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THE FARMER'S ADVOCATE

AND HOME MAGAZINE

* AGRICULTURE, STOCK, DAIRY, POULTRY, HORTICULTURE, VETERINARY, HOME CIRCLE.*
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VOL. XXXIV. LONDON, ONTARIO.

JUNE 20, 1899.

WINNIPEG, MANITOBA. No. 480.

DR. WARNOCK'S
ULCERKURE

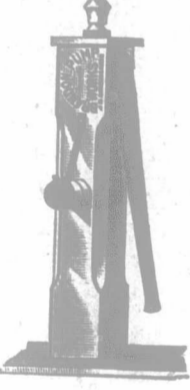
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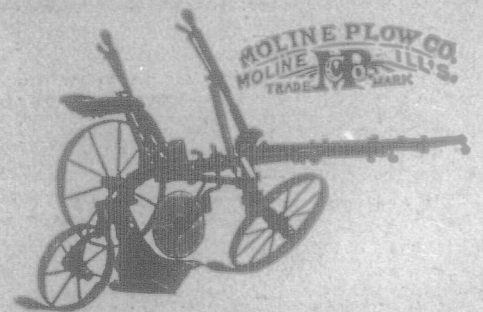
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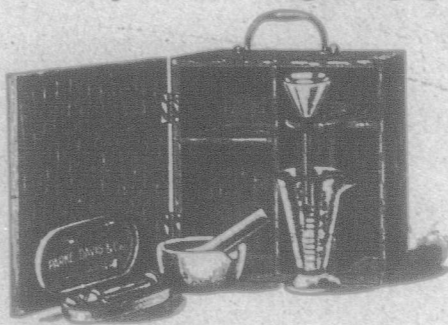
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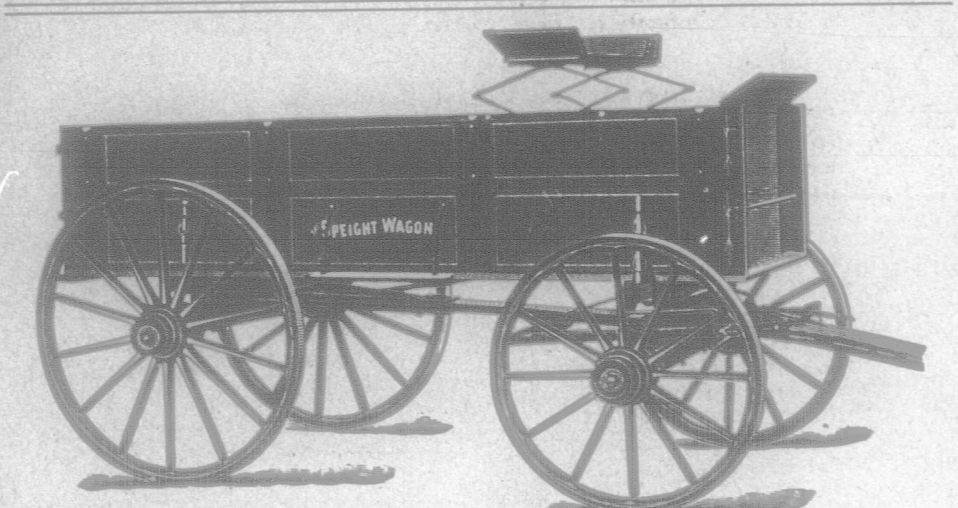
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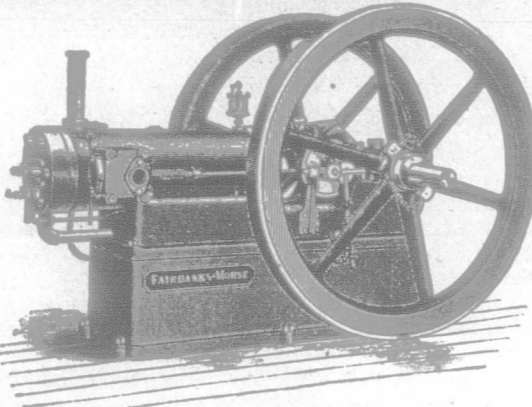
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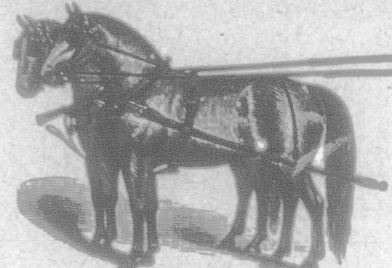
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* AGRICULTURE, STOCK, DAIRY, POULTRY, HORTICULTURE, VETERINARY, HOME CIRCLE. *

Vol. XXXIV.

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

No. 480

Good Prospects for Clean Crops.

