was the most suitable place for holding the convention. It was suggested that a series of local conventions could profitably be held in different sections of the country. The Directors were instructed to use their utmost endeavors to inaugurate such meetings.

The Association's representative to the Winnipeg Industrial Exhibition, Mr. Munroe, reported on the work he had been able to accomplish. At his instigation the large addition to the Dairy Building had been made for the exhibition of cream separators and dairy utensils. The judge, Prof. Farrington, of Madison, Wisconsin, had given entire satisfaction, and the score cards had been mailed to every exhibitor a few days after the fair.

Under the heading of *The Outlook for Creamery Buttermaking*, with the successes and failures of the past season, Wm. Grassick gave a very interesting resume of the Pilot Mound Creamery's past season, a report of which appeared in our last issue. W. B. Gilroy spoke for the McGregor Creamery, A. R. Fanning for Newdale, Dr. Young for Manitou, and others.

J. D. Hunt, of Carberry, introduced the discussion on *The Duty of the Patron to the Creamery*, giving in a pointed way some of the things the patrons ought and ought not to do. David Jackson, of Newdale, followed, drawing special attention to the laxity of many patrons in taking care of the cream. A portion of spoiled cream getting in with a whole gathering would not only effect the value of the product for the party sending it, but that of every other patron. Every detail should be attended to with minute and constant care. He spoke of the carelessness of many in the care of cream cans. Deep cans with taps at the bottom were often used that were difficult to clean.

Wm. Scott called attention to the fact that fresh, warm, newly-skimmed cream should not be mixed with cold cream until it has been cooled. C. C. Macdonald spoke at length on this subject, advising the use of the separator. Separate the milk immediately from cow, aerate if necessary, then cool immediately as low as possible. Keep cream can immersed under cold water. If kept dry it loses its moisture and becomes too thick and clotted. He then explained why the oil-test churn is the only practical test for the conditions prevailing in this country. Of course, care in sampling was essential. Stirring the cream would not properly mix it—it should be poured from can to can, so as to get proper sample. Drivers must be made to sample properly, and the maker to do the work thoroughly and carefully. Mr. Bonsfield found

good cream from deep-setting cans, if proper care is used. Always skim from on top, never running off by tap at the bottom.

C. C. Macdonald endorsed what was said, pointing out the necessity of having all tin dairy utensils most carefully made, and seams, inside and out, flushed with solder. Never use deep-setting cans with taps and graduated scales at the bottom.

D. Munroe spoke, emphasizing these points. Advocated use of separators and of tread powers to run them, using the bull on the power. Did the work well, and was good for the bull. R. J. Hopper said their cream gatherers gave guarantee or bond of \$200, and were made responsible for the quality or quantity of the cream. F. Lutty suggested that each creamery association should send one of their directors or cream gatherers or secretaries to take a course at the dairy school and study the sampling of cream and the oil-test churn.

ELECTION OF OFFICERS.

President, D. W. McQuaig, Macdonald; First Vice-President, R. Waugh, Winnipeg; Second Vice-President, W. M. Champion, Reaburn; Secretary-Treasurer, E. Cora Hind, Winnipeg; Representative to Exhibition Board, D. Munroe, Winnipeg; Auditor, G. H. Greig, Winnipeg. Directors—W. B. Gilroy, Austin; E. A. Struthers, Russell; A. R. Fanning, Newdale; Wm. Scott, Winnipeg; D. Munroe, Winnipeg; George Harcourt, Winnipeg; Wm. Grassick, Pilot Mound; J. D. Hunt, Carberry; J. T. Reigher, Hockstadt.

Mold—Its Cause and Prevention. was the subject of an excellent paper by Alex. Scott, of Hamiota. He showed mold to be caused by dampness. Many creameries had been built of green, unseasoned lumber, which became impregnated with mold. He recommended the use of formalin, together with cleanliness. Superintendent Macdonald said he had heard a good deal about mold in Manitoba butter this past season, but thought the statements exaggerated, as he had been unable to find any at the creameries. He had recently visited British Columbia and been shown moldy butter. In such a damp, foggy climate they could not help but have mold. He, however, said all the ice refrigerators were at fault, and a proper refrigerator was only possible by having chemical refrigeration. He continued at length to explain why he claimed this, and estimated the cost at about \$500 to an ordinary creamery.

J. A. Kinsella, Dairy Superintendent of Assiniboia, said the ice refrigerators they had in the Government creameries in Assiniboia and Saskatchewan had given every satisfaction. The temperature could be held down low enough and the atmosphere kept dry. The ice tubes gathered the moisture from the atmosphere. A man who was not capable of looking after an ice refrigerator certainly would not be competent to take charge of a chemical ice machine.

C. Marker, Dairy Superintendent for Alberta, being present, was asked for his opinion on this question, and said at the Innisfail Creamery, referred to in Mr. Scott's paper, they had had some trouble from mold. This creamery was an old one when taken over by the Government, and the floor was sunk about six feet into the ground, and was consequently very hard to keep dry. He strongly recommended the constant and free use of lime about the buildings. Always kept a supply of lime at the creameries ready for use. Whitewash the utensils occasionally. Apply the whitewash one day and scrub off the next. It made the wood brighter and harder, filling up the grain and making it less porous to water. Use lime, and plenty of it. The system of cold storage in the Territorial creameries was entirely satisfactory. They mixed eight per cent. salt with the ice in the ice tubes, and this gathers the moisture onto the outside of the tubes and leaves the air dry. Mechanical refrigeration was all right, but the expense was a serious consideration.

Geo. Harcourt quoted from the experience of Prof. Dean and others, summing up the chief points to be observed to prevent mold—to keep the cold storages dry, the parchment paper in a dry place, to use seasoned wood for buildings, tubs, etc., and proper insulation of buildings.

J. A. Kinsella read a short but pithy paper on the conditions of the creamery industry of the West.

EVENING SESSION.

A joint meeting of the Dairy and Breeders' Associations brought the convention to a close. Mr. Champion, ex-President of the Dairy Association, occupied the chair. A resolution sent in by the Manitoba Veterinary Association was read by the Secretary, and elicited considerable discussion. In substance the resolution read:

"The Manitoba Veterinary Association, realizing the danger to human life from the milk of tuberculous cattle, and that the general consensus of opinion is in favor of the reliability and efficacy of the tuberculin test as a diagnostic agent, they therefore would urge upon the Dominion and Local Governments, the public generally, and the stock owners in particular, the advisability of adopting at the earliest possible date systematic measures for the suppression and eradication of the disease among cattle. Such measures comprise (1) an intelligent use of the tuberculin test by properly qualified and responsible men; (2) the destruction and proper disposal of the carcasses of all animals showing physical signs of tuberculosis; (3) the isolation of all animals reacting to the tuberculin test, with a view to their subsequent slaughter and the utilization of such carcasses as after proper inspection

may be deemed fit for human food, and as a meantime measure the careful pasteurization of the milk from cows so affected, whether intended for human food or for the lower animals; (4) the careful disinfection of premises in which affected animals have been kept; (5) careful attention to light, ventilation, drainage, and general sanitation of stables."

The question was discussed by Dr. Rutherford, M. P.; Dr. Little, Dominion Veterinary Inspector; Mr. David Munroe, of Winnipeg; Dr. S. J. Thompson, of Carberry; and A. Graham, of Pomeroy. Finally, by a show of hands, the resolution was endorsed.

On motion of the Dairy Superintendent a resolution was passed urging the Dominion Government to prohibit the use of the square-box butter package for anything but creamery butter.

Supt. Macdonald spoke briefly on *Frauds in Foods*, referring more particularly to the use of artificial coloring in butter and cheese. Mr. C. Marker, Dairy Superintendent for Alberta, spoke on the *Babcock Test*. He did not believe there was a person present who doubted the accuracy of the Babcock. People who attended dairy meetings and read the agricultural press were not the ones that needed any arguments to prove the reliability of the test, but there were still people who doubted. He recommended the creameries to take every means of educating every patron on this subject. Have them come to the creameries and see the work done, and have full information given by the buttermakers. It is time enough to talk of introducing the individual test in the dairy herds after the patrons are all believers in its accuracy. Some of the causes of low tests were due to the individuality or breed of cow, to the individuality of the milker (a slow milker tends to make lower-testing milk), irregularity in time of milking, climatic conditions, etc.

Hon. Thos. Greenway, Minister of Agriculture, referred to the pleasure it gave him to attend such a meeting. Ever since coming to Manitoba and appreciating its capabilities, the height of his ambition had been to be the owner of a good farm, well stocked, with good buildings and free from debt, and some of his friends knew how far he had succeeded. He referred to the Winnipeg Industrial and the magnificent success it had achieved. He considered it one of the best agencies for showing the capabilities of the country. He noted with pleasure that the breeders in the East recognized the importance of the Industrial, as by a dispatch in the morning papers he saw that the Dominion Shorthorn Breeders had voted \$500.00 to the prize list of the Winnipeg Industrial.

Their object was not an entirely unselfish one. They were, he supposed, trying to induce the stockmen of Manitoba to go down and purchase more of their best cattle. On the magnificent calendar issued by the Winnipeg Industrial, he noticed the announcement that 35,000 farmers had produced \$27,500,000 worth of products in 1898. That was a wonderful showing, but what would they have produced had they been farming. Wheat-growing as practiced by a great many in this country was not worthy to be called farming. On his own farm 500 or 600 acres were cropped last year and every forkful of straw would be utilized by the stock and converted into manure to be returned to the soil. He also referred to the hog question, pointing out that this Province did not at the present time produce anything like enough pork to supply the local demand; mutton also was being imported, and also poultry, cheese and butter—things that ought to be produced on the farms of our own Province. Complaint was frequently made about transportation rates, but if we would concentrate our products into a form that would stand the rates and supply the demand of the markets nearest to us, it would make farming more profitable and more permanent.

After hearty votes of thanks had been accorded to the speakers, who had so helped to make the convention a success, the meeting closed with the singing of "God Save the Queen."

Western Horticultural Society.

The annual convention of the Western Horticultural Society was held in the City Hall, Winnipeg, on February 10th. Afternoon and evening sessions were held. An interesting programme was presented, and the attendance, while not so large numerically, was very appreciative. The papers read elicited animated and practical discussion, and on the whole the convention was a most gratifying success.

After the receiving of the reports of executive committee and treasurer, the election of officers resulted as follows: President, Prof. A. B. Baird, Vice-Presidents: John Caldwell, Virden; S. A. Bedford, Brandon; A. P. Stevenson, Nelson; Angus McKay, Indian Head; Thos. Franklin, Stonewall; G. S. McGregor, Mekiwin. Secretary, A. F. Angus, Treasurer, W. G. Scott, Councilors: Rev. Dr. Bryce, H. C. Whelms, and Geo. H. Greig.

A resolution, on motion of Prof. Baird, seconded by T. Franklin, regarding the San José Scale Act was, after a pretty full discussion, carried unanimously. The preamble of the resolution pointed out that as far as could be learned the San José scale would not do any injury in this country; that it did not exist in Minnesota, while there was considerable of it in Ontario. Ontario-grown stock was almost worthless in Manitoba, whereas Minnesota-grown stock was the most suitable that could be got anywhere; in fact, was our only practical source of supply. The act not only prohibited the impor-

tation of fruit trees, but all forest and ornamentals as well. And one of the most rapid-growing and useful trees for our Western country, the American cottonwood, could only be got in quantities from Minnesota or Dakota.

A. P. Stevenson referred to some of the advantages in Minnesota-grown fruit and other trees over those from Ontario: The long distance from Ontario nurseries. The Ontario nurseries are mostly situated in southern part of that Province. The stock from there is grown under forced conditions, whip-shaped, and sure to sun-scald. In Minnesota the native plum has been much improved and is adapted to conditions in this country, while there is not a plum grown in Ontario that is of any use here. He found the cottonwood one of the best and most rapid growing of forest trees, and our only source of supply was Minnesota. A great many varieties of ornamental shrubs and trees got from Minnesota were hardy, while the same sorts from Ontario were absolutely useless.

A. McKay could not see that any harm could come from the importation of the varieties desired in this country from the States immediately to the south of us. Cottonwood trees, one of the most rapid growers and now in great demand, could not be supplied without access to the northern States. He would like to see the restrictions removed, at least as far as the Territories are concerned. He had not the least fear of the San José scale doing any harm in this country. He found any Ontario-grown trees, or even the native Manitoba maples, grown from seed sent down to Ottawa and the young trees brought back here, were only half hardy, while home-grown trees from the same seed were perfectly hardy. R. Alston also spoke in favor of the removal of the embargo, as did several others. It was resolved that action should be taken to get the Government to take off the restrictions placed on the importation of fruit and forest trees from Minnesota, which State was free from the San José scale. It was left to the Executive to bring the matter before the Local and Federal Governments.

The advisability of holding a flower show in the fall was discussed, introduced by Mr. Frankland and Mr. Bedford. The consensus of opinion of those present was in favor of holding a horticultural show. The matter was finally left with the directors.

S. A. Bedford read a valuable paper on *Hedges*, recommending for large shelter hedges the American white willow, sharp-leaf willow, cottonwood, and native maple. These should be trimmed once a year at least. Many questions were answered regarding other varieties, methods of trimming, plants, etc. Mr. McKay said the caragana, the Asiatic maple, native snow berry, and the artemisia, were among the most satisfactory for small and ornamental hedges.

Apple-growing in Winnipeg was the subject of an interesting paper by W. G. Fonseca. He had a long experience, had tried many varieties. Has Transcendent, Hyslop crabs that have been very fruitful; also several varieties of standard apples. He also referred to many individual trees in various parts of the city and neighborhood that had survived out of the thousands that had been planted. Minnesota-grown nursery stock was by all odds the most suitable for this climate.

Early Difficulties in Apple-growing in Minnesota was the subject of a short but most encouraging letter from Mr. Wyman Elliot, of Minneapolis. He held out strong hope of ultimate success of apple-growing in this country. Disappointment after disappointment met the early attempts made in Minnesota, but success was now rewarding their efforts.

At the evening session, Mr. Middleton, Secretary of the Brandon Horticultural Society, read a paper on the Flower Show held in Brandon last autumn, which was a decided success. He also indicated how that success was achieved, and what the Society was undertaking to promote the general interest in the various branches of horticulture.

Mr. T. Frankland read a paper on *Plum-growing in Manitoba*, strongly recommending the improved native varieties of plums over any eastern kinds. Cheany, Desoto, and Weaver were among the best.

What the Past Year has Taught Us, was the subject of a practical address by A. P. Stevenson, of Nelson, Man. Superintendent McKay, of the Indian Head Experimental Farm, read a paper on *Fruit-growing in the Territories*. Some of the drawbacks he referred to are: cold winters, lack of snow, and May frosts. Red, white, and black currants, hardy gooseberries, and a few raspberries are about the only fruits that so far have been altogether successfully grown. Manitoba native plums, grown from pits, have so far given promise of good results. He recommended shelter, either board fence, or shelter belts of forest trees, planting all bushes on east side of edge or shelter belt. From his experience, it is practically useless to plant with northern exposure. Hedges three or four feet high are much better than when higher, as a high shelter cuts off the afternoon sun too early, and stopping the circulation of air, leaves the plants more liable to injury by summer frost.

J. J. Gunn, of Gonor, read an encouraging and helpful paper on *Beekeeping*, from his experience of many years in Manitoba. He had been remarkably successful last year, having taken over one hundred pounds of honey per hive.

A resolution was introduced by Mr. Scott urging on the Government the necessity of extending the Provincial game laws to protect the insectivorous birds, and unanimously carried.

Manitoba Veterinary Association.

The annual meeting of the Manitoba Veterinary Association was held in Winnipeg on February 7th. There was a large gathering of veterinarians present from different parts of the Province. The Sec.-Treas., Dr. Dunbar, for the past year, submitted his report, which was adopted, after which the appointment of officers for the present year took place, resulting as follows: President, H. D. Smith, Winnipeg; Vice-President, John Speirs, Virden; Sec.-Treas. and Registrar, W. J. Hinman, Winnipeg; Examining Committee, W. S. Henderson, Carberry, and Dr. Smith and Dr. Hinman, of Winnipeg. Dr. Hilton, of Portage la Prairie, read a paper on "Excise of the Mammary Gland," which was of interest to the meeting, and was fully discussed. A resolution was passed dealing with the question of tuberculosis in cattle, and submitted to a joint meeting of the live stock breeders for their insolation.

How Can We Produce the Export Steer?

[Paper read by Walter Lynch before the Manitoba and Northwest Cattle Breeders' Association.]

When your Committee asked me for a paper on "How to Produce the Export Steer," they gave me an easy job. But I have set myself a much harder task in trying to consider how we can produce him at a profit. If I were to simply answer your question, I would say, "Get calves and give them plenty of good food and attendance and some of them will grow into steers fit for export, in time." Of course they may, and probably will, cost you a good deal more money than you can get for them, but that is outside the record; besides, this part of my paper is for those who have money to lose in some way, and I do not know of any easier or more certain way of losing it, in legitimate business, than by handling haphazard cattle in a haphazard way. It beats poker "out of sight," and is not open to the charge of being a game of chance. There is no chance about it. But as these men do not need any advice from me, I will cut this part short and address myself to those who, like myself, have to get their bread and butter out of this business. I do not believe, and never have believed, that meat of any kind can be produced as a separate industry at present prices. I have seen it proved, theoretically, a thousand times that it can, but every time I have seen it so proved, I have been more firmly convinced it can not be done.

What I mean is, that the steer that gives no return, except his beef value, will not pay the cost of his production on land worth fifteen dollars or even ten dollars an acre, or on land where the rent and taxes amount to one dollar a year (I am referring to wild land), just the same as a pig will not make a profit if fed entirely on marketable grain at fair prices. Then how are we to get him? I think I see three ways of doing it, but each of them has some disadvantages. The first way is to steal him, as nearly fit for market as possible. The second way is to raise him at some other person's expense. And the third way is to raise him ourselves in connection with other industries—sometimes called "mixed farming." The first way is the easiest, as well as the most ancient and honorable way of "raising cattle," but it has several disadvantages. Oftentimes the stealer does not take kindly to the operation, and sometimes makes trouble about it at the time or afterward. But even a greater disadvantage is the difficulty in finding cattle an honest man can steal without forfeiting his self-respect, for there are a terrible lot of cattle that are not only a disgrace to their owners, but would be even a greater disgrace to the man who stole them.

The second way, "Raising them at some other person's expense." There are several ways of doing this. One of them was well illustrated when Sandy told Toneel, "Tugal was in jail for stealing a cow!" "Stealing a cow," said Toneel; "what for ta fool will not pocht ta cow, and not pay for her!" But as this way is a little worse than stealing her, we will not consider it. What I had in view when I spoke of raising them at some other person's expense, was the huge amount of vacant land in the newer parts of this country where a man may graze his cattle and cut hay for them free, or nearly so. Here a good lively theorist can figure out fortunes that dwarf the Yukon gold finders into pigmies. We will figure on it later on, but I first want to stop here to say that I believe the first step towards a systematic production of first-class steers for export, either dead or alive, will be taken when the older and more expensive land that is now devoted entirely to wheat-growing shall have struck—when their fertility is so far exhausted that wheat-growing alone will not be profitable. And that time is probably much nearer than many of us anticipate. Then the wheat-grower will try how much manure he can make, instead of, as now, how much he can destroy, and if he has not carried the exhausting process too far, will grow coarser grain for the purpose of feeding to make manure, which will then have a cash value which he will count a part of his profit on feeding. For this purpose he will go to the ranges and buy steers at thirty months old to finish for export at three years. He will have to have good cattle, for he cannot afford to feed poor ones; and the ranchman will not only have to breed a little better, but he will also have to feed a little better, for the first year, at least, and furnish a steer weighing 1,200 pounds off the grass at thirty months. For this steer the farmer will pay three cents per pound and finish him to 1,500 pounds at four and a-half cents per pound. That, with the manure, will be a fair profit, no

more. How will the ranchman, on free land, come out on such a deal? Let us see. The cow to produce a steer of that kind must be a good one and suited for the purpose, and at three years old will be worth as much as a steer at thirty months—\$36. He must get interest on that investment, a fair allowance for depreciation in value and insurance, service of bull, cost of keep, and twenty per cent. added for failure to breed one year in five, which I figure out in this way:

Interest on cost of cow at 6%.....	\$ 2 16	
Depreciation in value, 10%.....	3 60	
Service of bull.....	2 00	
Keep of cow and calf for one year, including grain for calf.....	12 00	
Insurance, say.....	24	
	\$20 00	
And twenty per cent.....	4 00	
	\$24 00	
Less 20% of cost of wintering 1 calf.....	1 40	
	\$22 60	At 1 year cost of steer.
Cost of keeping steer 18 months.....	6 00	
Insurance, say.....	40	
	\$29 00	At 30 months cost of steer.

Leaving the ranchman \$7 for shelter and profit. That is a fair profit, but no more. Still, it probably beats the Klondike. If he had to sell for 2½ cents, he would still have a profit of \$1. But if he had to pay a dollar an acre in rent and taxes he would just be in the hole \$8 or \$14, according to whether he sold for 2½ or 3 cents. These figures are for the snow belt, where cattle have to be fed and sheltered all winter, and they may not be absolutely correct, but I don't think they are very far out; if they are, I suppose I will hear of it. On the ranges proper, further west, they may be raised a little cheaper, but the larger percentage of failures to breed will go a good way towards equalizing their cost. Then these wilder cattle will not feed quite so well at first and will probably be worth a little less to the feeder. I have figured the increase in a domestic herd at eighty per cent., but I am told by good authorities that sixty per cent. is more than an average on the ranges. In fact, I have heard ranchmen say if they could get good year-olds at a fair price they would never raise a calf. This is one case where figures and experience agree, and I want you to notice particularly that it is the first year of the steer's life that knocks the profit off of him, for it is evident if the steer on free land costs \$22.60 at one year old, he would cost, on good wheat land, more at that age than he would be worth at thirty months.

Since writing the above I have seen a report of an experiment by Prof. Shaw, of Minneapolis, of the cost of raising a steer on foods at their market value there. He charges only the actual value of the food consumed, and estimates the value of the manure to be equal to the cost of straw for bedding, attendance and interest on investment, which in his case is not much, as he got his calves for nothing, which is all very well for the man who gets them, but the man who gets no return from his cow but the calf, will not get rich very rapidly in that way; he simply made the Professor a present of \$15 on each calf, which in a general way would have to be added to the cost of the steer. The food for the Professor's calves cost for the first year \$15 each. My estimate makes the calf cost about \$15 when dropped, making the cost of the steer at one year \$30 instead of \$15, leaving a profit of \$4 on the finished steer instead of \$19. And I believe these figures are not too high on land having even a low rental value, even if we value the manure as high as the Professor does. It may, and probably will very soon, be worth that much here, but at present I think most Manitoba farmers will dispute the valuation.