In spite of the wet, backward spring, the growth has been wonderful, and crops that have had any kind of a chance are well up to the average. Owing to the delay in seeding, the dampness of the soil caused a great quantity of the surface weed seeds to germinate; these were killed by the seeding operations, and then once the seed was in the ground the germination was rapid, and the grain shot ahead of the weeds, with a good chance of keeping ahead throughout the season. The spring has not in most localities been favorable for the use of the newly-introduced weeders, many carloads of which have been sold. These implements may yet come in useful on the summer-fallow this season, and will at all events be ready for next year. In using a weeder the soil must be in proper condition, and more weeds can be destroyed by them when they have just germinated and before they have advanced beyond the first pair of leaves. They will also do good work in breaking up any crust that may form after heavy rains, and can be used even if the grain is up a considerable height. A great deal of attention is being given to cultivated grasses, and more land has been seeded down this year than ever before.

The Brandon Experimental Farm in Early June.

One can never visit the Experimental Farm at Brandon without being inspired with the wonderful possibilities there are for agricultural advancement. This spring the avenue and ornamental trees make a magnificent showing, and with the excessive moisture in the soil will doubtless make a great growth this season. The native maples, where kept trimmed in proper shape, make very handsome avenue trees. The Russian poplar also makes a pleasing variety and a good tree, but should not be trimmed at all; and it prefers high ground, having died out on the farm wherever placed on low land. The native spruce is much better than any other variety of evergreen, and can be grown with very little trouble under proper management. There are on the farm a number of very fine tamarack trees that make a nice variety and do well.

Of the many varieties of plums none have proved perfectly hardy except the native, of which a large number of selected ones give promise of proving their merit this year. Some young trees only three years from seed were blooming this spring. Mr. Bedford has also a lot of native grafts which have struck well, and are from choice native trees. Small fruits, currants, gooseberries and raspberries all came through the winter well. Of the many varieties of raspberries all seemed perfectly hardy, with the exception, perhaps, of the Caroline.

Standard apples having failed on the farm, an effort is being made to evolve something from crossing and hybridizing on the *Pyrus Baccata*, the true Siberian crab; of these there are 150 perfectly hardy young trees, three, four and five years old, some blooming this year for the first time. A considerable addition has been made to the arboretum adjoining Superintendent Bedford's house. Among the ornamentals for this purpose are a great variety of beautiful things. The lilacs are specially full of bloom this year, and of these the best variety is the Charles X.

In the vegetable garden the seeds all seem to have made an extra good germination this year. A specialty is being made of onions; 40 varieties are under test.

One of the most interesting departments on the farm is that devoted to the grasses and clovers. The Brome grass is going to make a record growth this year; on May 1st Mr. Bedford found it had made a growth of eight inches, and on the 5th day of June we measured some that exceeded two feet

six inches in length. The demand for seed has been very great, far exceeding the supply; the home-grown seed germinating 84 per cent., as against 22 per cent. for the best imported. Brome grass should be sown without nurse crop, between May 15th and June 15th, but there is one very nice plot on the farm that was sown in August. The clovers have also proved fairly hardy, White Dutch being perfectly hardy. Alfalfa sown four years ago is also perfectly hardy, and makes a rich, rank growth. Sweet clover also makes a strong growth, and is perfectly hardy, and may prove useful as a feeder of nitrogen to the soil.

An interesting test was made a few years ago. A piece of prairie sod that had once been a hay meadow was chopped to pieces with a spade harrow, and several varieties of cultivated grasses sown and harrowed in to see if they would catch, but the result has been a failure, none of the grasses making any headway.

Cultivation.

A writer in the *Wallace Farmer*, discussing the question of the conservation of soil moisture, concludes a lengthy article as follows:

"The whole philosophy of cultivation sinks into the one great object of making a perfect soil mulch. The work involved in making the mulch saves the crops during the drouth, and if the weather is favorable such careful cultivation will produce extraordinary growth, and repay the cost of labor a hundredfold. The question, How long should this mulching be kept up? often arises. It should be kept up during the period of the growth of stem and leaf. As soon as a plant begins the formation of its fruit it should be let alone. Cultivation disturbs rather than aids the development of fruit. The formation of fruit consists chiefly in the translocation of the matter already elaborated in stem and leaf, and there is no need of forcing the soil to yield more plant food. This period is marked by the appearance of the flowers. When the tassel of corn begins to show, or a few scattering blossoms appear in the potato patch, the cultivation should stop. If the work has not been properly done up to that time, one had just as well call it a failure and quit, because there is nothing that can be done at this late time which will amend past neglect. It is then too late to try to put oil in the lamp."

This is sound teaching, but there is this additional point to keep in mind in this connection: For the growth of grain in the early part of the season the ideal condition is to have the seed-bed and the supply of available plant food such as to favor the rapid and vigorous growth of the young plants, the food required at this stage of the plant's growth being for the building up of roots, stems and leaves; and then as the ripening season advances the food supply should be of such a nature as to encourage the formation of grain or seed rather than leaves and stems. Too much manure or a deep loose soil tends to feed the stems of the wheat plant too long into the ripening season, whereas for growing roots such conditions are exactly what are wanted, as in this case it is food for the building up of the root that is required. Once the principles that underlie successful cultivation are clearly understood, every operation will be performed, as far as conditions allow, with a view to carrying out the required conditions, and the results would be of immense benefit to those who exercise their brains as well as their muscles.

Change of Quarters.

We take pleasure in announcing that the FARMER'S ADVOCATE has removed from its old offices in the Clement Block to new and more commodious premises in the handsome new McIntyre Building, Main street, Winnipeg, where we shall be glad at all times to welcome farmers and stockmen visiting the city.

Plowing Matches.

| | |
|-------------|------------|
| Oak Lake | June 21st. |
| Wawanesa | " 23rd. |
| Virdean | " 27th. |
| Bradwardine | " 28th. |

Grain Inspection.

In reply to your letter of May 31st would say that I have read the new bill on grain standards and grading as it appears in the *Free Press*. The bill, so far as it goes, with one or two exceptions, I believe is along the right lines. As to the "board of survey," my impressions are against it, as by the method of appointment the chances are that every member of it would be interested in the grain trade, and the producer, whether rightly or wrongly, will have but little confidence in a survey board so composed.

Then, again, the calling of the Western Grain Standards Board in off seasons for the making of commercial grades is left to the will of one man, the Chief Grain Inspector. Of course, someone has to assume these responsibilities, but the weakness of the bill is that it does not go far enough. As to what further amendments to this act are needed to place the handling of our crops upon a satisfactory basis, I would say that I urged very strongly, not only upon our delegates from the Western Grain Standards Board, but upon the Ottawa people as well, the importance of providing proper machinery for a general and complete supervision of the whole grain trade, my proposition being as follows:

- (1) A "Board of Control" composed of three men independent of the grain interests.
- (2) The Board to advise with and instruct the Chief Inspector as to the grading of the wheat, as laid down by the Inspection Act.
- (3) Also to decide all appeals against Chief Inspector's or Deputy's grading.
- (4) Power to investigate all complaints as to weight, dockages, or other irregularities; in fact, having full powers to supervise everything in the handling and grading of our grains.

By such a system all powers for carrying out such a measure would rest outside of any one engaged in or connected with the trade, otherwise there must be dissatisfaction. A small inspection fee would meet any expenditure for such Board of Control. The grain trade during the next ten years will develop beyond our most sanguine expectations, and any *Grain Inspection Act* is incomplete which does not fully grasp the whole situation. Where is there any other interest in any way approaching this in magnitude which is not surrounded by many safeguards?

Some four years ago, in discussing through the *ADVOCATE* the question of wheat grades, I predicted that the time would come when there would be a demand for permanent grades and inspection in the act that has now come to pass, and I further predict that there will be no general satisfaction from the producer's standpoint until the handling of our crop is regulated by some such provisions as I have indicated.

I congratulate you upon the high standard the FARMER'S ADVOCATE has attained.

Arthur Municipality, Man. W. B. UNDERHILL.

Institute Meetings in the Territories.

Dr. Fletcher, the Dominion Botanist, who has done such splendid work throughout Manitoba in disseminating information upon noxious weeds and the best means of combating them, will this year devote considerable time to work in the Territories, and will, along with the Hon. G. H. V. Bulyea and Angus MacKay, Indian Head Experimental Farm, address a series of farmers' meetings on this most important question of noxious weeds. Everyone should attend and take specimens of weeds troublesome in their districts along with them. The place and dates are as follows:

| | |
|-----------------|------------|
| Moosomin | 19th June. |
| Whitewood | 20th June. |
| Grenfell | 21st June. |
| Wolseley | 22nd June. |
| Indian Head | 23rd June. |
| Qu'Appelle | 24th June. |
| Fort Qu'Appelle | 26th June. |
| Regina | 27th June. |
| Moose Jaw | 28th June. |
| Fairmeade | 29th June. |
| Glen Adelaide | 30th June. |
| Clare, Assa | 1st July. |
| Maryfield | 3rd July. |
| Oxbow | 4th July. |
| Carnduff | 5th July. |
| Gainsborough | 6th July. |

Calgary Fair.

An industrial fair is to be held at Calgary, extending over three or four days, beginning with September 3rd.

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.

LONDON, ENGLAND, OFFICE:
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Manitoba June Crop Report.

AN INCREASE OF 230,000 ACRES IN CROP.