This brings me to my third and last way of producing this steer: "Raising him in connection with other industries." I would say as part of a system of "mixed farming," only I am thoroughly sick of hearing that expression, as I suppose most of you are; and as I do not want to be responsible for any profanity, I call it something else, though in reality it means the same thing. Evidently \$30 is too much to pay for a year-old steer. I do not see how we can reduce that cost; but we can offset it. We can do in this case what is done in all well-regulated families, make the parents pay for the youngster's keep up to a certain age. But, as is the case in many well-regulated families, the papa is a bit of a rake, and will not support his offspring, the mother must. She must not only feed it up to a certain age, but during that time she must lay by something to provide him with a Xmas dinner. Now, the cow that will produce a steer suitable for feeding is not one that will make three pounds of butter a day for 400 days in a year. But we can cut that estimate a little; supposing her to make one-third of that amount for one-half of that time, or 200 pounds of butter a year, and feed her calf, and she has solved the problem—\$25 for butter and \$5 for feeding her calf, and we have him at a year old for nothing. But we won't ask that; such a cow will need and deserve a little extra feed, and we can give her a considerable and still have the calf at one year for \$10. Prof. Shaw's steers weighed nearly 700 lbs. at a year old, which would make them cost about 1½ cents per lb. The man who cannot take them at that price and finish them at a profit is beyond redemption, and there is no use preaching to him. In this estimate there is a charge of \$2 for service of bull, but there is no reason for this on a well-conducted farm. There is no earthly reason why a bull should not work every day the same as any other head of a family, and

contribute something to their support instead of being a charge on them, and his offspring be all the better for it. I said he was a bit of a rake, but that is because he has been taught to be one; but it would be nearly as easy and a good deal safer to teach him to be a slave. Prof. Shaw closes his paper by saying that farmers raising their own steers need not fear the competition of range cattle. This paper would almost indicate danger to the ranchman from the farmers, but it can only be done on a small scale, for on a farm a man might raise half a dozen steers at a profit, where a dozen would be raised at a loss. I said early in this paper a man could only afford to handle good cattle, and I have gone on that basis throughout. Prof. Shaw had pure Shorthorns; if he had had something better, no doubt he would have made more money out of them. If any one can find much fault with these figures, I hope it will be in the way of showing that steers may be produced cheaper and sold dearer; but I would warn them beforehand, that when people talk of making two pounds of meat out of one pound of grass, or even making one pound of meat out of two or three pounds of grain, they are away ahead of the average feeder, and he is inclined to accept all such statements with a very small grain of salt.

Horse Breeders Meet.

The Horse Breeders' Association of Manitoba and the N.-W. T. held their annual meeting in the City Hall, Winnipeg, Thursday, February 8th. There was a good attendance and important questions were discussed and disposed of. One decision of importance was that hereafter the horse breeders hold their annual meeting the same time of year as the other live stock associations. The election of officers for the ensuing year resulted as follows: President, Dr. Rutherford, M. P., Portage la Prairie; Vice-President for Manitoba, R. L. M. Power, Carberry; Vice-President for the N.-W. T., C. W. Peterson, Regina; Secretary-Treasurer, W. L. Puxley, Winnipeg. Executive Committee—John Hanbury, Brandon, Representative for the Standard-breds; John Wishart, Portage la Prairie, Hackneys; N. Boyd, Carberry, Thoroughbreds; Glen Campbell, Dauphin, Shires; John E. Smith, Brandon, Clydesdales; J. W. Knittel, Boissevain, Coach Horses; also Dr. Thompson and Dr. Shaw, Carberry, and Geo. Harcourt, Winnipeg.

Bog Spavin.

Professor McCall, Glasgow, at a recent meeting of veterinarians held at Manchester, Eng., is said by the *Horseman* to have given his opinion on bog spavin as an unsoundness, and on the merits of the new treatment introduced by Mr. Deans, of Bishop Auckland. Bog spavin, whether large or small, constituted legal unsoundness; but he ventured to say in ninety-five cases out of one hundred they in no way affected the animal's usefulness and powers of endurance. He said he had paid the greatest attention to these enlarged capsules of the hock, and rarely, in comparison to their numbers, had he found lameness of the hock associated with their presence. Indeed, if a horse pleased him in other respects, and had the power of free flexion and extension of the hock joints, although he could not pass the animal as sound, he would seldom reject him. Professor McCall maintained that a horse with a straight conformation of the hind limb invariably has the capsules of his hock joints distended, and the straighter the limb the more distended was the swelling or so-called bog spavin in front. "In Scotland," said Professor McCall, an eminent breeder of Clydesdales himself, "we have a family of Clydesdale horses in which this conformation is conspicuous. The celebrated Prince of Wales stallion belonged to this family, and, being one of the most impressive sires, he has transmitted the same conformation of hocks to a large number of his progeny. He lived for twenty years and averaged one hundred mares per annum. When four years old, on account of the conformation of his hocks, he was condemned for bog spavins, and lost the prize for which he was contending. I knew the horse during the whole of his life. He never was lame, and to the day of his death his action was the admiration of Clydesdale breeders." The straight conformation of limb and hock joint, owing to the greater extension of the joint and consequent pressing forward of the synovial fluid when the joint is in a state of extension—as when the foot is on the ground—leads to a bulging outwards and inwards of the capsule, which thus becomes a permanent defect, and no ordinary treatment, he said, will reduce the swelling. As to the use of Mr. Deans' aspirator and injector, and the fluid he recommends to be injected, Professor McCall, after making experiments on his own animals and others, considered it a hazardous and dangerous operation. In some cases it was a great success, in others a complete failure, or even worse; and in all, if the operation be properly performed, viz., the joint exhausted of its synovial secretion, and thereafter injected with the liquid, it causes excruciating pain and suffering for not less than twenty-four hours. He was of opinion that the fluid injected is too concentrated and too much of an irritant to the delicate synovial membrane, and that only a proportion, and not the whole, of the synovial fluid within the joint should be aspirated at one operation. It is only fair to add that Mr. Deans, in reply to Professor McCall's criticisms, said that "having operated upon hundreds of cases, all for Clydesdale breeders, without any bad results, he had every confidence in the success of the operation."

The Value of Crop Statistics.

Mr. C. W. Peterson, the Deputy Commissioner of Agriculture for the Northwest Territories, in addressing a series of farmers' meetings recently, gave some interesting information regarding the work the Department, which was only organized last June, was doing in the way of discovering, developing and utilizing the resources of the Territories. In speaking on crop statistics Mr. Peterson said:

"The collection of statistics was a more important matter than was often recognized. Uncertainty in the knowledge of production was always a factor in depreciating prices. He would give an instance. In the Kootenay there was a demand for oats. Now, as the quantity of oats produced in the Northwest was unknown, the dealers came, especially along the Edmonton line, and offered very low prices, and the farmers having no means of ascertaining what the demand was likely to be, nor what supply there was, sold at the first opportunity, perhaps at 15c. or 20c. a bushel, sooner than run any risk. One of the objects of the department was to find out what was the demand, what was the supply, and to give the information to the farmers."

Rotted Manure on Timothy Sod Better Than Summer-fallow on Heavy Soil.

To the Editor FARMER'S ADVOCATE:

We pile our manure in large piles to rot. While it is easier to put it on the field from the stable, yet I think it safer to let it heat and rot in pile to destroy the vitality of weed seeds. We haul manure from stable on wooden sleigh three feet wide and eight feet long. With a well-broken, strong horse we can clean out a stable of fifteen cows and six horses in one load. By mixing the manure from cow and horse stables it soon heats, and as the pile keeps going down, we keep on drawing to same pile all winter. In the spring and summer it is fit and safe to put on the land. Applying manure, we have top dressed late sown barley to good effect. We also top dress timothy meadows, and harrow with heavy harrows, until 15th or 20th of June—about five loads per acre—with good result. Then the coarser manure we spread on timothy pastures. This does not seem to help the grass much the first year, because it is late in the season when put on, but the next year it improves the grass very much. We cut hay early on meadows we intend to break up. As soon as hay is off, we plow down the sod, top dress with manure and disk in, then that field is ready for wheat the following spring, and there we get our best wheat. We don't put manure on summer-fallow, as our land is very heavy and grows too much straw. In fact, we don't summer fallow very much. I think it better to seed down to timothy, cut once or twice, and then pasture. For heavy land, with good natural drainage, I think this plan is best, but I don't think it would suit lighter soils.

Our new meadows were fairly good; the old meadows were very light, even where manure was put on in the spring. May and June were very dry in Southern Manitoba. One piece of old meadow we did not cut, but on that piece the cattle got splendid fall feed, and I think it was a very profitable piece of grass land. I had a piece of Bromegrass, but I think under the same treatment timothy would have yielded more hay.

Municipality Louise, Man.

J. J. RING.

Finishing Period for Beef Cattle.

The finishing period for fat cattle requires close observation and careful attention to details on the part of the feeder. A successful feeder is born, not made, and it requires experience and close study to run a beef animal to its full capacity and not overdo it. An animal "stalled" or "off its feed" through indigestion or impaction may lose more in weight in a week or ten days than can be put on again in the next month. An experienced feeder who can push a bunch of cattle to their full capacity, and have them always ready for their feed, might be compared to a skillful engineer in a large manufactory who can detect the throwing off of a belt in some distant part of the building by a change in the motion or hum of his engine. With the engineer his ear will detect the change, and with the feeder his experienced eye will enable him to know when he is approaching the "safety line."

The results of several experiments would go to show that a gradually increasing quantity of meal per week or per month is better and cheaper than a given quantity fed daily throughout the feeding period. For example, say 1 pound for the first month, 2 pounds for the second month, 4 pounds for third, and 6 to 7 pounds for fourth month or finishing period. Any grains that the farmer can grow or buy to advantage may be used. A good mixture is equal parts by weight of ground oats, barley and peas, with half a part of bran. Good oat straw cut and mixed with ensilage morning and night (say 5 parts of straw to 50 pounds ensilage), and a feed of 5 parts of pulped turnips and 5 pounds long hay at noon, with the addition of the meal given above, is a very good and cheap ration for feeding beef cattle. On the average of ensilage and straw an average of a stable will eat 15 to 18 pounds morning and night. It is not always necessary to feed three times a day, as it is unnecessary, besides adding to the cost of feed when fed twice per day an animal will be inclined to eat too much and overload the stomach. We will feed

clover hay, plenty of roots and ensilage, a fair allowance of meal, and regular supply of salt, condiments or artificial food are unnecessary. The hours for feeding may be 5.30 a. m., 11.30 a. m., and 5.30 p. m. All animals should be watered at least twice per day, which will prevent them drinking too much cold water at one time.

Export cattle would be much the better of a little exercise, say for a few minutes every second day. The advantages are: Keeping the legs and digestive organs in good shape, enabling them to stand the journey by rail and water much better, without the large loss by shrinkage which so many stall-fed animals loose.

Beef animals thoroughly enjoy a good currying and brushing, and it is an advantage, as it keeps the skin clean, and the animals are more content; they should have it at least two or three times per week. Beef cattle require plenty of light and good ventilation in the buildings. The temperature is better about 5 degrees cooler than for dairy cows, or about 45 degrees.

Cattle fed regularly at the same hour, by the same man, will easily let him know when feeding time arrives, and he could set his watch by their actions and not be many minutes astray.

R. R. ELLIOTT, Herdsman.

Central Experimental Farm.

Fattening Cattle Without Roots or Ensilage.

Mr. John P. Beattie's stables in Dorchester each season contain a good bunch of steers, finished for export about June. The present lot were purchased. They are fed tied with chains in double stalls, and are let out once a day for exercise and water pumped from a well in a sheltered location near the stable. To destroy vermin the most thoroughly effective application tried is a mixture of machine oil and coal oil (one third of the latter), rubbed on with a brush. These cattle are being fattened without the use either of roots or ensilage. With the last feed of meal each evening is given a tablespoonful of a mixture one-third sulphur and two-thirds Epsom salts. This has been done for some three weeks past with apparently very satisfactory results, so far as the thrift and condition of the steers are concerned. Up to this time the chop fed has been a mixture of oats and barley, the former predominating, the two being grown together. They have been given four feeds of two quarts each per day, beginning with a feed the first thing in the morning, followed by a feed of straw to pick over, what is left being used for bedding. Between 10 and 11 o'clock the cattle are out for water and the stable cleaned. On coming in they get the second grain feed, followed by hay. In the afternoon they again receive grain and straw, and in the evening the fourth feed of grain, followed by hay. From now on the meal feed will consist of the oats and barley mixture, with American corn added, ground in about equal quantities, and the feeds increased to three quarts each four times per day or more if they will take it to advantage. At this writing the bunch were doing exceedingly well.

A Philistine Colt Breaker.

Albert G. Hubbard, horse-breeder, who hails from the town of East Aurora, center of the horse and literary worlds, gives a lesson in the art of colt-breaking in the last issue of his periodical of protest, *The Philistine*. He says: Some of Theodore Roosevelt's admirers a short time ago presented him with a statuette, entitled, "The Bronco Buster." The work was done by Frederick Remington, and shows a lank, lean horse in a perfect agony of fear. So well has the talented artist done his task that the poor horse seems to be sweating blood at every pore; his eyes are bursting from their sockets, the savage bit is tearing the delicate membranes of his mouth, while the long, sharp spur on the right foot of the rider is ripping his hide from ear to tail.

A word with you: In horsemanship I am no theorist, writing from the sixteenth floor of a city office building. I own horses, raise colts, and train them to saddle and harness. I have ridden horses since I wore dresses. I have had the sole care of horses on the plains, in pasture, on the track and in the barn; and this I know: the horse is not a savage animal. Whenever a so-called "vicious horse" is found, it is one that has been monkeyed with by a "bronco buster."

The process of "busting broncos" is to lasso an animal that has never had a man's hand on it, choke it into submission, clap a saddle on its back, cinch this saddle with two girths until the horse can scarcely breathe, then leap onto its back and by whip, curb and spur, followed up with wild hallooing, force the poor beast into a paroxysm of revolt. Then the rider simply sticks until the frantic, fear-stricken animal exhausts its strength. To break the spirit of the proud animal is the result desired.

The other way to break horses is to work with them slowly, "fuss" around them, get acquainted with them, and when the animal finds no harm is intended, put the harness on him and drive off. The horse is the most cheerful and willing servant man has, excepting the dog. And if we treated horses with the same familiarity in colthood that we do dogs in puppyhood, in a few generations your horse would be just as responsive and affectionate as your dog. The horse really wants to serve you; he knows you feed him and care for him, and he will be grateful if you give him a chance.

In the village of East Aurora there is a farm where are kept over six hundred trotting blood

horses. Many men are constantly engaged in training colts, and for one of these men to get into a struggle or a fight with an animal is regarded as sufficient grounds for that man's dismissal. The superintendent of this farm tells me that the entire scheme of training must be toward securing the confidence of the animal; keep him cheerful and conserve and develop his courage. To subdue a horse and break his spirit is as villainous a thing to do as to break the spirit of a man, or the heart of a woman. There are now various horse ranches in the West where no "bronco buster" is allowed to set foot. The horses are trained by gentle means. It takes a little more time, but gives you a better horse. And then it eases up your conscience—if you have such a thing.

Teddy Roosevelt is a pretty good fellow, but he is getting to a time in life when he should leave brutality behind. His desire should no longer be towards "busting" and killing things. Let him sink that statuette, which reveals the very quintessence of shocking cruelty, deep in Oyster Bay.—*The Horseman*.

Feeding Calves of Beef Breeds.—A Successful Feeder's Methods.

In regard to feeding and management of calves the first six or seven months, intended for a beef animal: If the calf is from a fleshy cow and not a very heavy milker—that is, if she won't give any more milk than will raise the calf well—I would let the calf suck the cow three times a day for four weeks, then twice a day. By that time it will start to eat a few pulped turnips with a little ground oat and pea chop mixed with the turnips. Just commence with a handful and keep increasing it every day as the calf will eat it up clean. If it does not eat it up clean, take it out and give it to the hogs, or something that will eat it, and give it a little fresh and a little clover hay in the same manner. I prefer letting the calf run loose in a box stall behind the cows, the larger the better, only don't have too many together if the pen is small, and they will go ahead till they are seven months old, and then you can be weaned and with plenty of food and exercise they will grow right along.

On the other hand, if you have a cow that will give eighteen or twenty quarts a day, I would say milk her and feed the calf on skimmed milk. As soon as the calf is dropped, take it away from the cow and don't let her see it, if possible, and give it a good hand rubbing with straw till it is dry. Then milk the cow and give the calf three or four quarts of the milk daily in three feeds, and keep increasing it a little as the calf grows, till it will take six quarts. Feed it three times a day. When it is six days old, start and feed it a little skimmed milk, say a quart, mixed with the whole milk, and keep increasing it till you get it to all skimmed milk, but be sure and always make the skimmed milk lukewarm by putting it on the stove a few minutes, and then there is no danger of chilling the calf and having it going around with its back humped up, and the first thing you know the calf is sick. A little care at this age of the calf will increase its value a great deal for beefing purposes. In regard to feeding the calf prepared food or cooked flax-seed meal, etc., I think it is useless; that is, if your cows are properly fed with clover hay, a little meal of some kind, and what straw they will eat, and a sufficient quantity of turnips to keep their bowels in good condition, and I will guarantee the calf will do all right. Feed it some pulped turnips mixed with a little meal and clover hay—the same I advised feeding the calf that sucked the cow, and when it is seven months old it will be a little thinner than the one that sucked the cow, but when it is thirty months old you won't be able to tell which one sucked the cow or fed on skimmed milk, providing they are all bred the same.

JAMES LEASK.

Ontario Co., Ont.

The Storage of Ice.

It was necessary to give information on the methods of storing ice which could be adopted with the least expense and the greatest success in keeping the ice available for use during the warm season. In the storage of ice in a cheap ice-house, the following points are essential to prevent waste by melting:—

1. Protection of the ice from currents of air. (These are likely to get in around the bottom of the building.)

2. Provision for the drainage of any water from melted ice.

3. Close packing of the ice, any spaces between the blocks being packed with pieces of broken ice when the ice house is being filled during cold weather.

4. Ventilation over the covering which protects the ice from the ordinary atmosphere.

Ice is melted only when the temperature is above 32° Fahr. The increase in temperature comes from some source external to the ice. When a lump of ice is left lying on the ground in warm weather, it is melted by the heat from the ground on which it lies, and by the heat from the air which surrounds it. To prevent that, insulating materials of different sorts have been used. An insulating material for this purpose is any substance which prevents, or almost wholly prevents, the passage through itself of the form of energy known as heat. Different substances conduct heat more or less rapidly, and are spoken of as being good conductors or poor conductors of heat. Whatever is a good conductor of heat would be a very poor insulating material; and a substance is a good insulator in proportion as it is a poor conductor or non-conductor of heat.

PROF. J. W. ROBERTSON.

Dominion Shorthorn Breeders' Association Annual Meeting.

The 13th annual meeting of the Dominion Shorthorn Breeders' Association was held in Shaftesbury Hall, Toronto, Feb. 8th.

The president, Mr. James Russell, of Richmond Hill, occupied the chair, in his address congratulated the Association on its growing time, which is evidenced by the large increase in registrations, and the very satisfactory condition of the Association's bank account, as well as in the brisk trade being done by the breeders.

Whereas, this Association has learned that purchasers of Shorthorn cattle for exportation to the United States are put to much inconvenience and delay in shipment because of the necessity, under present regulations, of registering in the American Herd Book in order to pass the customs.

Resolved further: That a committee, consisting of Hon. John Dryden, John L. Hobson, Richard Gibson, Arthur Johnston, and Henry Wade, be hereby appointed to enlist the co-operation of the American Shorthorn Association in presenting this view to the proper authorities at Washington.

A resolution was adopted requiring the signature of both the breeder and the owner of animals presented for registration, and, in case of death, the signature of the proper representative of the estate, the owner of the dam at the time of service being recognized as the breeder.

Resolved further: That a committee, consisting of Hon. John Dryden, John L. Hobson, Richard Gibson, Arthur Johnston, and Henry Wade, be hereby appointed to enlist the co-operation of the American Shorthorn Association in presenting this view to the proper authorities at Washington.

THE TUBERCULIN TEST. The following resolution was adopted: Moved by R. Gibson, seconded by Wm. Linton, that we, the Shorthorn breeders of Canada, in our annual meeting, do hereby ask the Dominion Government to allow cattle to come into Canada from Great Britain without being tested for tuberculosis.

LIBERAL MONEY GRANTS FOR PRIZES. On motion, it was decided to grant \$750 towards the prize list for Shorthorns at the Toronto Industrial, or the Western Fair at London, whichever offers the best terms by way of supplementing the amount offered in prizes in this class.

Mr. J. C. Hanley, of Read, Ont., contributed an interesting paper on "What Shorthorns have done for the improvement of Canadian cattle," and D. Alexander, Bridgen, an able article on the "Tuberculin test," the latter, unfortunately, being received too late to be read at the meeting.

OFFICERS ELECTED. The officers for 1890 were elected, as follows:—President, James Russell, Richmond Hill; First Vice-President, John I. Hobson, Guelph; Second Vice-President, Robt. Miller, Stouffville. Ex-Presidents, life members—Hon. John Dryden, Brooklin; Richard Gibson, Delaware; A. Johnston, Greenwood, Vice-Presidents from Provinces—Wm. Linton, Aurora, Ont.; F. G. Boyver, Georgetown, P. E. I.; J. H. Lader, Ladner's Landing, B. C.; James A. Cochran, Hillhurst, Que.; Geo. A. Fawcett, Sackville, N. B.; W. D. Shattuck, Davisburg, Alta.; C. A. Archibald, Truro, N. S.; W. E. Heuback, Touchwood Hills, Assin.; Hon. Thomas Greenwood, Crystal City, Man. Board of Directors: A list—W. J. Biggins, Clinton; David Rae, Fergus; James Tolton, Walkerton; John Davidson, Ashburn; W. D. Platt, Hamilton; B list—W. D. Cargill, Cargill; A. W. Smith, Maple Lodge; John Isaac, Markham; W. G. Pettit, Freeman; C. M. Simmons, Ivan; C list—Edward Jeffs, Bondhead; H. Smith, Hay; T. E. Robson, Iderton; F. I. Patten, M. D., St. George; James M. Gardhouse, Highfield. Executive and Finance Committee—James Russell, Richmond Hill, President; John I. Hobson, Mosboro; William Linton, Aurora; Robert Miller, Stouffville; Arthur Johnston, Greenwood. Delegates to Industrial Exhibition, Hon. John Dryden, Brooklin; John I. Hobson, Mosboro. Delegates to Western Fair, Henry Smith, Hay; C. M. Simmons, Ivan. Delegates to Central Fair, Ottawa, R. R. Sangster, Lancaster; D. McLaren, Dunmore. Delegates to Provincial Exhibition, Nova Scotia, C. O. Chase, Church street, Cornwallis, N. S.; C. W. Holmes, Amherst, N. S. Delegates to Provincial Exhibition, New Brunswick, Senator Josiah Wood, Sackville, N. B.; Geo. A. Fawcett, Sackville, N. B. Delegates to Provincial Exhibition, Prince Edward Island, C. C. Gardiner, Charlottetown, P. E. I.; F. G. Boyver, Georgetown, P. E. I. Secretary and Editor, Henry Wade, Toronto.