The June crop report of the Manitoba Department of Agriculture contains some very interesting figures, showing a marked increase of crop area throughout the Province. This is attributed not so much to an increased acreage on the part of individual farmers as to the number of new settlers that have located in the Province during 1898, the number being estimated at 2,500. It is also pointed out that a considerable amount of the increased area is attributable to the extra railway facilities in many districts.

AREA UNDER CROP.

| | |
|--|------------------|
| Total area under wheat..... | 1,629,995 acres. |
| " " oats..... | 575,136 " |
| " " barley..... | 182,912 " |
| " " flax..... | 21,780 " |
| " " rye..... | 3,217 " |
| " " peas..... | 1,366 " |
| " " corn..... | 3,480 " |
| " " buckwheat..... | 32 " |
| " " brome..... | 1,930 " |
| " " potatoes..... | 19,151 " |
| " " roots..... | 10,079 " |
| Total area under all crops is 2,449,078 acres. | |

The following statement gives the comparative acreage for 1897, 1898, and 1899.

| Area under | 1897, acres. | 1898, acres. | 1899, acres. |
|--------------------|--------------|--------------|--------------|
| wheat..... | 1,290,882 | 1,488,232 | 1,629,995 |
| " oats..... | 468,141 | 514,824 | 575,136 |
| " barley..... | 153,266 | 158,058 | 182,912 |
| " flax..... | 20,653 | 14,561 | 21,780 |
| " potatoes..... | 13,576 | 19,791 | 19,151 |
| " roots..... | 6,130 | 8,448 | 10,079 |

Total crop, incl'd g rye, peas, corn, etc. 1,958,025 2,210,942 2,449,078

In live stock the report shows but a small increase in both beef cattle and milk cows. This may be accounted for by the fact that thousands of young cattle have been shipped to the States and also to the western ranges during the past year, some sections having been almost depleted of young stock. The figures given in the report are:

| District. | Beef cattle. | Milk cows. |
|--------------------|--------------|------------|
| North-western..... | 1,333 | 15,691 |
| South-western..... | 2,970 | 15,736 |
| North-central..... | 1,250 | 13,450 |
| South-central..... | 1,518 | 13,872 |
| Eastern..... | 2,160 | 22,400 |
| 1899—Province..... | 9,231 | 81,149 |
| 1898—Province..... | 7,901 | 71,773 |

The Dairy Superintendent states that there is good prospect for a million pounds of cheese and a million pounds of creamery butter.

Prof. Robertson at Brandon.

Prof. Robertson, Dominion Commissioner of Agriculture and Dairying, addressed a meeting of the Brandon Farmers' Institute on June 6th. The attendance was not very large, doubtless owing to bad roads. Prof. Robertson spoke on *Seed Selection*, much along the same lines as in his address before the Agricultural Committee of the House of Commons, a synopsis of which appeared in the FARMER'S ADVOCATE of May 20th. He first referred to the fact that the average yield and quality of the crops, not only of this Province, but of Canada, were showing a slight decrease, whereas in Britain the average yields are now 30 per cent. higher than they were 30 years ago, and in France they are 40 per cent. higher than they were 40 years ago. It is not now as easy to farm successfully as it used to be, owing to partially exhausted soil, increasing weeds, and greater injury from plant diseases and insect attacks. The causes of smaller yields could be summed up as owing to:

- (1) An insufficient supply of moisture, which to some extent is controllable. The amount of vegetable matter in the first five inches of soil will largely control the amount of moisture which the soil will retain. Vegetable matter can be supplied in the form of barnyard manure or by seeding down and supplying vegetable matter in the grass roots.
- (2) Unfavorable temperature of the soil, a condition largely under control. Rapid evaporation cools the land. Evaporation is more rapid from a rough than a smooth surface, hence rolling assists in checking evaporation and thus makes the soil warmer. For this reason the Professor would roll land a few days after seeding to give the seeds a better chance, following with a light harrow just when the crop is up in order to retain moisture and to kill weeds. For the most rapid germination of seeds and growth of the young plants too much attention can not be given to the preparation of the seed-bed, which should be firm and well packed,



THE LATE ROSA BONHEUR.

with a soil mulch of an inch or an inch and a half of fine, loose soil on the surface.

(3) Lack of suitable plant food for the young plant.

(4) Lack of inherited vigor in the quality of the seed. The quality of the seed depends on the life from which it came. Seed should be pure as to variety, as well as free from weeds and other seeds. Large, heavy seed germinates more quickly and gives bigger crops of better quality.