Annual Meeting of the Holstein-Friesian Association.

The sixteenth annual meeting of the Canadian Holstein-Friesian Association was held at the Albion Hotel, Toronto, on Tuesday, February 7th. The attendance was good, and included several visitors from the United States. The President, Mr. Wm. G. Ellis, occupied the chair, and others present were: Messrs. A. C. Hallman, New Dundee; G. A. Gilroy, Glen Buell; T. W. Charlton, St. George; Alfred Rice and George Rice, Currie's, Ont.; Wm. Shunk, Sherwood; Wm. Armstrong, Locust Hill, Ont.; H. Bollert, Cassel; R. S. Stevenson, Ancaster; J. H. Patten, Paris; Wm. Suhring, Sebringville; A. Hoover, Jr., Emery; Edward Adams, Toronto; Henry Welsh, Weston; John Clarkson, Summerville; Wm. McClure, Norval; R. W. Walker, Utica; S. Shunk, Jr., Edgely; G. W. Clemons and W. A. Clemons, St. George; W. A. Matteson, Utica, N. Y.; Henry Stevens and Ralph J. Stevens, Lacona, N. Y.

The report of the Secretary showed that the business of the Association had increased forty per cent. during the past year, and although Vol. III. of the Herd Book had been printed and distributed free to members during the year, the satisfactory balance of \$621.76 is now in the treasury. The registrations for the year numbered 582, and the transfers 196, while 17 new members were added to the roll of the Association.

The sum of \$300 was voted in aid of the dairy tests at the Toronto, Ottawa, Winnipeg, Brandon, and the Provincial Fat Stock and Dairy Shows, provided that the rules of these tests were agreeable to the Association.

A committee was appointed to revise the Constitution, subject to the approval of the next general meeting, in order to

bring the Executive Committee into closer touch with the work of the Association.

The election of officers for 1890 resulted as follows: President, Wm. G. Ellis, Toronto; First Vice-President, A. C. Hallman, New Dundee; Second Vice-President, T. W. Charlton, St. George; Third Vice-President, Alfred Rice, Currie's; Fourth Vice-President, G. A. Gilroy, Glen Buell. Directors (two years): Wm. Shunk, Sherwood; A. Hoover, Jr., Emery. Directors (one year): H. Bollert, Cassel; R. S. Stevenson, Ancaster. Secretary-Treasurer, G. W. Clemons, St. George. Auditors: J. H. Patten, Paris; Wm. Suhring, Sebringville.

The salary of the Secretary-Treasurer was fixed at \$250 for the year.

Delegates to the different fairs were named as follows: Toronto—W. G. Ellis and Wm. Shunk; London—Edwin Scatcherd and J. W. Johnson; Ottawa—G. A. Gilroy and Joseph Fletcher; Montreal (in case a fair is held)—G. A. Gilroy and C. M. Keeler; Sherbrooke—John Pickering and Ogdin Sweet; St. John, N. B.—O. J. Peters; Winnipeg—Jas. Glennie and J. T. Hutchinson.

It was decided to return to the old plan of having one expert judge at Toronto Industrial, and the following were recommended as suitable for the position: Henry Van Dreser, Cobleskill, N. Y.; A. F. Cole, Morrisville Station, N. Y.; D. J. Hincley, South Brookfield, N. Y. For London—Messrs. Suhring, Charlton, Patten; Ottawa—Messrs. Bollert, Stevenson, Shunk; Montreal—Messrs. Shunk, Bollert, Hallman; Winnipeg and Brandon—Messrs. Charlton, A. Rice, Gilroy; Sherbrooke—Messrs. Fletcher and Clemons.

President Matteson and Mr. Henry Stevens, of the American Holstein-Friesian Association, addressed the meeting on the subject of the amalgamation of the Herd Books of the two Associations and requested that a committee of three members be appointed to meet a similar committee from the American Association for the purpose of discussing the advantages of such a course.

None of the Canadian breeders favored amalgamation, but it was decided that as a matter of courtesy such a committee should be appointed, and the President, Mr. W. G. Ellis, Mr. T. W. Charlton and the Secretary were named as members. The meeting then adjourned to meet again at Toronto next year.

The Canadian Clydesdale Horse Breeders' Association.

The thirteenth annual meeting of the Clydesdale Horse Breeders' Association was held at the Albion Hotel, Toronto, February 9th. Mr. Robert Davies, the retiring President, occupied the chair, and there was a good attendance. Mr. Henry Wade, the Secretary-Treasurer, presented the annual report, in which he stated that there had been a decided improvement in the demand for Clydesdales, increased interest



MR. J. H. GRISDALE, RECENTLY APPOINTED AGRICULTURIST AND LIVE STOCK EXPERIMENTER AT THE CENTRAL EXPERIMENTAL FARM, OTTAWA.

being manifest. With the improved demand has come a renewal of importations of breeding stock from the Old Country. One importer has brought out as many as eleven in the last year. Among those who have introduced new blood into the country have been Messrs. John Isaac, Markham; Dalgety Bros., Dundee, Scotland; and Glencoe, Ont.; and Arthur Johnston, Greenwood. There has also been a considerable movement of Clydesdales from Ontario to points in Northwest. Mr. John A. Turner, Millarville, Alta., has taken nine head from Messrs. Sorby, Guelph, and Mr. Chas. Michie, Pavia, Alta., has been another purchaser. Registrations during the year numbered 252, as against 99 in the previous year. The membership has increased from 29 in 1897 to 69 paid members for 1898. Volume IX. of the Stud Book has been printed, and it probably will not be long before there will be pedigrees enough on hand to print Volume X. The financial statement showed receipts of \$503.32, and expenditures of \$468.15, leaving a balance of \$94.17.

Mr. Davies, in his annual address, congratulated the members upon the present condition of the horse market. The demand, he said, while not brisk, was certain, and, as in everything else, the superior article could be disposed of most readily, and at a profit. He spoke in strong terms of the necessity of perseverance in the work of improving the stock, and for vigilance in the advancing of the interests of the breeders. They should consider the animal first, and the price it would bring afterwards. He was confident that their branch of the horse trade had a promising future.

Officers were elected as follows: President, Peter Christie, Manchester; first Vice-President, John Davidson, Ashburn; Vice-President for Ontario, Douglas Sorby, Guelph; Vice-President for Quebec, Robert Ness, Howick, Que.; Vice-President for Northwest Territories, John A. Turner, Calgary, Alta.; Vice-President for Manitoba, J. E. Smith, Brandon. Directors—Robert Beith, M. P., Bowmanville; Robert Davies, Toronto; George Cockburn, Baltimore; John Vipond, Brooklin; Robert Graham, Claremont; Alex. Doherty, Ellesmere; A. Innes, Clinton.

Delegates to the Industrial Exhibition—Peter Christie, Manchester, and O. Sorby, Guelph. To the Western Fair—A. Innes, Clinton, and J. Henderson, Belton. To the Ottawa Exhibition—Robert Davies, Toronto, and Robert Beith, M. P., Bowmanville. To the Montreal Exhibition—R. Ness, Howick, Que. To the Horse Breeders' Association—Robert Graham, Claremont, and Robert Davies, Toronto.

A resolution was adopted respecting the export of stock to the United States, upon the lines of the resolutions previously

adopted by the Shorthorn Association and the Shire Horse Breeders, asking for the recognition of certificates of registration in the Canadian Clydesdale Record to pass the customs free of duty. Another resolution was passed authorizing the opening of negotiations with the railway companies, in order to obtain the same terms for shipping horses as those now enjoyed by the Dominion Cattle Breeders' Association. It was also decided to give \$50 to the Spring Horse Show. The prize will be given for the best draft team, to be sired by a registered Clydesdale stallion.

Dominion Cattle Breeders' Association.

The annual meeting of the Dominion Cattle Breeders' Association was held in Shaftesbury Hall, Toronto, Feb. 8th. There was a very fair attendance of members, and the chair was occupied by the President, Mr. J. I. Hobson, of Guelph. In a brief address Mr. Hobson referred to the good work which was being done by the Association, and the increased interest which the farmers were showing in the organization. In the course of his remarks he spoke of the falling off in the quality of our export cattle as a matter requiring the serious consideration of the Association and of farmers generally throughout the Dominion, a condition which can only be surmounted by improved breeding and feeding of our stock.

Mr. F. W. Hodson, the Secretary, in his annual report, explained the regulations governing shipments of registered stock and the privileges which had been obtained by the Association in that respect.

It was decided to appoint a committee to wait on the Government to try and secure a grant for the promotion of interprovincial trade, and Dr. Mills and Messrs. A. Johnston and R. Gibson were chosen.

A resolution was adopted asking the Dominion Government to allow cattle to be imported from Great Britain without being tested for tuberculosis, and from the United States as soon as that country agrees to reciprocity.

The election of officers resulted as follows: President, John I. Hobson, Guelph; 1st Vice-President, H. D. Smith, Compton, Que.; 2nd Vice-President, Henry Wade, Toronto; Secretary-Treasurer, F. W. Hodson, Toronto; Vice-Presidents representing the different Provinces—Ontario, J. C. Snell, London; Manitoba, Hon. Thos. Greenwood, Winnipeg; Northwest Territories, E. Cochran, High River; Quebec, Robt. Ness, Howick; Nova Scotia, W. W. Black, Anson; New Brunswick, T. A. Peters, Fredericton; Prince Edward Island, Hon. D. Ferguson, Charlottetown; British Columbia, A. C. Wells, Chilliwack; Newfoundland, Hon. Thos. C. Duder, St. John's. Auditor, J. M. Duff, Guelph. Directors: Shorthorns—A. Johnston, Greenwood; Herefords—H. D. Smith, Compton; Polled Angus—Jas. Bowman, Guelph; Galloways—D. McCrae, Guelph; Ayrshires—D. Drummond, Brooklin; Hottentots, G. W. Clemons, St. George; Jerseys—R. Gibson, Delaware; Guernseys—W. E. Butler, Dereham Centre; Ontario Agricultural College, G. E. Day, Guelph. Representatives to Fair Boards: Toronto Industrial—G. E. Day, Guelph; J. M. Gardhouse, Highfield. Ottawa—J. G. Clark, Ottawa; J. C. Smith, Hintonburg. London—R. Gibson, Delaware; Capt. T. E. Robson, Iderton. Stratford—G. W. Clemons, St. George, and J. R. Alexander, Brantford.

Dominion Sheep Breeders' Association Annual Meeting.

The annual meeting of the Dominion Sheep Breeders' Association was held in Shaftesbury Hall, Toronto, on Feb. 7th, the President, Mr. D. G. Hamner, in the chair. The attendance of members was large and much enthusiasm prevailed. In his opening address the President congratulated the members on the successful and profitable year which the breeders had experienced, the demand for pure-bred sheep having been steady, at improved prices. The unqualified success of the Provincial Winter Show, under the joint auspices of the Cattle, Sheep and Swine Breeders' Association, was also referred to as being most gratifying and encouraging, the exhibit of sheep being most creditable and of a high standard of excellence.

The Secretary's report referred to considerable length to the work and enterprises of the Association, dealing especially with the transportation question and the reduced freight rates secured from the railway companies for pure-bred registered stock, which has largely facilitated and increased interprovincial trade and promises to result in great good to the farmers throughout the Dominion by the distribution of improved stock.

Information having reached the Association that unscrupulous parties have been taking unfair advantage of the special reduced rates of freight for registered stock by the use of bogus certificates of registration, the following resolution was adopted:—

Moved by D. McCrae, seconded by W. Linton—That, it having come to our knowledge that certain parties have been shipping stock fraudulently under our special privileges, we hereby request our directors to take such steps as may aid the railway companies to prevent such fraud in future, and bring the guilty parties in the instance stated to justice.

ELECTION OF OFFICERS. The following officers and directors were elected: President, D. G. Hamner, Burford; Vice-President, A. W. Smith, Maple Lodge; Secretary-Treasurer, F. W. Hodson, Toronto. Directors: Ontario—D. McCrae, Guelph; Leicesters, W. White-law, Guelph; Hampshire, John Kelly, Shakespear; Dorset, R. H. Harding, Thorndale; Southdowns, John Jackson, Abingdon; Oxfords, J. Tolton, Walkerton; Lincoln, W. M. Smith, Fairfield Plains; Shropshires, R. Gibson, Delaware; Ontario Agricultural College, G. E. Day, O. A. C., Guelph; General Director, J. C. Snell, London. Auditor—J. M. Duff, Guelph. Representatives to Fair Boards: Toronto Industrial Exhibition, F. W. Howton, Toronto, and Jas. Russell, Richmond Hill; Ottawa, Jos. Yuill, Carleton Place; Montreal, H. D. Smith, Compton, Que.; London, A. W. Smith, Maple Lodge, and R. H. Harding, Thorndale. Committees—Executive and Transportation, President, Vice-President, Secretary, and Messrs. John Jackson and Richard Gibson. Delegates to the Board of the Provincial Winter Fair—Jas. Tolton, A. W. Smith, and R. H. Harding.

How a Carload of Steers Were Fed.

To the Editor FARMER'S ADVOCATE: SIR,—We shipped two carloads of cattle yesterday to Glasgow by the way of Portland. One of the carloads was fed in our own stables. In regards to feeding them, they were finished on cut feed made out of corn (sown in drills three and one-half feet apart and stalks eight to ten inches apart in the row), unhusked, and wheat chaff, with roots pulped up, with two pulls of water added to it, fed three times a day. The chop-stuff was one quart oats, two quarts corn, one quart of bran, mixed; fed three times a day, with all the hay they could eat twice a day; watered every morning at 9 and 4 p.m. We fed this way for the last month. They didn't get much outdoor exercise, as they were fed in box stalls, and kept warm. A. & D. Brown. Elgin Co., Ont., Feb. 8th, '90.

Waterwheel to Run Cream Separator.

THOS. CAIRNS, B. C.:—"Could any of your readers give dimensions for waterwheel to run cream separator, De Laval No. 2 Baby? The water discharge on head will be four inches in diameter."

[We invite readers, who can, to give us the information desired. We presume a turbine waterwheel is what Mr. Cairns should use.]

The New Cure for Milk Fever.

The new cure for milk fever by the injection into the udder of a solution of iodide of potash is claimed by veterinarians and others to give very excellent results, and already it is becoming recognized in certain quarters as one of the most reliable remedies yet introduced. As already pointed out in these columns, it consists in injecting into the udder (through the teats) one dram of iodide of potassium mixed with one quart of boiling water, cooled down to 98 degrees Fahr. before being used. Half a pint of this is to be injected into each quarter of the udder. The animal should then be placed in a comfortable position on her chest, and the udder gently rubbed. Her position should be changed every two or three hours, and only one injection is necessary. It should be borne in mind that before the injection is given the udder and teats should be carefully washed with soap and water, to which a little carbolic acid has been added.—*Farmers' Gazette (Ireland)*.

[Dr. Wm. Mole, M. R. C. V. S., writes us as follows, commenting on the above: "With reference to the new treatment for milk fever by the mammary absorption process, I cannot speak with any degree of certainty, but it is in accordance with my ideas of the disease, and should be looked upon with favor until proved incorrect. If you will refer to my account of milk fever and the controversy that once took place in the *ADVOCATE*, you will see that I have always argued that it was due to re-introduction of the milk into the circulation at the time of parturition, due in many cases to want of water, causing toxic blood poisoning, coma, and death from exhaustion, so that by injecting a material that could be absorbed along the same lines, the brain pressure would be relieved and the animal recover rapidly. There is quite a mass of correspondence in the veterinary journals as to this matter, and the general opinion of those men who I know to be good observing practitioners is that after repeated trials of both methods the chloral hydrate treatment is more successful. On the other hand, many men just as good pin their faith to the new method of the injection through the teats of a weak solution of iodide of potassium as detailed in the above statement."]

Overcoming Long Churning.

To the Editor *FARMER'S ADVOCATE*:

GENTLEMEN,—Two very interesting letters are those of Messrs. Black and McDonald, in issue of January, re long churning and no butter. "Misery likes company," though I certainly do not wish anyone to churn and churn and get nothing but vexation of spirit and a tired-out body. It is just about a year since I wrote to the *ADVOCATE* on the same subject. I felt ashamed to do so, as I was a greenhorn at buttermaking, but if Mr. McDonald has the same disappointment after forty years' experience I need not grumble. Since reading Mr. Sleightholm's kind answer I have failed only thrice in getting butter, and the reason was the cows were strippers. Since last May up till the present time I have not had one failure, though sometimes I have had to churn quite a long time—on two occasions two hours, and that in the end of 1898. Since May 19th last my average time required to churn has been thirty-three minutes. Should like to tell you how I do, as it may interest others, just as other methods interest me. I churn once a week. For gathering the cream in we bought a large tin pail, and had a lid made to fit, perforated in center, just under a broad handle. This allows ventilation, and the handle prevents dust from getting in. Cream is stirred when fresh cream is added. But during cold weather I have to keep the cream pail in the kitchen, for what else can one do, situated as I am? Heat is necessary, and we have only the kitchen stove going. For twenty-four hours before churning no fresh cream is added, but the pailful is often stirred and kept ripening. Churning temperature is from 65° to 60°. The churn is scalded and scrubbed, but in this cold season it is not cooled, but allowed to sit till I am "ready for the fray." Have never required to coax the butter by adding salt. Last week it seemed as if it would not come for a long time, but we had been reading those letters and the answers, so immediately the cream was run off and placed in a pan of warm water and raised in temperature just what was needed: butter after a few minutes' more churning. I do not believe in adding hot water to the cream, as it only thins it and makes matters worse. For starter I use a proportion of good buttermilk, and find it works well. I keep a note of all details, such as pounds of cream, temperature, time required to churn, pounds of butter made, price, etc., and find it a most useful record. I have to thank the *ADVOCATE* for much information. If failures are recorded, try to avoid them, while successes are copied and hints made use of. It is in buttermaking as in everything else—one must use common sense and the brain one is blessed with. If one plan does not work I shall try another, and success must come at last. Yours Truly,

ESME SHIELDS.

P. S. I strain the cream into the churn through cheese cloth. It is a great help, but very slow. Can anyone suggest a quicker method? B. S. Ontario Co., Ont.

How to Handle Breeding Stock in Order to Get a Large Percentage of Well Fertilized Eggs for Hatching.

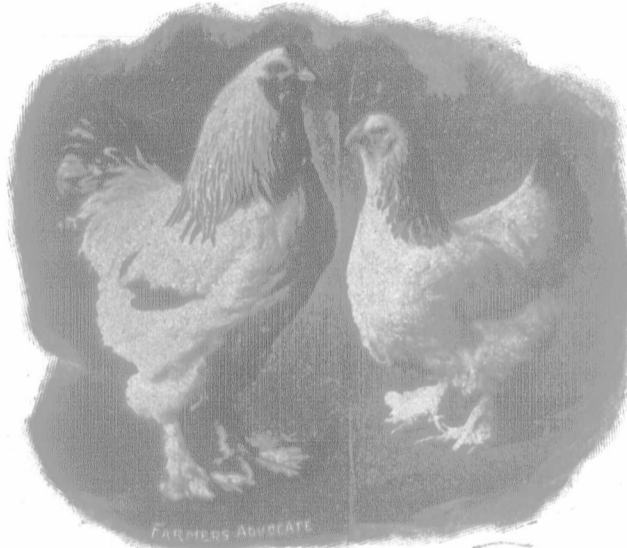
BY E. W. ANDREWS.

The breed of fowls kept should depend mainly on the object sought, whether it be eggs or table poultry. Not more than twelve fowls should be kept in one breeding flock. If these are in vigorous health and properly fed, not only will almost every egg prove fertile, but there will be no difficulty in raising the chicks.

To keep a hen in good condition for laying she should never have a full crop during the day. It is not wrong to give a light meal of warm mixed food in the morning. I do not believe in feeding soft, sloppy food at all. The fowls should go away from the trough unsatisfied and should then seek their food, getting it grain by grain, engaging in healthy exercise in order to obtain it. Feeding soft food leads to many errors on the part of the beginner.

I believe in free range, providing the range is good. During the summer months the hens require less food than in the winter, though it depends somewhat on how they are situated and how many eggs they lay. When on the range they cannot fail to secure a full supply of all they require if they are active and industrious. When hens are confined in their winter quarters without range, their morning food should consist of a warm mash, made from equal parts of corn meal, wheat bran, and ground oats. If it is customary to mix vegetables in the morning mash, these can be used in conjunction with the above mixture. Feed what you think is about half enough in the morning, and let them try to find the remaining quantity desired.

Keep them at work. Give clover hay, chopped fine and scalded, meat and bone, three or four times a week, and wheat at night. Keep plenty of grit before your fowls at all times, and plenty of clean fresh water. It is a good plan to change the variety of grain two or three times a week. Do not



FIRST PRIZE WINNING PAIR OF LIGHT BRAHMAS. OWNED BY T. A. COX, BRANTFORD. SEE BELOW.

fail to give fresh ground meat. Follow this plan and you will get fertile eggs.

The majority of poultry raisers begin to set their incubators during the winter months. They fill them with eggs from hens that are confined in small buildings and not properly fed. What are the results? Not twenty-five per cent. of the eggs hatch. They continue in this way all winter, and condemn the incubator. Toward spring, when the weather begins to warm up, the fowls are turned out into the runs or given free range. Then they get a change of food in the way of green grass and insects. The hens' combs begin to get red, they are more active and in much better condition, and lay more eggs. As soon as a hen begins to get broody, eggs from these thrifty hens are placed under her, and the result is a good hatch.

Now, on the other hand, if the breeder had been able to have his hens sit in the winter when he started his incubators, on eggs from hens that were not properly fed and in poor condition, what would have been the result? It would have been no chicks at all. Would he have said the hens were no good, and that they could not hatch chicks? No, he would say it was the fault of the eggs—that they were chilled or not fertile. Readers, if you will give your hens the proper exercise and food in winter, plenty of meat and vegetables to take the place of insects, green grass, etc., that they get when they have the range in the spring, you will find that a well-made incubator will hatch a larger per cent. of strong, healthy chicks than any hen on earth was ever known to do.