After enlarging upon these points, he referred to the two great processes of plant growth, that which conduces to the vegetative growth—roots, stems, and leaves—and that which produces seeds and fruit. This principle should be thoroughly understood and the plant supplied with the kind of food required at each stage of its growth. In speaking of the selection of seed he strongly urged the importance of selecting the best seed of the varieties that have proved themselves best suited to the locality, grown on the best land, from the largest-yielding and most perfect plants, and then, with fanning mill, select only the largest and most perfect seed. This system followed up would give better results than changing seed, as in changing seed there is nothing to be gained. Once find a variety suited to the locality, stay with it, and the longer it is grown on the same farm, under the proper conditions and always from carefully selected seed, the better would be the yield and quality. And Prof. Robertson contended that in five years under this system the yield of grain in Manitoba would be increased from 20 to 30 per cent.

Mr. Bedford, being called upon, corroborated what the Professor had said as to the benefits of selecting seed. On the Experimental Farm they had not changed their Red-Fyfe wheat, and the average yield was increasing rather than diminishing, and it stood at the top of the list of varieties. The seed of the Banner oats had been obtained ten years ago, and had not been changed, but had always

been grown under favorable conditions and the seed carefully selected. Their Banner oats were better in yield and quality now than ever, and were at the head of the list. The first five years' average was about 85 bushels, and the second five years' average was 90 bushels. Nearly all varieties that were poor yielders in the early years of the farm work were poor yielders still, and *vice versa*. He did not think any grain would run out with favorable conditions for growth and proper seed selection.

Dr. Thompson, V. S., Carberry, who has been several times a prizewinner with his Red Fyfe wheat at the Winnipeg Industrial, said that he had not changed his seed for fifteen years, and it was better to-day than at first. He always took the greatest care in selecting his seed and put special stress on the importance of allowing the grain intended for seed to become thoroughly ripened before cutting. He believed in the principle of rolling land, but on account of the liability of rolled land to drift he did not use the roller, but used the press wheels on his seeders and would not think of using a seeder without. Their use made the grain germinate more rapidly and ripen earlier.

Rosa Bonheur's Death.

The greatest of animal painters and one of the most noteworthy women of the century, Marie Rosalie Bonheur, commonly called Rosa Bonheur, recently died in France at the age of seventy-seven years. We take pleasure in presenting herewith a portrait of this remarkable woman. Her father, Raymond Bonheur, was an artist, and likewise three of her sisters, one of whom had charge of a free school of design for girls, which she founded. At the age of 19 she first publicly exhibited paintings, which were received with marked favor. The climax of her work was the well-known picture, "The Horse Fair," for which she received \$10,000. A. T. Stewart, of New York, bought it for double that sum, and subsequently Cornelius Vanderbilt purchased it for \$55,500 and presented it to the Metropolitan Museum of Art, New York, where it still hangs. Upon that picture she spent 18 months of labor, visiting horse markets for study twice every week. During these trips and when among other live stock she wore masculine attire. She was crowned with many honors, being decorated with the Legion of Honor in 1865 and made an officer of the Legion in 1894 in recognition of her exhibits at the Chicago World's Fair.

Plowing Matches.

Thanks to the energetic people of Blyth, plowing matches are becoming quite common, and I believe that good results will be apparent in a very short time. Hitherto the plowing done on most of our farms has been most discreditable, and although only a limited number of our young men may participate, yet the example and the existence of a plowing match will give a stimulus to better plowing, and this will result in (1st) increased profit on account of better cultivation; (2nd) in saving time, for the man who plows straight and evenly will plow most in a day; (3rd) a great improvement in the appearance of our fields; and (4th) in lightening the labor of the plowman, because to the man who tries to do his work well one half the drudgery is removed. He becomes an intelligent operator instead of a mere machine. Of course, the Manitoba plowing match does not afford the opportunity for the display of scientific accuracy which the Ontario or Old Country match did, but in its own way it is just as important, and by the use of the score-card its science becomes more apparent. Some, I know, object to the score-card, but I think it just the thing, although it certainly entails more careful work on the part of the judges. The following are some of the points in favor of the score-card: (1) Minute accuracy, (2) absolute fairness (these two points were signally illustrated at Brandon last year, where one of the competitors was just one-half point ahead of his unsuccessful rival), (3) as an educator. I would give a filled-out score-card to each competitor in order that he might see just wherein he failed.

I would repeat, however, that the score-card involves an immense amount of labor upon the judges. Their office is no sinecure. On the contrary, if they do their work well they are more than busy from the time the plows start till some time after the last furrow is turned. Otherwise the score-card is a useless appendage.

Below I give the score-card used at Brandon last year, and which, upon the whole, I consider very good, but upon which I would suggest some slight changes:

| | Straightness. | Feering. | In and Out. | Depth and Width of Furrow. | Evenness of Top of Land. | Finish. | Covering Weeds. | Width of Land. | Total. |
|-------------|---------------|----------|-------------|----------------------------|--------------------------|---------|-----------------|----------------|--------|
| Points..... | 15 | 10 | 10 | 10 | 10 | 10 | 30 | 5 | 100 |

A brief analysis of the card may not be out of place. It will be noticed that covering weeds has 30 points allowed to it, because the complete covering of weeds is essential to good plowing. A weed which projects above the furrow will mature seed just about as well as if it were never disturbed, and a weed left every ten or twenty feet will seed the land just about as thoroughly as if all were left. Again, the complete covering of weeds involves, to a certain extent, all the other points. However, I would cut this down to 25 points, and allow the operator to use whatever mechanical appliance he can find to assist him in covering.

The points I suggest taking from weed covering I would give to feering, making it 15 instead of 10. My reason is that the feering is the most difficult part. Seldom indeed do we see a feering worthy of the name. Usually it is distinctly marked by a strip of projecting weeds on a ridge five or six inches higher than the other land, and I am free to confess that this is difficult to avoid. Here is where the skill of the operator is most tested. The feering should resemble as much as possible the balance of the ridge.

Straightness is allowed 15 points. In passing most of our fields one would think that straightness was unimportant, but such is by no means the case. Leaving out the question of appearance, straightness involves evenness in width of furrow, which is a most important factor in weed covering. Moreover, evenness in furrow and straightness means speed. An operator who holds a uniform furrow of 14 inches will plow more in a day than one whose furrow varies from 12 to 16 inches.

Finish is allowed 10 points. Here I would allow 12 points, because this is another of the weak points in our ordinary plowing. Not in one case in a hundred do we find one uniform furrow turned at the last go. More commonly the last few rounds vary from six inches to six feet. What does this involve? It involves (1st) uncovered weeds, because wherever the furrow is disproportionately wide or narrow it cannot be turned properly; (2nd) much lost time and needless travel.

From depth and width I would take two points to be added to finish, and allow the operator to use a gauge wheel. To this I know some object, because without the gauge wheel the skill of the operator is more fully tested. This is true; but why should the gauge wheel be the only mechanical contrivance to be objected to. In every other operation every contrivance which tends to perfect work and lessen labor is welcomed. So in plowing I would encourage the operator to use his brains to relieve his muscle wherever the quality or quantity of the work does not suffer. In fact, I would be disposed to give a prize for the best original contrivance for the improvement of the work. Evenness on top of land is, of course, dependent upon evenness in depth and width of furrow.

Ins and outs is a point which in most fields is simply ignored. Nevertheless it is quite important in order to prevent the headland from becoming a weed-bed. Attention to this should also be encouraged in order to develop a habit of tidiness sadly lacking in most Manitobans.

Now, a few hints about arrangements. In order to attract an attendance, a picnic in connection is a good thing, with a programme of amusements for the ladies and younger people. Then a baseball or football match to take up the attention whilst the judges are making up the score-card. I also think it desirable that the competition at each local match be limited to the district, and let the prize-winners at each, and as many more as choose, meet at a Provincial match at some central point. Beginners would thus have a chance. I would limit the amount to be plowed, so that the work would be done by 4:30, or 5 at the latest, in order to give the judges a chance to do full justice to the score-card. Have a typewriter on hand and give each competitor a complete copy of the score-card. I hope that this season we may see some keen competition.

Hensall Farm, Manitoba.

JAS. ELDER.

A Wise Precaution.

In Denmark very stringent laws have been enacted to prevent tuberculosis in cattle and the spread of infectious diseases in man. All dairies are prohibited from giving out milk or buttermilk to be used for food of man or beast unless it has been subjected to a temperature of at least 185° F., and the residue in the separator bowl must be burned. This latter plan might well be followed by everyone using a cream separator as a common-sense safeguard.

A Good Pair of Twins.

At the Brandon Experimental Farm last year one of the grade cows produced a pair of twin calves from the service of a Shorthorn bull. They were raised by hand, and as a testimony to the skill of John Wickett they weighed at eleven months old 850 pounds each, and a butcher offered four cents a pound for them, or nearly \$65 for the two calves before they were a year old. Next?

Importation of Cottonwoods.

The privilege of importing cottonwood trees from Dakota, to be entered at the port of Brandon, was taken advantage of to some extent. A good many thousands of trees were brought in. There would have been many more but for the fact of the beds where these young trees are obtained being under water this spring, owing to the excessive moisture. Brandon was made the only port of entry, so that the importations could be examined by Mr. Bedford, Superintendent of the Government Experimental Farm.

Wawanesa Plowing Match.

The second annual plowing match will be held at Wawanesa on June 23rd. The land selected is on section 15-7-17.