The incubator is a necessity on any well-conducted poultry plant. The incubator chick is free from vermin, therefore is stronger, and if placed in a first-class brooder, made of good material, it will continue to thrive, and a hundred can be raised with less trouble than a dozen under an old hen. The fancier who has a small place in a city or town should give his fowls as much range as possible, but if you are obliged to confine them in small pens and yards, avoid crowding. Be sure to feed animal foods to take the place of insects that the hens get

when they have free range. The poultry raiser on the farm should have a good comfortable laying-house for his fowls, and not allow them to lay the eggs under the barns and other buildings.

All early pullets that will be matured by the time winter sets in should be kept growing, but be very, very careful not to let them get fat. That is a condition a fowl should be in when ready for market, but fat is a detriment to all laying hens. Overfeeding causes more diseases than anything else. If the pullets are not fully feathered when winter comes, as well as being in good condition, they will only be a dead expense until spring, when almost any kind of a scrub will lay. If you keep common hens, commence culling them out as soon as possible and fatten the culls for market, keeping only those you can see are liable to do you good service this winter. Keep only the roosters you wish to breed from, and I would advise you to keep them by themselves until breeding time. Your chicks, as well as the winter egg-basket, will prove to you that you were wise in doing so.—*Artificial Incubating and Brooding*.

Feeding a Calf for Beef Purposes.

In the first place take good care of the cow while carrying it and when it comes. If we are going to feed it from a pail we do not allow the cow to lick it, but take it to a warm, well-bedded box stall, and rub it off, and leave it for three or four hours to get hungry. Then take some milk from the cow, but do not milk her out thoroughly for forty-eight hours at least after calving. This is a great safeguard against garget; give it about two quarts at first, and increase gradually as the calf requires it; feed three times a day first week, but be very careful not to overfeed, as scours when once started are very hard to stop sometimes. When two weeks old add a little warm skim milk, and increase it so that at four weeks old they are taking skim milk entirely; to the skim milk add a little meal, corn meal, middlings, grd. oil cake, in proportion 4, 4, 2 in the order named. It is not good to mix coarse meal like oat chop in milk; put a tablespoonful or two in at first, and increase as the calf seems to relish it. When about three weeks old put some oat chop in a manger where they can get it; very little at first, and as it licks it up clean keep increasing; also let them have access to salt; also fine, well-saved clover hay and pulped roots. Do not leave it to get stale before them, but keep the manger clean and put in fresh feed. There is nothing that helps them to eat better than learning them to leave a clean plate. Be careful to feed regularly both as regards time and quantity. Continue along these lines, changing the food at times to increase the appetite, and in summer when flies are bad let them have a moderately dark, well-ventilated place to stay in through the day, and a good pasture to feed in at night. When they are weaned from milk in the fall, a run on rape for a month or two puts their stomachs in a fine shape to take hold of the coarser fodder in winter quarters. Calves fed in this way will generally grow well and have a good amount of flesh, which should be always kept on and increased until they are finished. A great deal depends on the attendant—if he likes the calf and the work.

JAMES BOWMAN.

Wellington Co., Ont.

The Canadian Shire Horse Breeders' Association.

The Shire Horse Breeders' Association held their annual meeting at the Albion Hotel, Toronto, Feb. 9th. President H. N. Crossley was in the chair, and among those present were: John Gardhouse, Highfield; John Davidson, Ashburn; Wm. Linton, Aurora; Jas. Snell, Clinton; W. E. Wellington, Toronto; T. Boynton, Dollar; Jas. Leask, Taunton; A. Johnston, Greenwood, and J. M. Gardhouse, Highfield.

The Secretary-Treasurer, Mr. H. Wade, presented his report. There had been rather better results during the year in the way of registration and membership fees, but there was still room for progress. The financial statement showed the total receipts, including a balance from last year of \$30.68, to have been \$76.18. The total expenditures amounted to \$23.50, leaving a balance on hand of \$52.68.

Mr. Crossley, in his address, anticipated a much larger importation of Shire horses during the coming year than has been the case during the past four years. Better prices had lately prevailed, and a more active demand.

The Association adopted a resolution asking the U. S. authorities to accept certificates of registration in recognized Canadian Records to pass the customs free of duty.

Officers for the coming year were elected, as follows: President, H. N. Crossley, Toronto; Vice-President, W. E. Wellington, Toronto; Directors—John Gardhouse, Highfield; Jas. M. Gardhouse, Highfield; Wm. Hendrie, Jun., Hamilton; Wm. Wilkie, Toronto; H. J. Smith, Highfield; Geo. Garbutt, Thistleton; Thos. E. Kinner, Highfield. Delegate to Industrial Exhibition, John Gardhouse, Highfield. Delegate to Western Fair, H. Wade, Toronto, and Highfield. Delegate to Ottawa Exhibition, John Gardhouse, Highfield. Delegate to Horse Breeders' Association, H. N. Crossley and W. E. Wellington. Judges recommended for Spring Horse Show, R. Gibson, Delaware, and Dr. R. P. Eberner, Springfield; for other shows, R. Gibson, J. Y. Ormsby, John Gardhouse, and Thos. Kinner. Committee on Stud Book, H. N. Crossley, John Gardhouse, and H. Wade. Auditor, C. M. Complin, London.

Prizewinning Light Brahmas.

The Light Brahma cockerel illustrated above won 1st and special for best male at the last Ontario (Toronto), Guelph, Brantford and Hamilton poultry shows, as well as 1st at Galt on the Ontario, and 1st at Brantford, while the two won 1st for best pair of Light Brahmas at the Ontario Poultry Show. They are owned by Mr. T. A. Cox, Sunnyside Poultry Yards, Brantford, Ont., who has a choice pen of this breed, six of the pullets of which score 92 to 95 points. Mr. Cox also has choice pens of Silver and Golden Laced Wyandottes, S. G. Dorkings, B. Minorcas, B. Langshans, B. Javas, brown and white S. C. Leghorns, Game Indian Game, Pit Game, B. B. R. Games, W. and Raped 12 month Rocks, B. W. C. Polish, B. R. Red Bant, Phoebe Game Bant, and M. B. turkeys. He has eggs for sale from the above breeds.

QUESTIONS AND ANSWERS.

Veterinary. LAME PIGS.

H. HILL, York Co., Ont.:—"We have a batch of pigs four months old, and some of them have gone lame on their legs. We feed them on boiled roots, shorts, and a little peas. Would you tell me what to do for them in your next issue?"

[It seems difficult to account for pigs going lame in the way Mr. Hill refers to, as not uncommonly the most careful pig breeders have trouble in the winter months. We would ask our readers who can suggest what should be done in such cases.]

LUXATION OF THE PATELLA, WITH ABSCESS.

HUGH C. MCLEAN, Bruce Co., Ont.:—"I have a colt that was hurt last July in the stifle joint. The veterinary surgeon said that there were no bones displaced, but that the cords of the stifle joint were sprained. For the last two months it is breaking out in running sores. He cannot step over anything higher than six inches. Please send an early cure."

[We regret that no answer of a satisfactory character can be given in this issue, and we would recommend that you either turn out for life or destroy as being worthless and not capable of being cured permanently. WM. MOLE, M. R. C. V. S., Toronto.]

Miscellaneous. WILLOW FENCE POSTS.

REGINA:—"Could you give me any idea of the value of the red willow for fence posts. Are they durable?"

[Where willow can be got large enough for fence posts, say from three to four inches in diameter, they will last fairly well as fence posts. One farmer who has used them extensively tells us they last as well as oak posts. And he has fences with willow and oak posts that have stood 10 years.]

DAMP WHEAT FOR SEED.

W. A., Hartney, Man.:—"I have a quantity of damp wheat on hand, and am only offered a low price for it. Will it be safe to keep this for seed purposes? I do not think it has heated any yet."

[I would strongly advise you to sell your damp wheat and purchase good, sound, clean, dry wheat. The trouble with the damp wheat is that it may germinate all right at this season of the year, but just as soon as the soft weather of spring sets in it will start to heat, and the germinating power may be destroyed. I consider it very unsafe indeed to depend on damp wheat for seed purposes. The risk is too great, as you may lose your entire crop, or have it so badly thinned out that your crop would be greatly lessened. S. A. BEDFORD, Supt. Experimental Farm, Brandon.]

CROPS ON BREAKING.

C. F., St. Paul's, Man.:—"Can you recommend the sowing of a crop on new breaking; and if so, what kind of grain would give the best returns? How would flax suit for this purpose? When should I sow, and how much seed should I use? Would peas suit for this purpose?"

[In regard to your first question we find that flax gives a small crop on breaking. We use about 15 to 20 pounds of seed per acre. It should be sown some time during the month of May. The average crop will depend largely on the seed, but it is not sufficient, I fancy, to make it pay. Peas do not succeed well on spring breaking—the yield is a very small one indeed. There is no crop that I would recommend for spring breaking. Not only is the yield small, but the land is injuriously affected for a number of years afterwards. I have known it to refuse to give a full crop for four years after being sown. I would strongly recommend that, instead of wasting the time in growing a small crop, the settler use his time in breaking a larger area of land. There is no money whatever in sowing a crop on breaking. I can speak from experience in this matter, as I have been 22 years in the country and have known many settlers to sow on breaking, but have never seen a successful crop reaped yet. S. A. BEDFORD, Supt. Experimental Farm, Brandon.]

FARM POWER.

W. M., Grey Co., Ont.:—"Can you give me some advice as to what kind of farm power would be the most suitable to me? I want it to run a small thrasher, a crusher, cutting box, turnip pulper, and cream separator. The thrasher and cutter take about 7 horse-power, although 6 can run them."

[We incline to the opinion that for all the purposes named a good tread power would probably be the most satisfactory. For many of the purposes indicated, a windmill power answers admirably, yet for the cream separator, which requires a steady power and one available regularly twice a day, the windmill could not, for obvious reasons, be depended on. It might be well to make enquiry of the manufacturers of gasoline engines as to their cost and capability for the purposes specified.]

CALF FEEDING.

G. W. M., P. E. Island:—"Kindly advise me as to the best method of raising Shorthorn steer calves. I will have several next month, and wish to raise them in the best possible manner. How much milk can be safely fed (skimmed milk)? I have the following feeds besides milk: Flaxseed, oats, turnips, and clover hay. Please formulate a ration of these for a calf. Any information on the subject will be greatly appreciated."

[We would refer our correspondent to several letters elsewhere in this issue, giving the experience of successful stock-raisers.]

CROSSES FOR REGISTRATION—VOMITING STEER—MEASURING HORSE—PACER CROSS-FIRING, ETC.

SUBSCRIBER, Lanark Co., Ont.:—"Will you be kind enough to answer the following questions through the ADVOCATE, in February 20th number, if possible. 1. How many crosses of pure breed do horses, cattle, sheep and pigs require on sire's and dam's side before they are eligible for registration? 2. What is the proper treatment for persistent vomiting in a two-year-old steer which is being stall-fed? It does not appear sick in any way, only vomits everything it swallows, a few minutes after. 3. In measuring the height of horses, is the shoe included? 4. What season of the year is the best to plant maples; also cedar, for a hedge; and the proper way to plant a cedar hedge? And what size of plants would be best? 5. What is the proper way to shoe a pacer that cuts the inside quarter of left front foot with right hind when speeding? I would like as full an explanation on this question as possible."

[1. In the Clydesdale Association a filly has to have four crosses of registered sires to entitle her to be entered in the Clydesdale Stud Book. The same rule occurs with Shire horses; but with Hackney horses we follow a different plan. There is what we call an inspected mare, who is supposed to have lots of high action and be nearly thoroughbred or a trotter. This is what we call the foundation stock, and is inspected. A filly from her by a pure-bred sire will what we call "half registered," then a filly from the offspring, by a registered sire, would be what we would call "full registered." With cattle it is different. Every class of cattle we record have to trace, in all crosses, to an imported dam. Sheep require to trace to some flock books in England, or to the American Sheep Record books. In swine—Yorkshires, Tamworths and Berkshires have to trace to an imported dam, while the American breeds, such as the Chester Whites, Duroc-Jerseys, and Poland-Chinas, trace to the American books. They are a made-up breed.

H. WADE, Registrar of Live Stock, Toronto.

2. The causes of persistent vomiting are not quite known. I have only met with two cases previously to this one. In both it seemed to depend on indigestion, producing hicough, and the animal was generally in very poor condition, the food coarse and innutritious. In one case it was due to ulceration of the second stomach from foreign irritant. I would recommend that the animal receive a good purgative: 1 lb. of Epsom salts, 1 ounce of aloes afterwards, some good tonic powders: carbonate of iron, 2 ounces; powdered gentian, 2 ounces; powdered cinchona, 2 ounces; powdered aniseed, 2 ounces; powdered capsicum, 1 ounce; powdered charcoal, 4 ounces; to be mixed and divided into twelve powders; give one night and morning in a quart of gruel. This will remove the cause. DR. W. MOLE.

3. When a horse is measured for sale or in a showing his height is taken as he stands, whether shod or not, providing the shoes have no calks. When he is raised up on calks the height of the calks must be deducted. When a horse is properly shod with plates, about the same depth of hoof is removed as iron is put on. 4. Maples should be planted in spring any time before the leaves are out. Saplings about one and one-half inches in diameter, carefully dug, leaving on all the fibrous roots possible, and not allowing them to become dried, usually live if set in loamy earth, well packed down and mulched. The top should be cut off from eight to ten feet from the ground. In setting out cedar for a hedge, first of all the ground should be prepared in much the same manner as it would be for fruit bushes, or even for a corn crop, by cultivating and manuring so that a fine, mellow, rich tilth is obtained. It is well to have this done in the fall previous to planting the cedars. It is the custom of some to set out the plants just after grain seeding in spring. Plants from two to three feet high are pulled from a swamp and planted carefully about one foot apart in the row. The larger plants may be trimmed back to the height of the smaller ones. Some of the plants are liable to die, so it is well to draw home a few extra and put them in a block for transplanting into the hedge row next season. The ground on each side of the row should be kept well cultivated the first season and mulched the second. Very little more attention is needed, except to trim the hedge annually. When the plants are secured from their native location, it is preferable to take them from fairly high ground. As a rule, nursery stock has superior root growth, and usually does well. 5. First of all see that the feet are absolutely level, with a good amount of hoof. Put on even-weight, plain, light shoes all around. Then seek to guide the legs by careful weighting. Put on 4-oz inside weights on front feet, protecting them with light quarter-boots, and 4-oz. on the outside of right hind foot, and 2-oz. on the outside of left hind foot. It is impossible to fix a rule that will suit every horse having the same fault, so would advise weighting by means of light scalpers with weight pockets, as they can be put on whenever the pacer is to be driven. Give considerable slow driving for a few weeks, so as to develop the muscles that influence the leg-steering. Then commence to speed easy at first. It may be necessary to use a little more weight for a couple of weeks while jogging, say 5-oz., but the horse should be able to carry himself straight with lighter side weights before attempting to speed. Balancing pacers and trotters requires a deal of study, but when a driver understands the general laws underlying it, the study becomes very interesting.]

Chatty Stock Letter from Chicago.

FROM OUR OWN CORRESPONDENT.

Following were the prices lately current, with comparisons two weeks and one and two years ago:

Table with columns: Beef cattle, Hogs, Sheep, and various weight categories. Sub-columns: Extreme prices now, Two weeks ago, 1888, 1887.

Official receipts of live stock at five western points were as follows in January:

Table with columns: CATTLE, HOGS, SHEEP. Sub-columns: 1890, 1888, Loss, Gain.

Average weight of cattle received at Chicago last month 1,097 pounds, the lightest January average since 1885. Sheep and lambs averaged 90 pounds, the lightest January since 1885, when the average was the same. Hogs averaged 231 pounds, against 233 pounds a year ago.

There was quite a severe decline in the cattle market as a result of the beef scandal. The evil reports sent out by Gen. Miles had a most depressing effect upon the trade for a time at least, and the cattle producers in turn were made to suffer. The cattle prices are considered to be very high, and the dealers do not get much comfort from the Government figures and stale reports of supplies of cattle on hand.

The Department of Agriculture has issued the following: The returns of the number of live stock on farms in the United States, January 1, 1889, show there to have been 15,065,377 horses, 2,134,213 mules, 15,960,115 milch cows, 37,964,325 oxen and other cattle, 30,114,453 sheep, and 38,651,631 swine. These figures show a decrease of 295,604 in number of horses, 56,009 in that of mules, 1,269,973 in that of oxen and other cattle, and 1,105,339 in that of swine. On the other hand, there is an increase of 149,239 milch cows and 1,457,493 sheep. The average farm value of every description of live stock is higher than on January 1, 1888.

There is a movement on foot to induce the Government to make a better classification of live stock, so as to show the calves and other young animals on hand.

Chicago alone received more hogs from Illinois last year than were reported to be on hand in the State at the first of the year. In these days of early maturity it is quite possible to have a crop of hogs born, fattened, marketed and consumed between the annual Government census periods.

There is a feeling that prices for cattle must be a good deal higher than at present.

The hog situation is fairly encouraging to farmers, though there is a feeling that the coming crop of hogs will be large.

The sheep market shows signs of weakness, with lambs selling at a loss to feeders, who paid high prices for lambs and for feed.

Anthrax in Calves.

To the Editor FARMER'S ADVOCATE:

SIR,—In your issue of November 5th last your veterinarian replies to an enquiry about "Anthrax in Calves." The calves in question, from the description of the disease given, died of symptomatic anthrax or, as it is commonly called, black leg or black quarter, a disease of young cattle. It is seldom seen in animals less than six months or more than four years of age, but is nearly always seen in calves and yearlings. It is due to a microbe called the Bacterium Chauvei.

True anthrax or, as it is scientifically called, Bacteridium anthrax, is due to a microbe called the Bacillus Anthraxis, and, of course, is an entirely different disease from symptomatic anthrax. It occurs equally in animals of all ages and may spread as an epizootic in all species of animals except rats, but in most cases it confines itself to the bovine species. The writer, in giving his description, seems to have got these two diseases somewhat mixed, for he goes on to say that anthrax is due to the anthrax bacillus, which is quite true, but black leg is the disease in question and not anthrax. Black leg is not anthrax, neither is anthrax black leg, there being as much difference between the two diseases as there is between tuberculosis and glanders.

In the district of Novgorod, in Russia, in 1867-8, an epizootic of anthrax occurred, in which it claimed for its victims 40,000 horses, 800 cattle, 6,000 sheep, and 500 human beings. Black leg is an entirely different disease; the flesh may be eaten with impunity by the pig and dog and also by man, as they are entirely refractory to the disease.

Black leg was once supposed to be a precursor of true anthrax, hence they were at one time thought to be one disease, until isolation of the different microbes and experimental inoculation proved them to be entirely different diseases. I remain, Yorkton, N.-W. T. THOS. V. SIMPSON, V. S.

PETER MCNAB, Reeve of Langford, Neepawa, Man., says:—"I have been a reader of the ADVOCATE for over twenty-five years, and find it too old and valuable a friend to part company with."

"Old Songs."

What memories are sometimes conjured up by "old songs!" There is a subtle charm and power in music which seems to belong to it alone. In those who feel music naturally, this charm and power work very vividly. Often one special air or chord will recall, with almost cruel force, some lost scene or loved one, whilst other airs, reminiscences of the same time, will make but a faint impression. It is like with some flower, picture, poem, or even perfume; but I think music has the strongest influence of this kind, it being so eminently emotional.

How can we be sure of what this sweet girl is thinking! She is young, so we must hope she has not had much of life's burden to bear. Perhaps she is only first trying over a few of the "old songs" mother or grandmother used to sing. As to whether she is a young lady of our modern times it is hard to say; for in these days of so many revived old fashions in dress, who can tell? True, the piano is old, evidently, but one sees such in many homes.

Whether of far-off or modern times, however, there is still a touch of sadness over this pretty picture of "Old Songs," seeming to speak of some hidden chord which strikes that young heart and brings that grave expression to the sweet, earnest face.

MINNIE MAY'S DEPARTMENT.

MY DEAR NIECES,—

More than 5,000 years ago a young man gave to his friends the following riddle, which doubtlessly you all know the answer to—Here is the riddle: "Out of the strong came forth sweetness." Of course this means honey. It is Sampson's riddle. Let us think a little about this sweetness for which we are indebted to such a tiny creature as the bee.

Honey was probably the first sweet article known to man, for it is very frequently mentioned in the Sacred Writings. In olden times it was associated with many rites: It was mixed in the sacred water sprinkled on the newly-born child; it was used, too, at wedding feasts and at New Year rejoicings, and was also offered to the dead. In England, before tea was heard of, the favorite drink was mead, which was composed of honey and water. Even yet we speak of the "honeymoon," which is so-called because of the ancient practice of drinking mead for a month after a wedding. It used to be the custom in some parts of England to "tell the bees" of a death in the family.

Honeybees were brought to America from Cashmere and the north of India generally. The Indians of America called them "the white man's fly," and said that "as the bee advanced, the Indian and the buffalo retired." Certain it is, they have been the

is a great honey producer. Its pollen, adhering to the bee, gives a yellow tinge both to comb and honey, and golden-rod honey is said to be thicker than other kinds and to granulate more easily. Other favorite blossoms of the bee are the apple, raspberry, maple, buckwheat, and wild aster, while "down south" the bees seek out the orange, palmetto, and cotton. Sometimes honey has a very undesirable flavor on account of the bee selecting objectionable blossoms, such as the alder and the wild onion. But this is not all. Some plants give to honey not only disagreeable but positively poisonous qualities. Xenophon tells us that his soldiers, having eaten honey near Trebizonde, became very sick. This was attributed to the laurel and azalea growing there, to which the bees had access. A strange feature about this is that the bees themselves seem none the worse of the nectar which they collect from those blossoms.

A scientist in France is trying an experiment by which he hopes to do away with medicines, and to use instead, medicated honey. He has a number of bees which are obliged to gather nectar from certain plants only: the honey from these plants is labelled and is supposed to be as efficacious as other extracts from the same plants. It is doubtful if this Frenchman will succeed in superseding medicine, but if he do, how many children, aye, and older folks too, will arise and call him blessed!

Honey is so delicious in its natural state that there is little need for its culinary use. In "Sing a Song of Sixpence," the Queen used it with bread, for we know that she was "down stairs eating



"OLD SONGS."

Do It Well.

BY CLEM. V. WAGNER.

While the many are looking about for the road to good fortune, there are some who seem to walk steadily ahead toward the desired goal, without any apparent effort to discover the coveted way. It would be difficult to say in just what the secret of their success consists, but to an observer it would seem to be their readiness, watchfulness, and above all, their effort to do their best in the smallest particular. These qualities grant a royalty to their possessors that will, sooner or later, bring them into recognition.

No matter what may be the starting place, the rule is ever the same. He who keeps to his work, and does that work well, is starting toward the top, whether his duty consists in rolling clods or making books, in selling prints and laces, or in drumming away at some profession.

Two lawyers, engaged in a hotly-contested case, became somewhat personal in their running cross-fire of remarks.

"I believe," said one, with a meanness of spirit, "that you once drove a milk wagon in this town."

"Yes, sir," quickly retorted the other, "and I sold good milk. I did my work well."

And that is the spirit that conquers. No matter whether it is driving a milk wagon, or what not, he who keeps honest and does his work well is the good workman, and the good workman need never blush to own his work.

heralds of civilization, steadily moving west as people went west. The old Western settlers give the exact year when the first bee crossed the Mississippi, but the date is not really known. It is said to have been about 100 years ago, and they reached California about the time that the gold-seekers arrived there. This state—California—appears to be a leading place in the honey-producing way. The well-known actress, Madame Modjeska, possesses a honey farm there of 600 hives, and finds it a good investment.

The ancients used honey as a basis for many beverages, etc., as we may see when we remember that the Latin word for honey is *mel*. Hence we have *hydromel*, a beverage of honey and water, and *oxymel*, a mixture of honey and vinegar, used as a demulcent. Then we have *mel* in such words as *melada* (crude sugar), *mellic* grass (found in Britain and much liked by cattle), and *melilot* (a plant of the clover species, used as fodder). And to-day we still use honey as freely as they did in days of old, not only as a table delicacy, but medicinally. It should be considered as a food more than a relish, and is said to be more desirable than cane sugar for persons of weak digestive powers. The sweet juice of the flowers is like that of cane sugar, but is rendered easier of digestion by the aid of the bee. The quality of honey is affected by the nature of the plants from which it is obtained. The famous honey of Hymettus derives its excellence from the wild thyme which grows so plentifully on the mountain-sides. The beekeeper, of course, depends upon clover for the finest honey. Golden-rod, too,

bread and honey," and no doubt she enjoyed it as much as any of her subjects would. It is said that fruit can be preserved by packing in jars and filling all the spaces with honey, and my younger nieces will be glad to know (if they are not already aware) that a little honey added to candies is an improvement. Nearly all of us have a "sweet tooth," and so nearly all of us like honey.

Now, I wish to talk just for a moment about another side of this sweetness. Do not let all the honey and all the sweetness remain in the hive, but take it into the home. Do not keep it all in the cupboard, but bring it into all the rooms—let it be everywhere—make the home a hive of sweetness too. Let us emulate that little creature, the bee, in its life of sweetness. That we may all try not to collect sweetness, but to diffuse it wherever we go, is the wish of—
Your loving old auntie,
MINNIE MAY.

A clergyman was annoyed by people talking and giggling. He paused, looked at the disturbers, and said: "Some years since, as I was preaching, a young man who sat before me was constantly laughing, talking and making uncouth grimaces. I paused and administered a severe rebuke. After the close of the service a gentleman said to me, 'Sir, you made a great mistake; that young man was an idiot.' Since then I have always been afraid to reprove those who misbehave themselves in chapel, lest I should repeat that mistake and reprove another idiot." During the rest of the service there was good order.



Teddy's Trials.

So many steps to be taken!
So many errands to run!
People are mighty mistaken
Thinking a boy has much fun.
"Run to the market," says mother.
"You go so quickly," says she.
Wish I was lame—yes, I'd rather
Hobble like Jimmie M'Crea.

Sister Sue hands me a letter.
"Dear, you will mail it I know."
When sis commences to flatter,
Then I have just got to go.

"Dearest" and "darling" and "Teddy,"
Those are the words she will use;
But if I'm not always ready,
Then she'll begin to abuse.

So, you are mighty mistaken,
Thinking that fellows have fun,
If there are steps to be taken,
And lots of errands to run.

The Emperor's New Clothes.

Many years ago there lived an Emperor who cared so enormously for new clothes that he spent all his money upon them, that he might be very fine. He had a coat for every hour of the day; and just as they say of a king, "He is in council," one always said of him, "The Emperor is in the wardrobe."

One day two cheats arrived in the city. They said they were weavers, and could weave the finest stuff anyone could imagine. Not only were their colors and patterns uncommonly beautiful, but the clothes made of the stuff possessed the wonderful quality that they became invisible to anyone who was unfit for the office he held, or was incorrigibly stupid.

"Those would be capital clothes," thought the Emperor. "If I wore those I should be able to find out what men in my empire are not fit for the places they have. I could distinguish the clever from the stupid. Yes, the stuff must be woven for me directly!"

And he gave the two cheats a great deal of money that they might begin their work at once.

They put up two looms, and pretended to be working; but they had nothing at all on their looms. They at once demanded the finest silk and the costliest gold. This they put in their own pockets, and worked at the empty looms till late into the night.

All the people in the city knew what peculiar power the stuff possessed, and all were anxious to see how bad or how stupid their neighbors were.

"I will send my honest old minister to see how the weaver's are getting on," thought the Emperor. "He can judge best how the stuff looks, for he has sense, and no one understands his office better than he."

So the good old minister went out into the hall where the two cheats sat working at the empty looms.

"Why," thought he, opening his eyes very wide, "I cannot see anything at all!" But he did not say this. The cheats pointed to the empty loom, and asked him if he approved of the colors and the pattern, but the poor old minister could see nothing, for there was nothing to see.

"Can I indeed be so stupid?" he thought. "Am I not fit for my office? No, it will never do for me to say that I could not see the stuff."

"Do you say nothing to it?" said one of the weavers.

"Oh, it is charming—quite enchanting," answered the old minister. "What a fine pattern, and what colors. Yes, I shall tell the Emperor that I am very much pleased with it."

The Emperor soon sent again, dispatching another honest statesman, to see how the weaving was going on. He fared just like the first. He looked and looked, but, as the looms were empty, of course he could see nothing.

"I am not stupid," he thought, "it must be my good office, for which I am not fit. I must not let it be noticed." And so he praised the stuff which he did not see, and expressed his pleasure to the Emperor.

All the people in the town were talking of the gorgeous stuff. At last the Emperor went to see it with a crowd of chosen men.

"Is it not splendid?" said the two old statesmen who had been there before. "Does not your Majesty remark the pattern and the colors?" And they pointed to the empty loom. For they thought the others could see the stuff.

"What's this," thought the Emperor. "I can see nothing at all! This is terrible! Am I stupid? Am I not fit to be Emperor? Oh, it is so pretty!" he said aloud. "It has some excellent applications."

The whole suite looked and looked and saw nothing, but, like the Emperor, they said, "That is pretty," and advised him to wear these splendid clothes for the first time at the great procession that was presently to take place.

The whole night before the procession was to take place the cheats were up, and had lighted more than sixteen candles. The people could see that they were hard at work completing the Emperor's new clothes.

They pretended to take the stuff from the loom; they made cuts in the air with the scissors; they sewed with needles without thread, and at last they said, "Now the clothes are ready."

The Emperor came himself with his noblest courtiers; and the cheats lifted up one arm as if they were holding something, and said: "See, here are the trousers!—here is the coat!—here is the cloak!" and so on. "It is as light as a spider's web. One would think one had nothing on, but that is just the beauty of it."

Then the Emperor stood before the great mirror, and the cheats pretended to put on him each new garment; while the Emperor turned round and round to examine himself.

"Oh, how well they look! how capitally they fit!" said all. "What a pattern! What colors! That is a splendid dress!"

The chamberlains who were to carry the train stooped down with their hands to the floor, as if they were picking up the mantle; then they pretended to be holding up something in the air. They did not dare to let it be noticed that they saw nothing.

So the Emperor went into procession under a rich canopy, and everyone in the streets said: "How incomparable are the Emperor's new clothes!" No one would let it be perceived that he could see nothing, for that would have shown that he was unfit for his office, or was very stupid. No clothes of the Emperor's had ever had such a success as these.

"But he has nothing on," a little child cried out at last.

"Just hear what that innocent says!" said the

orange marmalade, one-quarter pound sugar, four well-beaten eggs. Mix all together, press into buttered mold or basin, tie down with a floured cloth, boil two hours or steam three. Be sure not to allow the water to cease boiling or it will not be so light. Of course, the pudding is plunged into boiling water sufficient to cover it; as it boils away add boiling water from the kettle. These boiled puddings are very wholesome and nice, though a little troublesome to make.

CUSTARD SAUCE FOR THE ABOVE.

Pint of milk brought to a boil, and add to it one well-beaten egg and level teaspoonful cornstarch (moistened with a little cold milk), two teaspoonfuls sugar. Boil up once and serve.

THE QUIET HOUR.

"Desultory Work."

"When a philanthropist said pompously,
With your great gifts you ought
To work for the great world, not spend yourself
On common labors, like a common man,
I answered him: 'The world is in God's hands.
This part He gives to me, for which my past,
Built up on loves inherited, hath made
Me fittest. Neither will He let me think
Primeval, godlike work too low to need
For its perfection manhood's noblest powers
And deepest knowledge, far beyond my gifts
And if I leave the thing that lieth next
To go and do the thing that is afar,
I take the very strength out of my deed,
Seeking the needy not for pure need's sake.'"
—MacDonald.

During the waiting season while God withholds active work from a man, He often gives little services to be done for Him, which may be called "desultory work"—work that may happen one day and not another, "here a little and there a little," and which is often left undone just because it is desultory, and apparently so small in its results.

Many have been turned from evil ways through the instrumentality of such desultory work. The religious book lent to a neighbor; the persuasive letter to a distant friend; the sermon listened to at the entreaty of a companion; the tract found in a railway station; the short, sudden, but heaven-heard and heaven-answered prayer; the timely word spoken by the wayside; the striking anecdote treasured up and repeated; the pointed text of Scripture that went into the heart, sharpened as a two-edged sword;—who but God Himself can tell what such apparently trivial seeds as these may grow into?

"A blessing such as this our hearts might reap,
The freshness of the garden they might share,
Through the long day an heavenly freshness keep,
If, knowing how the day and the day's glare
Must beat upon them, we would largely sleep
And water them betimes with dews of Prayer."

This "watering betimes with dews of prayer" is a very important part of such desultory work, without which we need hardly expect it to prosper.

The very crumbs of work that fall from the Master's hand—the fragments that remain from what He gives His strong ones, the corners of time snatched from the more secular work of every day, ought to be treasured by the Christian. They whose time is much at the disposal of others, or who are much in the habit of traveling from place to place, and therefore peculiarly fitted for a "wayside witnessing for Christ," need to consider deeply the importance of seizing all opportunities for desultory work.

"Each word we speak has infinite effects,
Each soul we pass must go to heaven or hell—
And this our one chance through eternity . . .
Be earnest, earnest, earnest!
Do what thou dost as if the stake were Heaven
And that thy last deed ere the judgment day!"

How well it would be if each in going through the world were to remember what the old writer said of life—that it consisted of two heaps, a large one of sorrow and a small one of happiness, and whoever carried the very smallest atom from the one to the other did God a service; much more those who are instrumental in any way in leading or helping one precious soul nearer to God.

If you think yourself unable or unworthy to attempt any such high and important work, remember that the work is God's, and that He is able to fit you for it. If He inspired Bezaleel and Aholiab with wisdom and understanding, filling them with the Spirit of God so that they might be able to work in gold and silver, in carving of stone and of wood, for the building of the earthly tabernacle, surely much more will He give wisdom to those who are trying to help in the building of the great spiritual temple.

"Our day for Him is long enough,
And when He giveth work to do
The bruised reed is amply tough
To pierce the shield of error through."

Let us take heed, then, to be faithful in the smallest things, or how can we expect to "rule over ten cities?" Let us watch over the little cloud, from which, though no larger than a man's hand, great showers of blessing may be poured down. Let us nurture the tiny seed which may spring up into the branching tree, for though our words and deeds may seem slight and powerless things, yet—

"The best men, doing their best,
Know, per adventure, least of what they do;
Men used fullest in the world are simply used;
The nail that holds the wood must pierce it first,
And he alone who wields the hammer sees
The work advanced by the earliest blow."



"YOUR CHOICE FOR A DOLLAR."

father; and one whispered to another what the child had said. "But he has nothing on!" said the whole people at length. That touched the Emperor, for it seemed to him that they were right; but he thought within himself, "I must go through with the procession." And the chamberlains held on tighter than ever, and carried the train which did not exist at all.
H. C. A.

"Your Choice for a Dollar."

Is anyone wanting a puppy?
A jolly dear troublesome pet;
They're worth lots of money,
Their tricks are so funny—
Your choice for a dollar you'll get.

But no, I can't bear to sell them—
The darlings so fluffy and small;
It makes me feel badly.
I want them both sadly—
'Twas only a joke, after all!

Recipes.

CREAMED CODFISH ON TOAST.

To one cup shredded codfish add two of water, boil briskly twenty minutes, pour off water, add one and a half cups sweet milk, one teaspoonful butter, half a salt-spoonful of pepper, one beaten egg. Allow this to simmer ten minutes. Serve on rounds of toasted bread.

SCALLOPED PARSNIPS.

Peel and boil until tender, mash (while hot) sufficient to make one pint, beat into this two tablespoonfuls of butter, two of cream, a beaten egg, one heaping teaspoonful of salt, a little pepper. Butter a dish and put in a layer of crumbs, pour in a good layer of the parsnips, then a layer of crumbs, until the dish is full, using a layer of crumbs last. Sprinkle a very little salt and pepper over the last layer, add a tablespoonful each of melted butter, milk, and hot water, and brown rapidly in the oven.

GOLDEN PUDDING.

One-quarter pound bread crumbs, one-quarter pound finely-chopped suet, one-quarter pound

EXECUTORS' SALE

(F. W. Stone Estate Farms),
ON SATURDAY, MARCH 4th, 1899.

The remaining farms of the F. W. Stone Estate, Guelph, will be offered for sale by Public Auction, at the front door of the City Hall, Guelph, at 12 o'clock noon. The farms consist of the Moreton Lodge Farm of 200 acres, adjoining the Ontario Agricultural College, with fine large stone stables, stone dwelling house, two large barns, and good outbuildings. The Guelph Electric Railway line runs within three minutes' walk from the house. Thirty-three acres of land on the opposite side of the road from this farm, and in the Ontario Agricultural block. And the Plains Farm of about 247 acres situate at Arkell village, where there is a station on the Canadian Pacific Railway, from which Guelph could be reached in ten minutes, and having on it a house and large barn with stabling accommodation for a large number of cattle. These farms are in excellent condition, a very large herd of cattle having been kept on them for many years. TERMS—Ten per cent. cash; balance of half of the purchase money within thirty days; remainder on mortgage as may be arranged.

F. W. STONE ESTATE,
GUELPH, ONTARIO.

NICHOLSONS,

OF SYLVAN, ONT.,

Will offer for Sale, by Public Auction,
at their farm, on
The Eighth (8) of March, 1899,

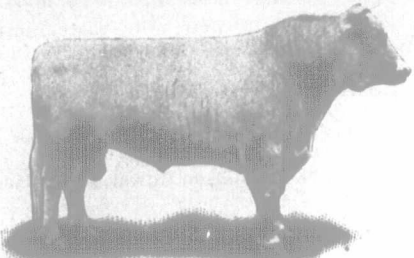
30 Head of Shorthorns,

30 females and 10 bulls. Our herd has produced more prize winners during the last 12 years, at the leading shows in Canada, than any herd in the Dominion. The present offering is a fair representation of the herd.

TERMS: 12 months credit on approved paper.
Locations, 5 miles south-west of Parkhill Station, G. T. R. Teams will meet trains evening before and morning of sale.

CATALOGUES READY 1ST FEBRUARY.
R. & S. NICHOLSON, Sylvan, Ont.
Capt. T. E. ROBSON, Iderton, Auctioneer.

"PRAIRIE HOME STOCK FARM."



Bulls at head of herd: JUDAS = 23419 = and Imp. JUBILEE = 28858 =.

Shorthorn and Ayrshire cattle, Shropshire sheep, Yorkshire and Berkshire swine.

ORDERS BOOKED FOR SPRING PIGS.

Berkshires, by the great boar, King Clare, and out of such sows as Harmony and Gold Drop. Yorkshires, by the sweepstakes boar, Yorkshire Bill, and out of such sows as Stamina, Jubilee Queen, and Markham Maid.

THOS. GREENWAY, PROPRIETOR.
JAS. YULE, MANAGER, CRYSTAL CITY.

J. E. SMITH



HAS ON HAND FOR SALE—
CLYDESDALE STALLIONS AND MARES,
SHORTHORN CATTLE--BULLS and HEIFERS.

All registered. Prices right. Come and see them. No reserves.

J. E. SMITH, Box 274, Brandon.

FOREST HOME FARM.

SHORTHORNS,
BERKSHIRES,
YORKSHIRES,
and B. P. ROCKS.

For sale, at present, seven young bulls, broad-backed and heavy, that should do purchasers good. Six young Berkshires sows, and five Yorkshires, fit for service. Write for prices, etc.

A. Graham, Prop.
Carman, C. P. R. R. POND ROY, MAN.

SHORTHORNS.

Young sows in pig with calves, a few good cock-ers left.

R. McLENNAN, Prop.

.. AUCTION SALE ..

Jerseys, Cotswolds, Berkshires

AT SNELGROVE, ONTARIO, MARCH 13th, 1899

(ESTATE OF THE LATE J. G. SNELL).

CATTLE--One registered Jersey Bull (yearling), grandson of a 20-pound cow; Six registered Jersey Cows; Five Grade Jersey Cows; Two Grade Jersey Heifers.

SHEEP--Four registered Cotswold Ewes; Ten registered Ewe Lambs; Five registered Yearling Rams.

SWINE--One imported sow, Premier Belle, aged; One yearling Sow, by Victor XII. (will make show sow); Two Boars out of imported Premier Belle, sired by Imp. Hiawatha, four months; One registered Boar, ten months; One registered Sow, yearling; One registered Sow, eight months; One registered Boar, eight months; Two registered Boars, ten months; One registered sow under one year.

FIVE HORSES and FOUR COLTS. All Farm Implements, Grain, etc., will be sold at the same time.

TERMS: Seven months credit on approved notes.
JOHN SMITH, AUCTIONEER, BRAMPTON, Railway Stations: Snelgrove, C. P. R., two miles; Brampton, C. P. R. and G. T. R., four miles.

J. G. SNELL ESTATE, SNELGROVE, ONT.

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OF THE Valley Home Herd OF

SHORTHORN CATTLE

On Wednesday, March 22nd, 1899, at our farm one mile from Meadowvale Station, C. P. E.

OUR entire herd of Shorthorns, consisting of 30 head, comprising such well-known Scotch families as Nonpareils, Minns, Jilts, Cecilias, Bessies, and Duchesses of Gloster. Sired by the best imported Cruickshank and Campbell bulls. Among the lot are some very fine show animals, bred from imported stock, as well as cows that are very heavy milkers. The young things are a choice lot, sired by such imported bulls as British Statesman, Comet, Golden Crown, and Grand Sweep. In all ten bulls will be offered, also the imported bull, British Statesman, a first-class show bull, bred from one of the best milking strains in Scotland. See Catalogue, which will be sent on application. All will be sold without reserve, as Mr. Pearson is giving up farming.

JOHN SMITH, M. P. P., AUCTIONEER, BRAMPTON.
S. J. PEARSON & SON, MEADOWVALE, ONT.

RYE GRASS SEED Meadow Lawn STOCK FARM.

CLYDESDALE HORSES, SHORTHORN CATTLE.

The most fashionably bred stud of Clydesdale Horses and herd of Shorthorn Cattle in America. Prices reasonable. Quality assured.

N. P. CLARK, ST. CLOUD, MINN.

FOR SALE:

2 Pure Suffolk Punch Stallions, 3 years old, and 1 Yorkshire Coach Stallion, 5 years old, also Hereford Cattle.

Correspondence solicited.
MOSSOM BOYD CO., Big Island Farm, BOBCAYGEON, ONT.

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I keep only the best. For stock of all ages write or call.
WM. SHARMAN, "Ridgewood Stock Farm," SOURIS, MAN.

HOPE FARM, ST. JEAN BAPTISTE, MAN.

Headquarters for Galloway Cattle. Apply to T. M. CAMPBELL, MANAGER.

JERSEY BULL

FOR SALE... No. 3022. Two years old in February. Solid color; black tongue and switch. Took first prize as calf in Winnipeg.

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I have a number of fine sable pups for sale, by Merlin, out of Fanny G. They are full brothers of Belhelvie Dina, winner of two firsts and special at Winnipeg in 1898. Price, \$10. Also Fox Terrier pups from my prizewinning stock, \$10 each. Certificate of registration with each.

W. J. LUMSDEN, Hanlan, Man. PLEASE MENTION FARMER'S ADVOCATE.

SIX--SHORTHORN BULLS--SIX

I HAVE six for sale, from 9 to 14 months old. Write for prices, etc.

GEORGE RANKIN, HAMOTA, MAN. FOR HEREFORDS

CALL ON OR WRITE TO J. E. MARPLES, DEFEAU (Pipestone branch C. P. R.) MAN.

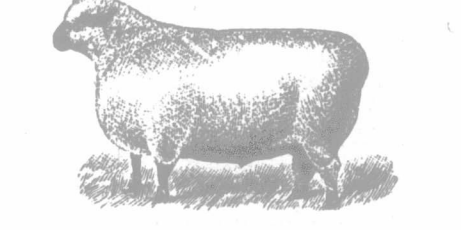


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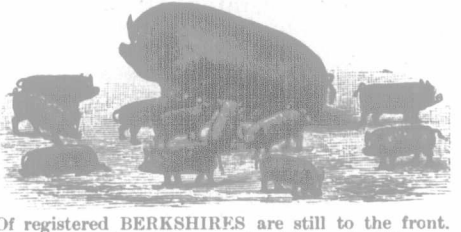
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STALLIONS: Has a few choice ones for sale. Also Pure-bred



SHROPSHIRE SHEEP, Rams and Ewes, from the most fashionable imported blood. Inspection invited. For full particulars, Apply: Box 483, Brandon, Manitoba.

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Of registered BERKSHIRES are still to the front. I have a number of fine sows bred for early litters to my two stock boars, "Fitz Lee" and "General Booth," and expect a lot of fine early pigs. Sows to farrow every month. Am now booking orders for spring pigs; unrelated pairs supplied. Correspondence solicited. Address, J. A. MCGILL, Neepawa, Man.

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Young bulls and heifers of good breeding, and excellent young pigs, now for sale. Write or call. R. L. LANG, OAK LAKE, MAN.

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A few Improved Large Yorkshires for sale. Write to JAMES BRAY, Longburn, Man.

J. C. & A. W. FLEMING, Rosebank Stock Farm, Pilot Mound, Man.,

Breeders of Poland-China pigs and Cotswold sheep of choice quality, offer select seed potatoes of eighty varieties. Write for catalogue.

LEICESTERS!

Young Rams and Ewes for sale. Write or call on A. D. GAMLEY, Box 193. BRANDON, MANITOBA.