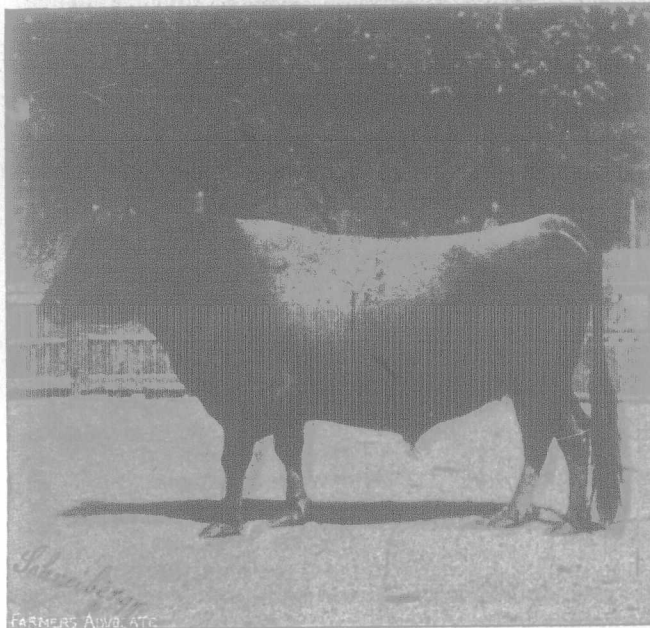
Bath and West of England Show.

The sheep section of the Bath and West of England Show at Exeter this year was one of very capital merit and quality in most breeds. The following will be found to be a brief summary of the principal events in connection with the several breeds, and we follow the order of the official catalogue.

Cotswolds were not a large exhibit, but the merit and quality of those which in the yearling ram and yearling ewe classes secured the first and second prizes in each class for Mr. W. Houlton were considerably in advance of similar winners in previous years, their type being good and their fleece and flesh excellent. Mr. F. Craddock's flock came in for R. N. in each of these classes, with very level and typical sheep. The ram lambs were a small class, Mr. R. Swanwick being winner of both the first and second awards with lambs of high merit and quality, whilst Mr. F. Craddock was again R. N.

The *Devon Long-wool* sheep, a breed having many great merits, somewhat similar to the Lincoln, made a grand display, and it is evident from the greater energy now shown by its breeders that this breed will in the near future hold a far more important position in the export trade than it does at the present time. Mr. T. White was very successful in the yearling rams, a very strong class, being first and third, with one of Mr. R. Cook's second, and Mr. C. G. Thorne's R. N., two of Mr. A. C. Skinner's breeding being H. C. The whole of these were very good sheep of their breed—good in fleece and flesh. The yearling ewes were another excellent class, and the three premier pens of Messrs. R. Cook, F. White, and C. G. Thorne were of very equal merit, the order of precedence being as given above, a second pen of Mr. R. Cook's being R. N., and in the pair of ram lambs this latter breeder was again to the front, securing both the prizes with first-class, evenly-matched lambs, Mr. A. C. Skinner being again R. N.

South Devons, an almost similar breed to the



PEDRO ROYAL MARJORAM.
JERSEY BULL SOLD FOR \$1,100 AT T. S. COOPER'S SALE, COOPERSBURG, PA., MAY 30TH.

previous, were present in large numbers and strong merit with good quality, Messrs. E. Stooke, J. S. Hullett, W. F. Sobey being the principal winners in yearling rams, whilst for yearling ewes, a strong even class, Messrs. E. Stooke and F. A. Short shared the honors between them, and Mr. F. S. Hallett led in the ram lamb class with two pairs of lambs of great quality.

Southdowns were a weak class, the winning ram of Earl Cadogan's being a weedy one, weak in scrag and not masculine enough, whilst the second ram from Lord Bathurst's was of a good masculine type and flesh, but not good enough in its fleece, Sir James Blyth being third with a moderate ram. The yearling ewes were better than the rams, the order of precedence being the same, the leading pen of Earl Cadogan's being very nice ones, but not in any degree exceptional. Mr. H. L. B. McCalmont, M. P., a new exhibitor, was first in the ram lamb class with a pair of capital lambs.

Hampshire Downs were a large entry of great merit, and the Chilmark flock of Mr. James Flower asserted its position of pre-eminence by securing, with typical, good-fleshed, even-fleeced and well-developed rams and ram lambs, first and third awards for yearling rams and first for ram lambs, a pen, we may remark, that were grand specimens of this most excellent breed. Lord Rothschild's flock secured second and fourth in the yearling ram class, which awards would have been far more suitably occupied by the grand sheep from Earl Carnarvon's flock, which were of very great merit and quality. Mr. J. Joyce, whose pen of ram lambs were second in their class, is a new exhibitor, and from this grand pen, which were worthy of their high place in their class, as well as from that typical, level, even and well-matched pen of yearling ewes, that went an easy first in a strong class, it is evident that the exhibits sent from this flock will be such that will make a stiff fight for premier honors. Messrs. R. W. Hudson, H. C. Stephens and W. T. Twidell were also successful.