Fort Rouge Poultry Yards has still left for sale

a few choice Golden Wyandottes, Langshans, Plymouth Rocks, Leghorns, Brahmas, Pekin Ducks, Bronze Tuskeys, Toulouse Geese, Games, Fancy Pigeons, and Belgian Hares. Write for circular and price list. Fort Rouge Poultry Yards, WINNIPEG, MAN.

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IF YOU WANT FURNITURE--IT IS WELLED FREE--OUR BIG CATALOGUE, CONTAINING OVER THREE HUNDRED ILLUSTRATIONS. SCOTT FURNITURE CO., THE WIDE-AWAKE HOUSE, WINNIPEG, MANITOBA.

Bronze Gobblers!

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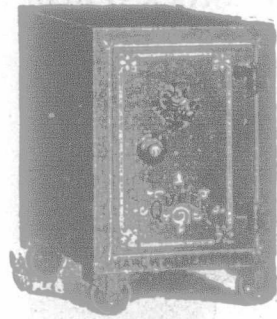
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The property of Capt. Milloy (known as "Oak Park Stock Farm"), consisting of 550 acres, in the County of Brant, two miles from Paris and four miles from the City of Brantford. This is admitted to be one of the very best Stock and Grain farms in Canada. It is in a very high state of cultivation, and splendidly fenced throughout. On it is a most excellent

LARGE STONE MANSION

Beautifully furnished, and fitted up with all modern improvements: bath room (hot and cold water), and heated throughout by hot-water system. A very large NEW BARN, with

MAGNIFICENT STONE STABLING

Fitted up in the latest improved style, with all latest conveniences. Abundance of pure spring water, forced throughout the buildings by hydraulic ram. This grand property is situated in the garden of Canada, on the Grand River. The soil is a rich clay loam. Inspection of farm and buildings is cordially solicited. For further description and illustration, see Christmas number, 1898, page 599. For terms, apply to

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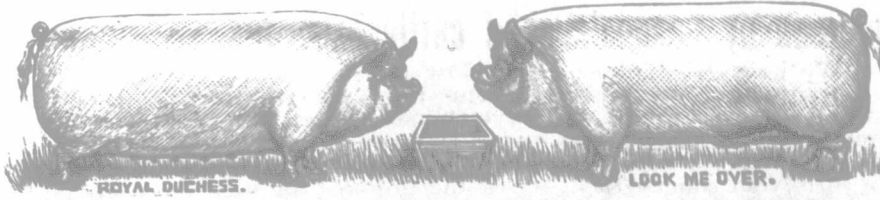
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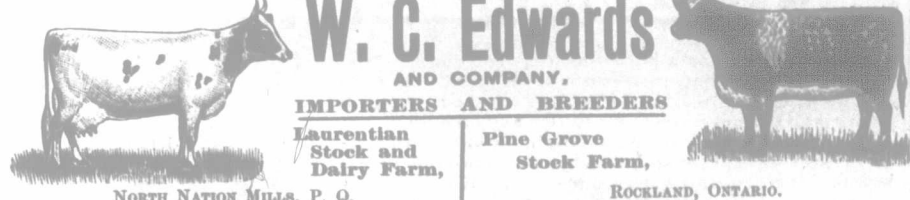
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Among them being the undefeated prizewinning boar, "LOOK ME OVER" 2602. Also Royal Duchess, a first prize sow at the Royal Show of England in 1888, and several choice young sows bred to Look Me Over; also, young stock of both sexes, single or in pairs, not akin. We ship to order, prepay express charges. Guarantee stock as described.

-om D. C. FLATT, MILLGROVE P. O., ONTARIO.



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JOS. W. BARNETT, Manager

We can be reached either by steamboat, the C. P. R., or C. A. R.; the C. A. R. making connections with the G. T. R. at Coteau Junction. Rockland is our station on all lines.
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WE ARE OFFERING FOR SALE 8 HIGH-CLASS YOUNG IMPORTED SHORTHORN BULLS

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W. E. H. MASSEY, Proprietor.

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Winners of the herd prize at both the Toronto and London fairs last fall, also some thirty other prizes. The herd comprises fourteen head of imported cattle, many of them winners of valuable prizes on the Island; also some thirty animals carefully selected from the best Canadian herds. Heifer and Bull Calves, also good Cows, always on sale.

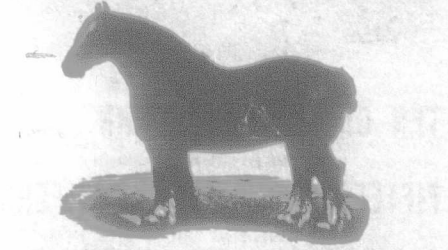
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Handsome White Leghorn Cockerels (from Wyckoff eggs), also Brown Leghorn Cockerels for sale.

Dentonia Trout Ponds
"Eyed" Trout Eggs, also yearling and two-year-old Brook Trout for sale. Market trout supplied in-season.

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From One to Four Years Old. Also



SEVERAL THREE YEAR OLD FILLIES,

All registered and warranted sound. Inspection invited.

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Stallion, Brood Mare, or Filly?
If so, it will be to your interest to correspond with us. We have them of all ages and of the best breeding strains. In the pedigree will be found the names of such sires as Grandeur, Macgregor, Macpherson, Darnley, and Good Hope.
I. DEVITT & SONS, FREEMAN P.O.
Farm quarter mile from Burlington Station, G. T. R.; nine miles from Hamilton, C. P. R.
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COACH STALLION For Sale. The aged stallion, King Fairfield.

Sound, gentle, and sure; is an AI stock horse. He is half-brother to Princess Royal, the silver medal mare at Toronto this year, and grandsire of Prince George, winner of the silver medal for the best stallion, any age, at Toronto this year. Will be sold cheap.
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We are now offering a limited number of imported stallions and mares, and looking orders for young Ayrshires from our show cows. Shetland ponies and fancy poultry. **E. Ness & Sons, Howick, Que.**

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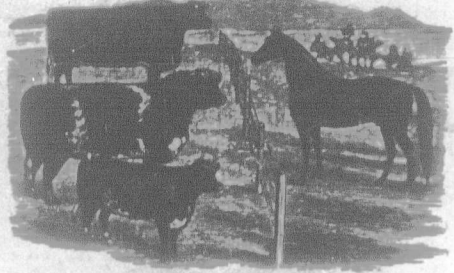
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Turn of the Tide (2403), Vol. X., coming 4 years old, weighing over 1,700 lbs. For particulars, Address—**Samuel McArthur, Oro Station.**

FOR SALE: Three Choice Young BULLS,

Red and roans. Imported Prime Minister heads my herd. -om
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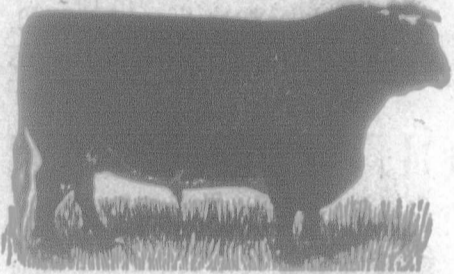
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from seven to twelve months,
FIFTEEN COWS AND HEIFERS,

served by imported bull, Golden Fame
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Catalogue sent on application. Visitors
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17 FIRST-CLASS SHORTHORN BULLS
YOUNG
Big, good, and in fine form. Also cows and
heifers of various ages. All of which will be
sold at moderate prices. Send for catalogue.

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Claremont Station, C. P. R.
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B. SNARY & SONS, CROTON, ONT.,
Breeder of

Shorthorn Cattle,
Poland-China and
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We offer for sale seven good
young bulls, from seven to
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heifers of choice quality
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Chief Captain. Pigs of
both sexes and all ages at
moderate prices, quality
considered.

Ten Shorthorn Bulls FOR SALE,
Seven red and three roan, from 10 to 16
months old. In a herd of 30 head, no white
calves since 1892.

THE HERD HAS PRODUCED
such bulls as Topman, Banker, Lord Stanley,
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1ST PRIZE and SWEEPSTAKE WINNERS
at the principal shows of Canada and the
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A Yonge street trolley car leaves the Union Station,
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SHORTHORNS

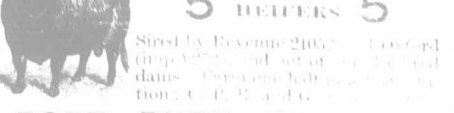
OF THE
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And from such sires as Scotchman 2nd, Duke of Lav-
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bell. A few splendid young bulls ready now. Cot-
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5 BULLS 5
HEIFERS



Sired by Revenue 2105; 1st class
bull, 1893, and out of 1st class
dam, Revenue 1845, both of the
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Is a positive and guaranteed cure for that obstinate disease
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that is much needed, easily applied, and being backed by a guarantee of
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He feels good and his spirit is high. It aids digestion—
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Shorthorn Cattle and
Lincoln Sheep. Herd
prize and sweepstake at
Toronto Industrial Ex-
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Herd headed by Import-
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High-class Shorthorns of
all ages for sale. Also
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Apply on

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AM OFFERING
Seven Splendid Young Bulls,
4 TO 11 MONTHS OLD.
Two descended from Waterloo Daisy (World's Fair
dairy test), balance Missie and Lady Jane strain, and
by Kineller of York; as well as a few cows and
heifers equally well bred.

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OFFERS
15 SHORTHORN BULLS
with Scotch-topped pedigrees.
Splendid reds and roans, and sired
by Valkyrie 21806, and out of dams
by Young Abbotburn's Heir 13947
and Imp. Mariner 2720. Also a
few good females of all ages and in good form. Farm
one mile from depot.

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FOR SALE!

2 REGISTERED SHORTHORN BULLS
twelve months old, sired by the sweepstake
bull, Moneyfuff Lad.

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SHORTHORN CATTLE AND LINCOLN SHEEP.

Imp. Baron Blanc 11th at head of herd. Seven
young bulls for sale—good ones. Also a few females.
Stud rams all imported from H. Dudding, Esq.; the
same blood as the 1000-guinea ram.

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In Bulls I am prepared to dispose of a dozen fine,
healthy, and grandly bred, growthy fellows, reds and
roans. In Females anything I have on hand I will
price; many of which are by imported Kinellar Sort
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Shorthorns and Shropshires
Offers young bulls and heifers, rams and ewes of the
most approved breeding and finest quality, at moder-
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Station, Telegraph, Telephone, Post Office,
three minutes' walk.

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Twelve choice young Shorthorn Bulls by Indian
Statesman—29004—, Fifteen young Cows and
Heifers with calves by side, or forward in calf. Twelve
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Flashlight; also Berkshire Boars and Sows of all ages.
All of which will be sold at moderate prices. Farm
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For Sale: 4 young bulls of the choicest breeding and
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The Safest, Best BLISTER ever used. Takes
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Removes all Bunches or Blemishes from Horses
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Every bottle sold is warranted to give satisfaction.
Price \$1.50 per bottle. Sold by druggists, or
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for its use. Send for descriptive circulars.
THE LAWRENCE-WILLIAMS CO., TORONTO, CAN.

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SHORTHORNS.—Imported Knuckle Duster,
and the great sire and show bull, Abbotford, in
service. Several choice heifers for sale, and a grand
lot of young bulls by Calthness, from good milking
dams. Some splendid Leicester ewes and rams for
sale also.
A. W. SMITH,
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8 SHORTHORN BULLS 8

Reds and roans, by St.
Louis (a Morton-bred
bull), and from our best
cows reserved from sale.
Also a few females of all
ages.
FITZGERALD
BROTHERS,
Mt. St. Louis, Ont.

7 - SHORTHORN BULLS - 7 SCOTCH BREEDING.

Good growthy ones from 5 to 15 months. Also an
aged bull. Would spare a few heifers. Prices very
moderate. Write—
SHORE BROS., White Oak, Ont.

SCOTCH-TOPPED SHORTHORNS.

An offering five young bulls, four of which are by
Guardman, the sire of St. Valentine, champion for
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Good young bulls of Scotch breeding
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Exeter Station, G. T. R., half mile from
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H. K. FAIRBAIRN, Rose Cottage Stock Farm, Thedford, Ont., OFFERS FOR SALE

2 SHORTHORN BULLS, one 3 years old and
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SCOTCH SHORTHORN BULLS AND HEIFERS HERD ESTABLISHED IN 1872.

Such sires as imported Royal George and imported
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6 Shorthorn Bulls from 7 to 14 months old, of choice breeding. Apply to J. R. McCALLUM, Iona Station, Elgin County, Ont. -om

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Offering high-class A.
J. C. C. cows and heifers
in calf, and heifer calves;
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High-grade cows in calf;
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WILLIAM ROLPH, Markham, Ont., offers
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Offering: Eight females, to calve short-
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and see them.
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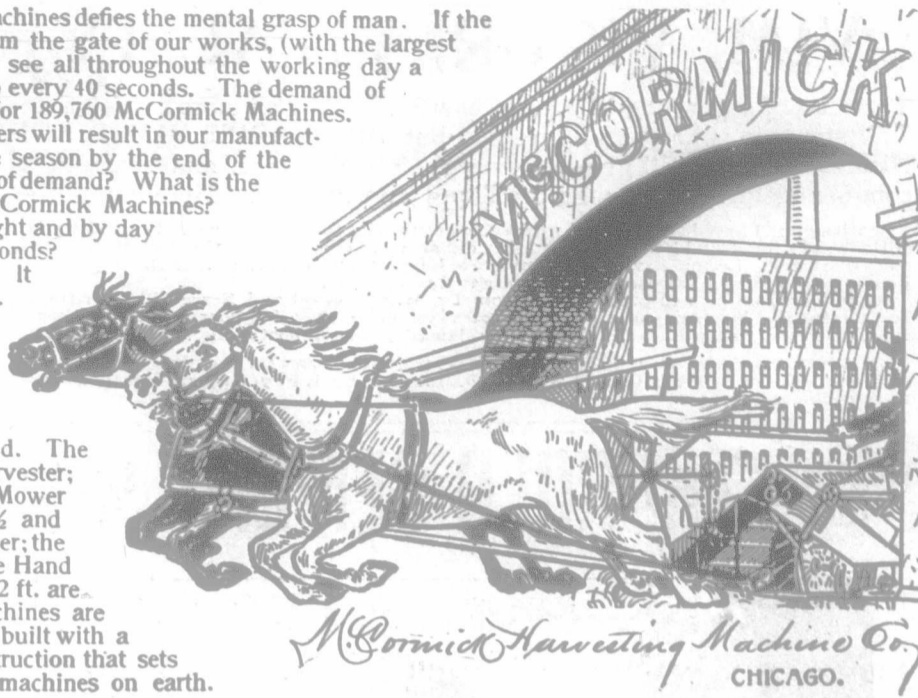
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Bulls, Cows, and Heifers.
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Breeders of high-class, deep-milking Ayrshires.
Sweepstakes young herd at Ottawa. Shropshire
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sale. Visitors met at Queen's Hotel. Give us a
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Choice Ayrshires and Poultry FOR SALE.

A number of fine Ayrshire Bulls fit for service, sired by Jock Morton, and from heavy-milking dams, and a few heifers. Also, choice birds in Banded Rocks, Black Spanish, and Rouen and Cayuga Ducks.

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MAPLE CLIFF Dairy and Stock Farm.

Three young bulls fit for service, and bull calves. **AYRSHIRES, BERKSHIRES, TAMWORTHS,** Booking orders for spring litters. **R. REID & CO., HINTONBURG, ONT.** Five minutes' walk from Cen. Expl. Farm, Ottawa.

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AYRSHIRES

from deep-milking strains. Two bull calves for sale. Write or come to **BROOK HILL FARM,** Carr's Crossing, G. T. R. on Trout River, Que.

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FROM IMPORTED STOCK. I offer for sale three (3) bulls, 9, 10 and 13 months old, all sired by prizewinning imported bulls, and from high-class imported cows; also five bull calves from 1 to 4 months old.

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THE ORIGINAL Non-Poisonous Fluid Dip

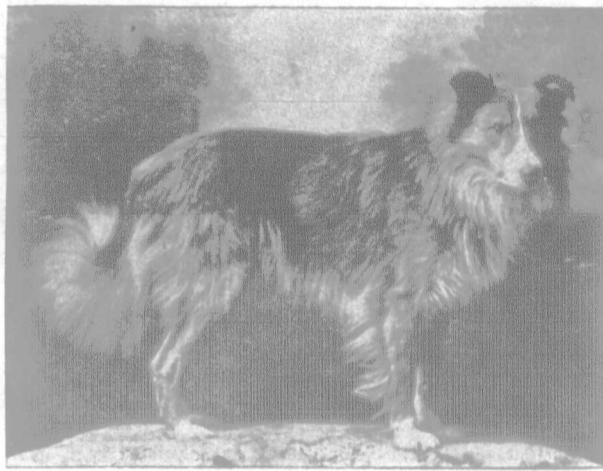
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NO DANGER! SAFE, CHEAP, EFFECTIVE. BEWARE OF IMITATIONS. Sold in sufficient in each to make large lots at... **75c.** wash, according to strength required. Special terms to breeders, ranchmen, and others requiring large quantities. Sold by all druggists. Send for pamphlet.

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Twelve New Subscribers



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TO ANY SUBSCRIBER sending us the names of 12 NEW yearly paid-up Subscribers we offer a young COLLIE, six weeks old or over, eligible for registration, and bred by Mr. R. McEwen, Byron, Ont., whose stock has been so successful in the leading shows in Canada and the United States. (See page 36, January 20th issue.)

Bagster's NEW COMPREHENSIVE Teacher's Bible,

Containing the Old and New Testaments, according to the authorized version, together with new and revised helps to Bible study—a new Concordance and an indexed Bible Atlas, with SIXTEEN FULL-PAGE ILLUSTRATIONS, PRINTED IN GOLD AND COLOR.

BINDING—

Strong, durable, flexible American Seal improved circuit cover, round corners, red-under-gold edge.

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Would retail at from \$3 to \$4. We will send (carefully packed, post prepaid) this Bible to anyone sending us the names of TWO NEW SUBSCRIBERS to the FARMER'S ADVOCATE at \$1.00 each.

ADDRESS **The WILLIAM WELD CO., Limited, Winnipeg, Manitoba.**

"GEM HOLSTEIN HERD." STOCK FOR SALE **INGLESIDE HEREFORDS.**

We only keep and breed registered Holstein-Friesians. We have now some choice young bulls and heifers, also some older animals, all of the very best dairy quality, that we will sell, one or more at a time, on reasonable terms. Correspondence solicited.

ELLIS BROS., Bedford Park P. O., Ont. 7-y-om Shipping Station, Toronto.

MAPLE HILL.. HOLSTEIN-FRIESIANS

BULL CALVES from Queen DeKol 2nd, winner of Prince of Wales prize over heifers of all breeds in public test; Lady Akkrum 2nd, 67 1/2 lbs. milk in one day and 2 1/2 lbs. butter in a week; Kaetje DeBoer, 63 lbs. milk and 3 lbs. butter per day at 14 years old; Marceua, 57 lbs. milk per day at 14 years old; Daisy Teake, dam of Daisy Teake's Queen, the great test winner, finest cow I ever saw.

G. W. CLEMONS, ST. GEORGE, ONT.

TAMWORTHS Orders booked for Spring Pigs. Pairs not akin. Send for Illustrated Catalogue. Address,

H. D. SMITH, COMPTON, QUE.

For Sale: Two Clydesdale Stallions Rising three years old; also some Fillies and Mares from two to seven years old, all registered. For further particulars, address **DAVID CARSTAIRS, Bowmanton, Ont.**

GOSSIP.

Messrs. W. J. Mitchell & Co., Chemists, of Prince Albert, N. W. T., and Winnipeg, Man., advertise a positive cure for Lump Jaw in cattle or no pay. They publish a testimonial from the large cattle exporters, Messrs. Gordon, Ironsides & Fares, Winnipeg, attesting to the efficacy of Mitchell's Antirump Jaw Cure. Any breeder of stock troubled with this disease in his herd should at once see to it that a remedy is procured and applied. The above firm will send free to all who apply their latest treatise on Lump Jaw.

R. NESS' CLYDESDALES, AYRSHIRES, POULTRY.

Perhaps no breeders in the Eastern Townships are more widely and favorably known than Robt. Ness and his family of sons, having taken as they have an active interest in live stock matters for a great number of years. Their farms are very conveniently located—right alongside the G. T. R. at Howick Station, on the Quebec side of the river, some 40-odd miles from the City of Montreal. Their first importation of Clydesdale horses was made in 1879, and in the 20 years more than that number of shipments have been personally selected in Scotland; as well as on many trips shipments of work horses have been exported to the large cities where our best animals find a ready market. Mr. Ness frequently selects animals in England and Scotland of not only horses, but breeders of other stock find it an excellent opportunity to have him make personal selections on account of his wide acquaintance in that country and large experience in the business. Among the Clydesdales which he has imported and which he still owns is the Scotch-bred Lawrence Again (7909), by Prince Lawrence and out of Rosy of Boyhall, by Lord Lyon—now in his tenth year—a horse which has stood the test to a remarkable degree and one which has done much to advance the popularity of the breed in this country, possessing as he does an abundance of quality, with the best of feet and legs; bone and hair of the best quality, a grand disposition, and splendid markings. Lawrence has not only distinguished himself as a show horse in this country by winning, with one single exception, all the firsts he ever competed for, but landed many of the good ones offered across the water on his native soil in his young days. Fillies by him also proved too strong for their competitors in Scotland. Of recent importation we were shown at our visit the five-year-old brown horse, Fullerton (8916), by Prince of Kyle 7165, by Prince of Wales, and out of Lady Buchanan (11895), by Go Ahead (5092), horses possessing a thick, well-formed, stylish body, with good quality of bone and hair, with the best of feet, and in all freshness and a beautiful actor. His grandsire, Go Ahead, was twice imported to America, and considered one of the great horses of the century. The thick-bodied three-year-old, Flowboy (8394), by Lord Lyon (8567) and out of Jess, by St. Blaise (3887), was also purchased last year, and is a big, thick fellow, promising to reach a ton in weight, with as good a set of feet as were ever placed under a horse. He has all the bone necessary for his weight, and splendidly covered with hair. His body is thick and deep, with a grand back and good length of quarters—in fact, he is an all-round good colt. We also saw a pair of home-bred fellows by Lawrence Again, which possess good size, one in particular having extraordinary style, and both are grandly furnished. Three of the seven females are matured mares in foal. Eusebeth, by Macbeth, was imported as a yearling some eight years ago. Half of her six foals now go to make up the present bunch—a four-year-old mare, a splendid yearling horse colt, and a filly foal. She is again due in April to Lawrence Again. Lady Banff, by Knight of Banff, was foaled in May, 1898. Three of her four colts are now on the farm, one a thick, four-year-old yearling horse colt. Nettie, the six-year-old bay mare, is also due in March to Lawrence. Considering them as a bunch they are an exceedingly creditable lot and will hold their own in comparison with others in the breed, as past fair reports have shown.

The Ayrshire herd is conducted personally by Mr. R. R. Ness, Jr., who has done much to associate the name among the foremost in the breed. He has some 50 or more animals constantly on hand, and not only is now but has been breeding with a special view to productiveness. Among the mature cows we saw were mentioned Minnie of Burnside 6281, Golden Guinea 4454 and out of Lane and 3050. She was the first prize dry cow at Ottawa in 1898. Lady Scotty of Parkhill 5570, by Duke of Parkhill 4066, is rising eight years old and again due in August. She is a splendid type of a dairy cow and produces a grand udder. Lady Ariel 7045, by Canada Chief 6179 and out of Fanny 2nd of Parkhill, is a large, smooth, four-year-old cow, with immense milk vessels, and capable of producing a large quantity of milk in a year. She is due in September. Winnie of Howick 7420, by Noble Boy 6285 and out of Bell of Burnside 6284, is another four-year-old cow specially worthy of a passing notice, possessing a strength of constitution, with quality, and promises to be a great producer. Among the sires employed in the herd have been such animals as Golden Guinea 4454, Matchless 7590, Lockerby Chief 6223, Harcourt of Burnside 7890, and at present the young imported Monarch of the Glen—was imported by Mr. Wm. Wylie, and selected when a youngster on account of his strength of breeding, which he promises to equal in conformation, and many of the females are in calf to him; and from his strictly up-to-date quality and pedigree, Mr. Ness hopes to advance equal to the rapid age in which we live. In the showings the Clydesdales and Ayrshires have each commanded a strong place in a strong competition, the horses usually making a clean sweep of their portion of the prize list, while the Ayrshires have had much heavier competition. Yet with the heavier competition they have been able to hold their own most creditably and establish an enjoyable reputation for the herd. The demand has been such of recent years as to keep the herd reduced, and many satisfactory sales have been made; in fact, the number we heard Mr. Ness run over would occupy too much space here to enumerate, but at present a few splendid and promising young things are on hand and a great many cows are yet to calve.

AYRSHIRE CATTLE of the most fashionable and deepest-milking strains. No trouble and expense spared to produce the best. Stock of all ages for sale. Scotch Collies. **WM. STEWART & SON, MENIE, ONT.**

4 HOLSTEIN-FRIESIAN BULLS from 9 to 12 months old, of choice breeding. William Suhring, Sebringville, Ont.



SCABBY SHEEP. \$5000 REWARD

To any party who can produce a scabby sheep which the Lincoln Dip will not cure. Write for particulars.

Lincoln Sheep Dip Co. 255 Elliott St. Bldg. Buffalo, N. Y. Canadian Office: WEST CHEMICAL COMPANY, 15 Queen Street East, Toronto.

HIGHEST TYPE OF BACON HOGS. 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.

STOCK BOARS.—Three imported boars, all winners at the Royal Show, including championship and gold medal. Also, two Canadian-bred boars, both first prize winners at Toronto, 1898.

BREEDING SOWS.—Royal Duchess, Royal Queen and Royal Queen 2nd, all winners of highest awards at Royal Show, and 15 of the best sows to be purchased in England. Also, 50 matured Canadian-bred sows of the choicest quality.

PRIZEWINNING STOCK A SPECIALTY. J. E. BRETHOUR, BURFORD, ONT.



SHEEP, CATTLE, CALF, HOG, LABELS AND EAR PUNCHES.

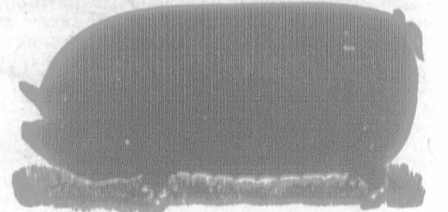
Patent Grain Truck and Bagger. Send for circular and prices to R. W. JAMES, Bowmanville, Ont.

PINE GROVE FARM HERD OF LARGE YORKSHIRES.

Imported and Canadian herd, from the Hasket family, which has taken more prizes at the leading fairs in Canada and the World's Fair at Chicago than any other family of Yorkshires in America.

JOSEPH FEATHERSTON, Streetsville, Ont.

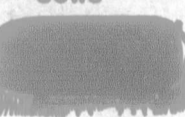
LARGE English Berkshires.



Herd headed by four first prize stock boars of large size, strong bone and fine quality. Young Boars and Sows, all ages, for sale. Orders booked for Spring Pigs.

GEORGE GREEN, - FAIRVIEW P.O., ONT. Telegraph and Station: Stratford, G. T. R.

FOR SALE... A CHOICE LOT OF LARGE Yorkshire SOWS



in pig to a show boar; also boars fit for service, and fall pigs of good length and quality. Berkshire sows in pig, and boars fit for service, at very reasonable prices. Two good Short-horn bulls, red-rosans. Write

H. J. DAVIS, Woodstock, Ont.

HALDIMAND HERD OF BERKSHIRES

Boars and Sows, two to four months old, by Royal King, the choice of the winning pen in 1897, in the hands of Geo. Green, his breeder.

ALB. NAUMAN, Fisherville, Ont. Haldimand County.

ENGLISH BERKSHIRES.

Herd headed by two imp. boars, Nora B's Duke and Royal Star III, half brother to Columbia's Duke, which recently sold for \$1,200.

Choice pigs from 6 weeks to 4 months old. Write for prices. H. BENNETT & SON, St. Williams, Ont.

ROSE HILL FARM James Dorrance,

SEAFORTH, ONTARIO. Breeder of REGISTERED BERKSHIRES of the most approved type. Write for particulars for sale. Write at once and send 15c for Poultry Annual to C. C. SHOEMAKER, Freeport, Ill.

VIM, VIGOR, VITALITY

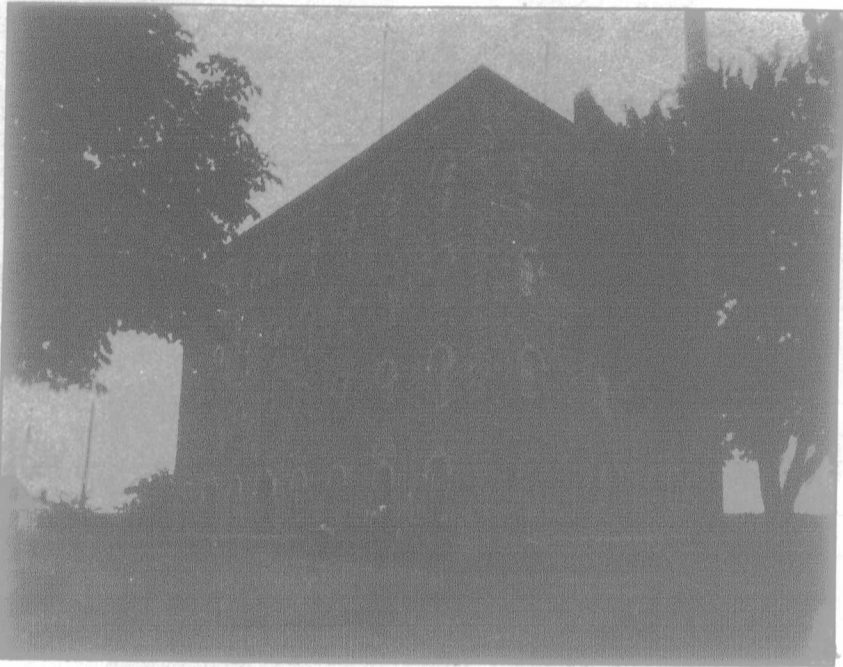
The man of vigor, the woman of energy, are the winners in life's race. The struggle is hard and tiresome but DR. WARD'S BLOOD AND NERVE PILLS will give you energy, vigor, health and strength to conquer obstacles and make life happy and healthy. Here is proof;—

Gentlemen: I have been troubled with kidney complaint for several years. I sent for a box of Dr. Ward's Blood and Nerve Pills, and they did me more good than all the doctors and medicines combined. I would have been in my grave long ago if it hadn't been for Dr. Ward's Pills. I am 70 years old, and I am sure I owe my life to this medicine.

My wife has also derived great benefit from Dr. Ward's Blood and Nerve Pills, her trouble being dyspepsia, liver complaint and a run-down system. Since using your remedy she is now enjoying the very best of health. Yours truly, James Monahan, Boatbuilder, Carleton, N. B.

Dr. Ward's Blood and Nerve Pills are sold at 50c. per box, 5 boxes for \$2 at druggists, or mailed on receipt of price by THE DOCTOR WARD CO., Limited, Dept. F. 71 Victoria Street, Toronto. Book of information free.

Work Done With THOROLD CEMENT Speaks for Itself.



THE PACKARD ELECTRIC LIGHT CO., ST. CATHARINES, ONT.

Thorold Cement was used exclusively in the Walls of this Building from the Foundation to the Roof. Built in 1882. St. Catharines, Ont., Sept. 12, 1898.

Estate of John Battle, Manufacturers of the Thorold Cement, Thorold, Ont.:

DEAR SIRS,—In regard to your Thorold Cement, I have had considerable experience with it, and I take pleasure in stating a few facts, as follows: In June, 1883, I was appointed by the late Sylvester Neelon to superintend the erection of his large stone mills (now the Packard Electric Light Co. Works). The walls and foundations and masonry in connection with the building were all laid with your Thorold Cement (nearly 2,000 barrels being used in the work), which gave first-class satisfaction. I have used your Thorold Cement on a great many other jobs; in fact, have always used your Thorold Cement, which gave the best of satisfaction. I would cordially recommend your Thorold Cement for all buildings, either under water or above. Yours truly, JAMES TWEESLEY, Millwright, St. Catharines, Ont.

For Free Pamphlet with full particulars, address

ESTATE OF JOHN BATTLE, THOROLD, - ONTARIO.

Agents wanted in unrepresented districts. -om

A Record of over 50 Years as Manufacturers of Farm Implements!

COSSITT'S ALL-STEEL BALL-BEARING DISC HARROW.

FITTED WITH PATENT LOCK SCRAPER.

THE BEST SELLER ON THE MARKET.

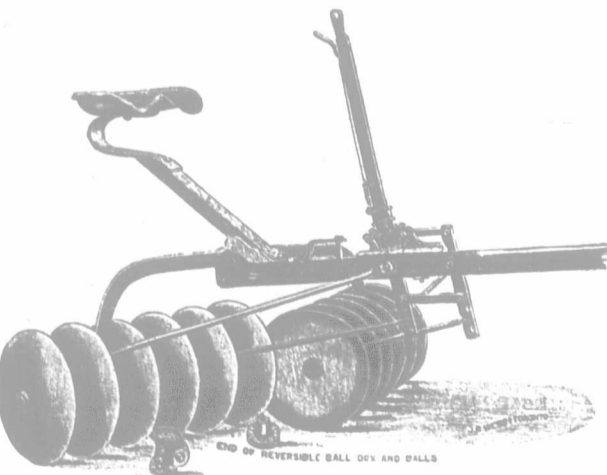
Agents cannot get a better line than

"COSSITT'S"

BALL-BEARING MOWER, TIGER AND ITHACA HORSE RAKES, HARROWS, SCUFFLERS, CORN SHELLERS, ROOT PULPERS, &c.

Manufactured in the most complete and up-to-date factory in Canada.

Send for Catalogue.



THE COSSITT BROS. CO., LIMITED, BROCKVILLE, ONT. ESTABLISHED 1849.

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OXFORD HERD OF POLAND-CHINAS

The home winners of the boars, Conrad's Model and Klondike, assisted by Bacon Boy and Lennox. Has won 64 out of a possible 69 first prizes. Stock of all ages for sale. Write for prices or come and see

W. & H. JONES, OXFORD CO. -om MT. ELGIN, ONT.

CHRIS. FAHNER, Crediton, Ont.

I have to hand a choice lot of young

TAMWORTH SOWS Some carrying their first litter and others carrying their second litter. Those sows will be sold at cut prices, by writing at once. Also, write for my new Catalogues. -om

STRATFORD BROS., BRANTFORD.

Tamworth boars, Dorset rams, Shetland ponies, Light Brahmas, Houdans, Cornish Indian Game, Black Langshans, White Langshans, White Plymouth Rock, Buff Plymouth Rock, Barred Plymouth Rock. Prices right.

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The earliest established, the greatest prizewinning and most reliable herd in Canada. If you want Duroc-Jerseys, we have them pure. We keep no others. They are quiet, non-squealers, prolific, long, deep and heavy. Just the pig for profit. Write us. -om TAPE BROS., Ridgetown, Ont.

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Farmers and Dairymen!

The best packages for putting up butter, honey, jam, etc., whether for shipment or for storage, are made from our

Antiseptic Ware

WRITE FOR CATALOGUE AND PRICES.

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Hull, Montreal, Toronto, Quebec, London, Hamilton, Kingston, St. John (N. B.), Halifax, Winnipeg, Victoria, and Vancouver, St. John's (Newfoundland).

MARK YOUR ALUMINUM EAR MARKERS

your live stock of whatever kind with the thoroughly reliable, rust proof, non-corroding, easily read... WILCOX & HARVEY MFG. CO., 501 Lake St., CHICAGO, ILL.

LOTS OF PEOPLE HAVE Hatched 90 to 100 per cent. OF THE FERTILE EGGS IN THE

TORONTO INCUBATOR

You can do as well. Write for circulars. Address:

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SHOEMAKER'S POULTRY BOOK on POULTRY and Almanac for 1899. 100 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 Poultry, with Lowest Prices. Price only 15c. C. C. Shoemaker, Freeport, Ill., U. S. A. -om

MAMMOTH BRONZE TURKEYS.

S. G. Dorkings, B. P. Rocks, S. C. Brown Leghorns, Black Minorcas. Finest lot of cockerels we ever had. Mated not akin. Write—

T. & H. SHORE, White Oak, Ont.

CURED TO STAY CURED HAY FEVER Dr. HAYES, Buffalo, N. Y.

SWEET PEAS

The ideal of floral beauty, easily grown, always appreciated. We offer the following select collection of large flowering Sweet Peas, distinct in shades of color and markings, a large, full packet of each separate variety, rich in value, sure to please.

AURORA, white striped salmon
BRILLIANT, dense scarlet
CAPTIVATION, magenta or claret
EMILY ECKFORD, mauve, wings blue
HER MAJESTY, rose pink
LOVELY, soft shell pink
MARS, bright scarlet
MAID OF HONOR, white, edged blue

METEOR, salmon, wings pink, veined
MRS. ECKFORD, primrose yellow
PRINCESS VICTORIA, scarlet, wings mauve
RAMONA, blush and white, striped
ROYAL ROBE, pink, wings blue
SENATOR, maroon and white striped
THE BRIDE, fine large white

Any seven of above varieties for 25c., or the 15 varieties for 50c. With each collection or order for Sweet Peas, we will enclose a slip telling how to plant and cultivate to get best results.

SWEET PEA MIXTURES.

To those having limited space for separate varieties we offer the following mixtures, they will create surprise and admiration for beauty in colors and markings.

Large flowering sorts, mixed, 1/2 lb. for 15 cents; 1 lb. 25 cents; per lb. 50 cents.
Choice sorts, mixed, 1/2 lb. for 10 cents; 1 lb. 15 cents; per lb. 30 cents.
Mailed Post-paid on receipt of price.

STEELE, BRIGGS' FAMOUS SEEDS

Sold by leading merchants throughout Canada. Ask your dealer for them. You will get the best seeds grown.

Our aim is to supply the highest standard in quality, the largest possible quantity at a moderate price, and to please the careful buyer. Should you get less varieties for the same money, you will get the best, it pays best.

A BEAUTIFUL CATALOGUE.

A profusely illustrated Catalogue will be sent, with each new order, and to intending purchasers on application; contains the latest new Sweet Peas, Garden and Flower Seeds, Plants, Bulbs, etc. Interesting to amateurs and practical gardeners.

The Steele, Briggs Seed Co., Limited, Toronto

**COUPON
NEW
SWEET PEAS**

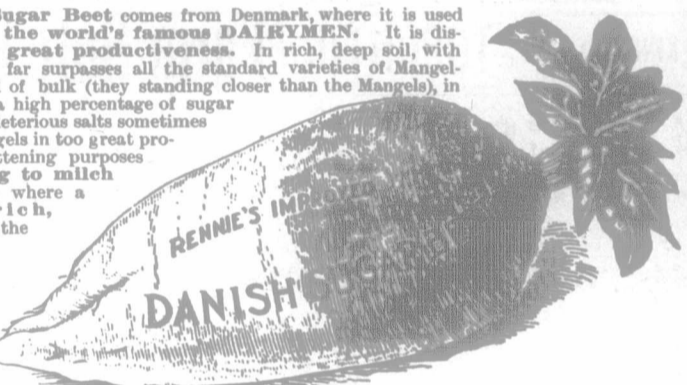
CUT THIS COUPON OUT
And mail with order for any of the above offers, and we will send free with order for 10 to 25 cents - One paper **RED RIDING HOOD SWEET PEAS**; 30 to 50 cents - 1 paper **CUPID DWARF WHITE SWEET PEAS**.

NEW SUGAR BEET

"DANISH IMPROVED RED-TOP."

For Feeding to Milch Cows - Noted for its wonderful Butter-producing qualities - Of fine shape; splendid color; a very heavy cropper and easily harvested.

This New Sugar Beet comes from Denmark, where it is used exclusively by the world's famous DAIRYMEN. It is distinguished by its great productiveness. In rich, deep soil, with good cultivation, far surpasses all the standard varieties of Mangel-wurzel in yield of bulk (they standing closer than the Mangels), in connection with a high percentage of sugar and absence of deleterious salts sometimes contained in Mangels in too great proportion. For fattening purposes and for feeding to milch cows, in cases where a liberal flow of rich, creamy milk is the main object (for butter production), this variety of root, without exception, is the best in the world. The roots are nice and clean, of fine shape and of splendid color, and growing considerably above ground, are more easily harvested than any other Sugar Beet.



CAUTION! We control this novelty, and sell it only direct to reliable merchants and farmers. IN SEALED PACKETS to avoid fraud.
SOLD ONLY IN SEALED PACKETS. - 1/4 lb., 20c.; 1/2 lb., 30c.; 1 lb., 50c.; ADDRESS ALL ORDERS - 5 lbs., \$2.25, post-paid.

WM. RENNIE - SEEDS - TORONTO.

RELIABLE SEEDS

FOR THE FARM AND GARDEN.

OUR STOCK INCLUDES ALL THAT IS BEST IN

Garden and Field Roots, Flower Seeds and Flowering Plants, Grasses, Clovers, and Seed Grain.

Illustrated Catalogues mailed free on application.

WILLIAM EWING & CO.,
SEED MERCHANTS, 142 MCGILL STREET, MONTREAL, QUE.

PAGE FENCE QUALITY.

When you seek the best fence that can be made from wire, we know that you will buy the

Famous Coiled Spring Page.

It isn't like any other on earth - it's better. It was the first and it is still the foremost woven wire fence. For the truth about its uses and quality, address

THE PAGE WIRE FENCE CO. LTD.
WALKERVILLE, ONT.
or DAVID ROSS, N.W. Agt
Box 552, Winnipeg.

PLEASE MENTION FARMER'S ADVOCATE.

GOSSIP.

K. McIvor, Virden, writes us under date of February 3rd: - "There is quite a boom in Native Rye grass seed for the coming season. I have 4,000 pounds booked now, all to go by rail. At this date last year I only had orders for 600 pounds. Shorthorns all doing well."

Mr. R. L. Lang, proprietor of Spruce Bank Farm, Oak Lake, paid our office a pleasant visit recently. He informed us that his Shorthorns and Berkshires had come through the winter so far in excellent condition. He now offers for sale some excellent young bulls and heifers, and young Berkshire pigs.

In a letter received recently from J. A. McGill, Neepawa, breeder of Berkshires, he says: "I have two nice litters farrowed this week. My old veteran sow, 'Rosamond,' has a litter of ten, as even as peas in a pod - real beauties! This, I believe, is as good a brood sow as there is in Manitoba. Inside of two years she has farrowed fifty-eight pigs, raising nearly all of them, amongst them a lot of show stock, including the 1st and 2nd sow under six months at Winnipeg in 1897. This litter will be ready to go the last of March, and the parties who get them are going to be pleased. They are sired by 'Fitz Lee.' So they have the 'Baron Lee' blood on one side, and the 'Enterprise' blood on the dam's side, a good cross."

CLEVELAND BAY STALLION FOR SOURIS.

The celebrated Cleveland Bay stallion, Ingmanthorpe Victor 859, having been lately purchased from Knittel Bros., Boissevain, by Mr. Frank Walker, will make his route this season in the Souris district. Ingmanthorpe Victor should prove a profitable horse for farmers to use.

S. J. PEARSON & SON'S SALE OF SHORTHORNS.

The announcement of the dispersion sale of the Valley Home Herd of Messrs. Pearson & Son, of Meadowvale, Ont., on March 22nd, is made in our advertising columns. A glance over the advance sheets of the catalogue shows that the sale will be made up of exceptionally well-bred cattle, and an inspection of the herd proves that, as a rule, the cattle are as good as their pedigrees; the half dozen yearling bulls, of suitable age and size for service, being an especially good lot, while the yearling and two-year-old heifers include a number of exceedingly meritorious animals. Most of these are sired by the grand imported bull, British Statesman, bred by the late Mr. Sylvester Campbell, of Kinellar, Aberdeenshire, sired by the Cruickshank bull, Royal James, and out of Red Bessie, by Gladstone. British Statesman ranks among the very best bulls in the Dominion, being one of the good, big sort, full of substance and quality combined. He has a model head, a full and prominent bricket, stands wide between his fore legs, has deep and well-sprung ribs, a strong loin, long level quarters, long and broad thighs, and a broad, full twist. He stands well on his legs, is active and useful, has a mild, quiet disposition and has proved a capital breeder. Among the yearling bulls is Scotch Statesman, a rich roan 17-months-old son of imp. British Statesman, and of imp. Mina Lass, by Gravesend. He is a strong, thrifty young bull of fine character and quality, and promising to make a useful sire, as have all the bulls bred by this grand old cow. Her son, Mina Lad, was sold as a two-year-old for \$325 when Shorthorns were selling at low prices, and proved a very impressive sire. Gloster Statesman is a handsome and thick-fleshed roan, 12 months old, and popular with the Scotch families, Nonpareils, Minas, Cecellias, Jills, etc., first-class Scotch-bred bulls only having been used in their breeding. Special mention may be made of the excellent two-year-old heifers, Nonpareil 50th, by British Statesman, out of Nonpareil 39th, and Mina Lass 10th, by the same sire and out of imp. Mina Lass, a pair which would do credit to any herd in the Dominion, being of the low-set, blocky, thick-fleshed sort so much in favor at the present time. Nonpareil 51st, Nonpareil 53rd and Jubilee Jilt are a beautiful trio of yearling heifers, of similar character, by imp. British Statesman, and bred straight from well-known and favorite Scotch families in the herd of the late Mr. Campbell, of Kinellar. Cecelia 12th is a useful three-year-old cow of one of the best of the Cruickshank families, and sired by British Statesman. The grand old imported cow, Mina Lass, who has bred 10 calves, and all good ones, several having sold for high prices, will be in the sale, as also the broad, blocky, thick-fleshed Sowerby's Lass, by Mina Lad, and from one of the best families in the Sheriff Hutton herd, having the benefit in her breeding of several of the prize-winning bulls at the Royal Show. She has proved a capital breeder and mother, and is only 5 years old. A useful lot of breeding cows of the same good families, in breeding condition, being heavy milkers and raising calves of which there are a number of promising ones of both sexes, some of which will be sold with their dams. This sale will afford an opportunity to get good cattle of first-class breeding, and that is what is needed all over the country. The catalogue will be ready for mailing about March 1st, and all interested should send for it. Meadowvale is easy of access, being a station on the Orangeville and Teeswater branch of the C.P.R., only two miles from Streetsville Junction, and one mile from the farm, and five miles from Brantford, G.T.R.

BELLEVILLE BUSINESS COLLEGE

Students have a LARGER EARNING POWER who acquire the following lines of preparation under our efficient SYSTEM OF TRAINING. IT HAS NO SUPERIOR.

1. Bookkeeping.
2. Shorthand.
3. Typewriting.
4. Telegraphing (Commercial and Railway Work).
5. Civil Service Options.

Students may commence telegraphing on the first of each month, and the other departments at any time.

J. FRITH JEFFERS, M. A., Principal.
Address: BELLEVILLE, ONT.

IT DEPENDS ON THE PROCESS

Used in the manufacture of salt whether the production is of the highest grade or not.

The "Vacuum Process" for making salt is the most modern and scientific.

It makes a finer and purer salt, most readily dissolved, and perfectly even in crystal.

WINDSOR SALT

Manufactured by **The Windsor Salt Co., Limited,** WINDSOR, ONT.

What is Your Work?
If you are dissatisfied with your situation, your salary, your chances of complete success, write to The International Correspondence Schools, Scranton, Pa., and learn how others so situated are getting **An Education by Mail.**
Students in the courses of Mechanical or Electrical Engineering, Architecture, or any of the Civil Engineering Courses are soon qualified for salaried drafting room positions. Write for pamphlets.
The International Correspondence Schools, Box 900, Scranton, Pa.

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STRATFORD, ONTARIO.
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.
-om W. J. ELLIOTT, PRINCIPAL.

FERRY'S SEEDS
were famous years ago - their fame grows every year - as the seeds most to be relied on - as always the best. For sale by leading dealers everywhere. Five cents per paper and always worth it. Insist on having them. Run no risk - buy Ferry's. 1890 Seed Annual is free. D. M. FERRY & CO., Windsor, Ont.

TORONTO ENGRAVING CO.
92 BAY ST
CUTS BY ALL PROCESSES
LIVE STOCK A SPECIALTY.
PLEASE MENTION FARMER'S ADVOCATE.

DO YOU REQUIRE ROOFING?

WE HAVE THE LATEST IN

METAL SHINGLES



OUR

Patent "Safe Lock" Shingles

Interlock each other on all four sides, leaving no edges or laps to open up. They cost no more than wooden shingles, are practically FIRE and LIGHTNING proof, give a building a handsome appearance, and are absolutely rain and storm proof. Can be put on easily by anyone. We send free samples and catalogue to intending purchasers.

THE METAL SHINGLE AND SIDING CO. LIMITED, PRESTON, ONT.

\$8 to \$15 MACHINE
to weave your own fence of Coiled, Hard Steel Spring Wire, 22 inches high, at 25 Cts. per Rod. \$20 buys wire for 100 rod fence. Agents Wanted. Catalogue Free. **GARTER Wire Fence Mach. Co.** Box G, Mt. Sterling, O.

S. CROUCH, Box 12, Ridgetown, Ont., General Agent for Ontario. FRED SMITH, Box 16, Brandon, Man., Agent for Manitoba and N.-W. Territories. No duty on wire.

YOU CAN USE
Coiled Spring, Cable, Barbed or Smooth Wire in our **\$10 MACHINE**
And Build the BEST Wire Fence at 16 to 24 Cents per Rod.
Agents Wanted. Write for Catalogue **BOWEN CABLE STAY FENCE CO.** Box 58, Norwalk, O., U. S. A.

BINDER TWINE

FARMER'S

PURE MANILA, 650 FT. TO LB. SPECIAL MANILA, TIGER, STANDARD.

Farmers! Don't be taken in. There is none "just as good." These twines will not bunch at the knotter, and a Binder will run all day without stoppage, thus saving time, annoyance and a "lot o' cussin'."

We pack our twine in bags of the size of ordinary grain bags, and we are not ashamed to put our name upon it. Don't take any other.

CONSUMERS' CORDAGE CO., LIMITED, MONTREAL.

SEND FOR ILLUSTRATED PRICE LIST.

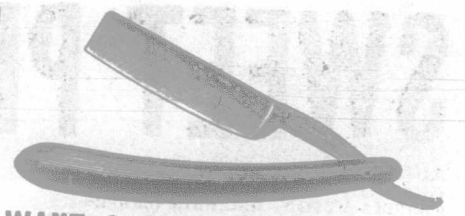


WE SELL EVERYTHING!

240-lb. Platform Scales—Weights from 1/2 ounce to 240 pounds—only \$5.00. Solid Steel Hammers, 25c. each. Weigh Scales—Platform, 1,200 lbs.—only \$16.00. Butcher—10c., 15c., 25c. each.

WILKINS & CO., 166 and 168 KING ST. EAST, TORONTO.

There Is No Doubt About the MERIT of DEHORNING
It cuts both ways, does not crush. One clip and the horns are off close. Write for circular. **The Keystone Dehorner Mfg. Co., Platon, Ont., Can.**



WANT A GOOD RAZOR?

If you send one dollar (\$1) to Stanley Mills & Co., of Hamilton, Ont., they will at once mail you a first-quality concave or hollow ground Razor—a magnificent Razor—with fancy, strong celluloid handle; a Razor that is worth and was made to sell for \$3. It is an English-made Razor, ground in Germany by the finest cutlers in the world. No better Razor can be made. Our price is only \$1 each, post-paid, to any Canadian address. When ordering, say if you want round point or square point.

Address—Letter Order Department, Stanley Mills & Co., Hamilton, Ont.

FOR SALE!

Pair of Market Scales, capacity six (6) tons. Guaranteed to weigh correctly. Framework and timber in splendid condition. Has lately been inspected and found in perfect condition in every way. Here is an opportunity for farmers or others to buy a cheap pair of Scales.

Price, One Hundred Dollars.

Address—"SCALES," Care of FARMER'S ADVOCATE, London, Ont.

FAIR OR EXHIBITION CHROMOS AND DIPLOMAS. Exhibition or Fair Chromos in striking colors—attractive stock designs. They cost but little more than cheap printed bills, and draw the crowd. Fair Diplomas cost but little, and are more highly appreciated than cash prizes. Orders filled by return Express.

THE LONDON PRINTING AND LITHO. CO. (LIMITED). Lithographers and Printers, London, Ont.

Farm Help Wanted!

GOOD RELIABLE MEN WHO UNDERSTAND MILKING AND FARM WORK IN GENERAL. Apply to—**A. C. WELLS & SON, CHILLIWACK, B. C.** EDEN BANK DAIRY FARM.

CLEAN "ALPHA" SWEEP AT SIOUX FALLS

The superiority of "Alpha" disc made butter has become so pronounced and so firmly established that every competitive butter contest of any importance has become an "Alpha" clean sweep. This has been the history of every Annual Convention of the National Buttermakers' Association since its organization in 1892. The 1899 Convention at Sioux Falls this week has confirmed previous results.

We are just informed by wire that First Prize, with all accompanying awards, medals and honors, has gone to A. W. McCall, of Creston, Iowa, with a score of 97, and Second Prize and honors to O. P. Jensen, Wells, Minn., with a score of 96 1/2.

And further, that out of 229 entries scoring above 90, or, in other words, all high-class butter entries, 206 were positively "Alpha" disc made, with some of the few remaining in doubt and probably so.

Our representative adds that the convention is a big, enthusiastic one, and that so far as separators are concerned, the "Alpha" is first, last, and everywhere—everybody in sight being an "Alpha" man—just as must necessarily be the case in such a representative gathering of intelligent, wide-awake, and up-to-date creamerymen and buttermakers who know the difference between separators from their own use of them.

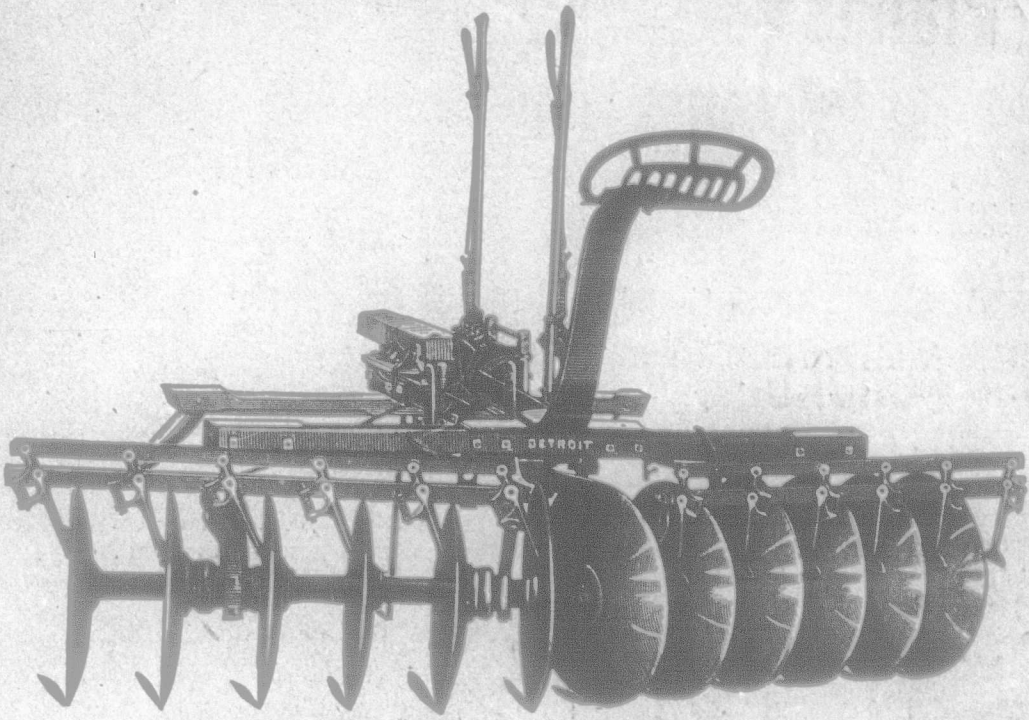
We congratulate the buttermakers generally upon the success of their convention, and the prize-winners particularly upon their deservedly successful exhibits.

THE CANADIAN DAIRY SUPPLY CO.

327 COMMISSIONERS ST., MONTREAL.

FROST & WOOD CO. (Limited),

HEAD OFFICE AND WORKS:
SMITH'S FALLS, - ONTARIO.



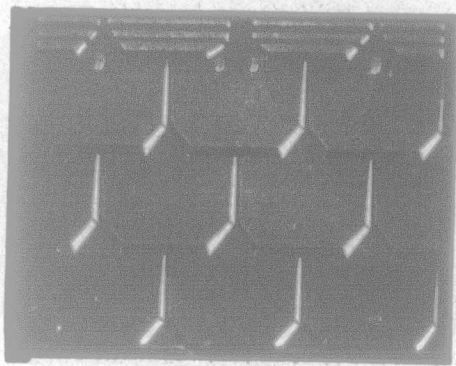
THE DETROIT DISK HARROW.

Made in different sizes: 16, 18 and 20 inch plates; double steel frame; adjustable scrapers; light draft; cuts an even depth. No weight on horses' necks. Patented device for changing pole for two, three or four horses without removing any bolts. This is the most popular and perfect working harrow in America. Call at one of our agencies and see sample. Order early. Stock selling fast.

Toronto Branch 77 Jarvis St. Winnipeg Branch: Market Square.

They're Lightning Proof!

THAT IS ONE OF THE MANY SUPERIOR QUALITIES OF OUR



EASTLAKE STEEL SHINGLES.

They give absolute protection from any damage by lightning.

In addition, they are more easily and quickly laid than others—can't leak, can't rust, and can't burn—and are the most economical and durable shingle you can buy.

Galvanized or painted; with our special patent side lock and water gutter—found in no other shingle.

Better write us for full information.

METALLIC ROOFING Co.

(LIMITED)

1182 King St. W., TORONTO.

GOSSIP.

The Toronto Industrial Exhibition dates have been fixed for August 25th to September 9th.

Messrs. H. Cargill & Son, Cargill, Ont., write: "We have been kept so busy answering inquiries for Shorthorns since advising you of the sale of an imported bull and two imported heifers to the Messrs. Smith, of Maple Lodge, that we have not had an opportunity of writing you an account of subsequent sales. Since then we have made the following sales: Elythessome Girl Ind, a good strong, even one; Ury Girl Ind, a beautiful heifer; Belle of Plainville and a grade heifer; to James Hawkins, Shelbourne, Ont. Baron's Heir Imported, a massive, thick-fleshed, good imported bull to William Dickinson, of Mildmay, Idlewild and bull calf to J. M. Fisher, of Mildmay, Ont. This is a fine big Strathallan cow who was bred at Toronto Industrial in her palmy days. Christopher (Imp.), to Jas. Douglas, of Caledonia, Ont., a very even calf of fine character, good handler, and should make an impressive sire. Red Rose (Imp.) and heifer calf, to Cookson Bros. of Downey, Iowa, a big massive heifer, thick-fleshed and a good doer, with a beautiful calf by illustrious, a pure Cruickshank bull. Rosa Lee (Imp. in dam), with her bull calf, to McGregor Bros., Mimosa, Ont., a good cow, very compact, even, and close to the ground. Myrtle 5th and heifer calf, to Mr. Hoffarth, of Carlsruhe, Ont., a very sweet heifer and half-sister to Capt. Robson's show heifer, Myrtle.

Our other cattle are doing splendidly, especially the five imported bulls which we still have. Orange Duke (Imp.), who was winner in his class and sweepstakes bull at Banbury show in Scotland this year, continues to look like a show bull. Diamond Jubilee (Imp.), although never shown, is a show bull sure, big, long, even, and thick fleshed all over. The three imported bull calves, Red Ribbon, Governor General, and Baron's Pride, are growing immensely, and please us better every day. They are strong, healthy fellows, with grand backs, deep, level in the lines, good bone, and will develop into good sires or we are much mistaken in our estimate. The imported females are doing very nicely, are healthy and growing.

SHROPSHIRE SHEEP FOR CANADA.

On Friday, the 6th inst., Alfred Mansell & Co., Shrewsbury, Eng., shipped by the White Star line eleven Shropshire ewe lambs and one ram lamb for the Hon. John A. Bryden, M. P., Minister of Agriculture for Ontario, Canada, owing for their sires such exceptionally good rams as Butter Blue 9377, bred by Mr. David Buttar and purchased co-jointly by Mr. Bowen-Jones and Mrs. Barrs for 100 guineas; Adam Odstone 9347, bred at Odston, by the Royal winner, Odstone Commodore; Star of Rosdon No. 4, 9308. On their dams, side the select shipment traced back to the following distinguished sheep: Bath Brick 5797, The Champion 7163 (purchased for 100 guineas), Royal Jubilee 3702, Ringleader 3003, Attractor 2917, etc., etc.

ALEXANDER GALBRAITH'S CLYDESDALES.

Perhaps as fine a collection of Clydesdales as can be found in one stud in America have their home at Janesville, Wis., at the barns of Mr. Alex. Galbraith, secretary of the American Clydesdale Association. The animals are all in breeding and individuality, and purchasers may rely on square treatment. Of the horses now in the stud, Mr. Galbraith writes, under date of February 6th, as follows: "Amongst the Clydesdale stallions which I offer for sale at present are the following: Royal Windsor (10005), weighs 2,000 pounds, by Lord Eskine; Royal Rover (10004), 2,000 pounds, by Mount Royal, dam by Prince of Wales; That's a Right (9987), 2,100 pounds, by Lochhart's Hand-some Prince, out of the great Darnley mare, Lenora; St. Joseph (10420), 1,975 pounds, by a son of Balmie Prince (the 2900 yearling), out of a Royalist mare; Prince of Edengrove (10100), a charming five-year-old son of the Prince of Wales horse, Patrian, out of the double Royal winner, Lizzie of Inchpark; Glenside, dell, by Sir Everard; Prince Ito and Coleridge, by MacGregor (Prince Ito being from same mare as Prince Patrick); Brownies, a magnificent three-year-old son of Topknot; Netherland, by Fishwood's Best, etc., etc. Three-fourths of these horses have been prominent prizewinners in Scotland before importation last October, and taken all over, are perhaps the best collection of the breed on this continent to-day. Prices and terms very reasonable. Address ALEX. GALBRAITH, Janesville, Wisconsin."



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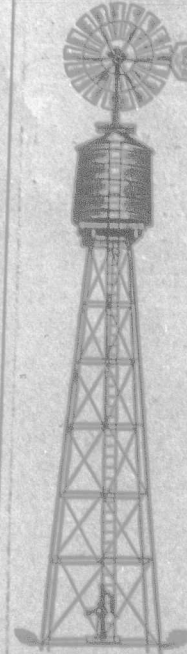
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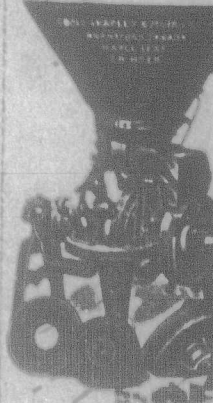
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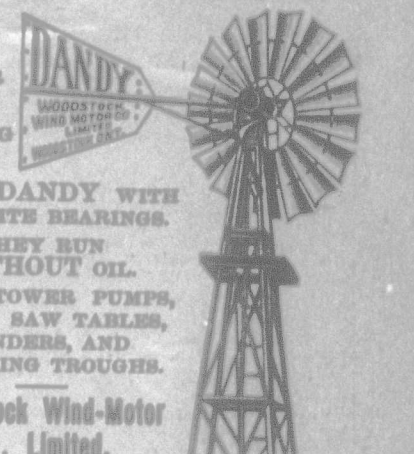
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TUBERCULOSIS IN CATTLE
IMPORTANT TO FARMERS.

The following letter is sent by the Department of Agriculture at Ottawa to persons desirous of having their cattle tested for Tuberculosis, and sets forth the conditions under which the Dominion Government undertakes to apply the Tuberculin Test FREE OF CHARGE.

DOMINION OF CANADA.
DEPARTMENT OF AGRICULTURE.
OTTAWA.....1898.

DEAR SIR,—
In response to your letter of the..... I beg to say that the following are the conditions upon which the Department applies the Tuberculin test to cattle—
When a person makes application to the Department to have his cattle tested for the purpose of ascertaining whether any of them are affected with Tuberculosis, a Government Inspector is sent to test, and all expenses in connection with this are paid by the Department. The owner must accept all responsibility for the result of the test. The Government do not order the slaughter of diseased animals. No compensation will be given in cases where owners slaughter of their own free will. If any of the animals are found to be suffering from the disease, they will have to be isolated and the shed or corral in which they are kept will be quarantined. The owner will then be prohibited from selling any of them or their raw products. Should he desire to have his own slaughterer and dispose of their carcasses for food he will have to consult the local authorities as to whether he will be allowed to sell them. The premises in which diseased animals have been must be cleaned and disinfected to the satisfaction of the Government Inspector, as recommended on page 11 of the Farmer's Bulletin on Tuberculosis, a copy of which I enclose you. The premises in which diseased cattle have been quarantined will also have to be disinfected and cleaned, as mentioned above, after the animals have been disposed of. When the Minister of Agriculture receives a certificate from the Inspector that the disinfection has been done to his satisfaction the premises will be released from quarantine. No application will be considered unless the owner agrees to submit all his cattle to the test.

If an applicant refuses to have his cattle tested after having made formal application, he will be charged with and will have to pay whatever expenses may have been incurred by the Department in connection with the sending of a Veterinarian to make the tests.

Upon your signing and returning to us the attached form of request a Government Inspector will be sent to test your cattle.

Yours truly,
W. E. CLARKE,
Deputy Minister of Agriculture.

To the Honorable the Minister of Agriculture for Canada, Ottawa, Ontario.

DEAR SIR,—I hereby request that my entire herd of cattle, consisting of—

..... Bulls,
..... Cows,
..... Steers,
..... Heifers,
..... Calves,


be tested for Tuberculosis with Tuberculin, and I hereby agree to conform to the Government conditions as expressed in their letter dated..... which I acknowledge having received.

The nearest railway station to my premises is..... on the line of the..... Railway Company, and if I am notified when the Inspector will arrive at the station I will meet him and drive him to my premises and, when the testing of my animals is completed, will drive him back to the station free of charge.

Dated..... Signed.....

on Address.....

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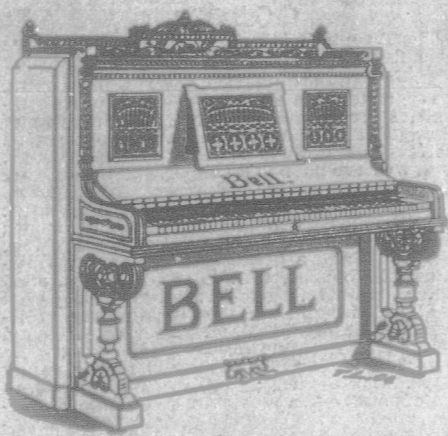
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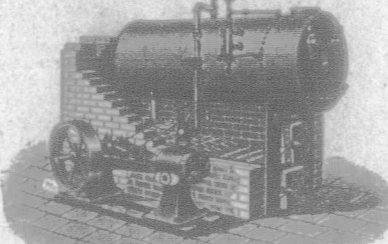
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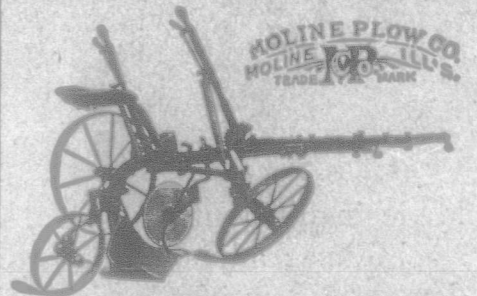
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