Shropshires were present in good force, and were of nice merit and typical quality, but they were in several instances badly placed; in fact, the awards in some cases being entirely inexplicable. Mrs. M. Barrs was first in the yearling ram class with a splendid compact sheep, Mr. T. Fenn being next with a specimen we did not think in its right place, preferring those of Messrs. W. F. Inge and A. Tanner, which were placed third and fourth. Mr. G. L. Foster-Harter led the way in the ram lamb class with a pair of good lambs whose quality was useful and their legs well outside them. These were followed by a grand pair of most typical lambs, good in type and color, from Mr. P. L. Mills' flock, with a pair of Mr. D. Gibson's third, and Mr. R. P. Cooper's two useful pens R. N. and H. C. Yearling ewes ought to have been headed by Mrs. M. Barrs' most excellent pen, which were well matched and even in type and character, but these were placed second, the premier place being taken by Mr. T. Fenn's pen, which were not so good a match, either in conformation or in type, whilst third honors went to a very nice pen of Mr. P. L. Miller's breeding, and Mr. W. F. Inge's flock securing the R. N.

Oxford Downs were small in number, but of very excellent quality and merit, Mr. W. A. Treweeke securing premier honors in each class with very excellent specimens of the breed, Mr. J. T. Hobbs being second to him in the ram class with a wide, deep and excellent ram, of nice color and type.

Mr. W. R. Flower had no competitor in the *Dorset Horn* classes, and secured, with first-class pens, the three first prizes.

THE SWINE.

Pigs made a grand entry, particularly *Berkshires*, the old boar class being headed by Mr. E. Hayter's Highclere Topper, followed by Mr. J. Jefferson's Peel Swansea. A grand class of young boars shown in pairs found those from Mr. Fricker's herd taking the lead, with a pair of grand ones from Mr. E. Burbidge's herd in the second place. Mr. A. Hiscock's herd secured the premier place in the old sow class, as well as special prize for best Berkshire, with May Burton 3rd, a grand sow, with excellent top, good hams, and deep body, moving well on her feet, Mr. Fricker's Gillingham being very close up.

Large Whites were a capital lot, of good, even merit. Sir Gilbert Greenall was first and Mr. S. Spencer second in a good class of old boars, whilst in the younger boar class a grand pair of Mr. A. Hiscock's went first, with Mr. T. Mann's entry following. Sir Gilbert Greenall secured the premier place in the old sow class with a grand one, Mr. S. Spencer being close up second, whilst in the pairs these two exhibitors changed places, Mr. S. Spencer's being preferred to Sir Gilbert Greenall's exhibit.

Middle Whites were well shown, of even merit and excellent quality, Mr. S. Spencer's herd being well to the fore with nine very excellent specimens, Mr. A. Hiscock, Sir Gilbert Greenall, A. C. Twentymann and Hon. P. D. Bouverie being also amongst the prizewinners.

The *Small White* section, wherein was a stronger entry than we have seen for some time, was headed throughout by Hon. P. D. Bouverie's exhibits, thus once more giving a convincing proof of the pre-eminence of this unique herd of pigs, which is without doubt the best and most typical of the breed extant.

Tamworths were not very largely shown, but they made a capital display, many of the entries being of first-class merit and excellent quality, Messrs. D. W. Philip and R. Ibbotson sharing the leading awards between them, the former breeder being first in each class, a position to which the entries made by him were fully entitled.

CATTLE.

The cattle section was a small one, but its merit and quality were very good indeed.

Shorthorns, not an exceptionally large entry, were of nice merit and quality, Mr. R. Stratton securing the championship with Alto, by Excelsior, and Mr. J. Deane Willis the R. N. for the same with Royal Jeweler by Royal Secret. Messrs. G. Harrison, Leopold de Rothschild and J. Thorley were also successful.

Devon Cattle were present in good numbers, and the winners were of very first-class merit and good character. The principal breeders who secured the honors were Sir W. R. Williams, Bart., Lord Clinton, Hon. E. W. B. Portman, Sir W. H. Walrond, Bart., and J. C. Williams.

South Devons were also shown, but their numbers were not so large as one would have expected. Messrs. T. B. Blitho, J. W. Hallett, J. W. Meathrel, B. Trant and W. Bradbridge were amongst the more successful winners.

Herefords were of great merit and excellent quality, the Earl Coventry, A. E. Hughes and J. Tudge being the principal exhibitors whose names figured in the award list.

Sussex were a very small entry, Earl Derby's herd taking the premier place.

Jerseys were large in numbers and of very excellent merit and quality, Mrs. McIntosh and Lord Rothschild being the principal winners.

Kerries and *Dexter Kerries* made first-class entries of great merit. Messrs. Robertson & Sons and E. S. Woodiwiss were principal winners.

Director vs. Professor.

The Standing Committee on Agriculture of the Canadian House of Commons during each session of Parliament hear and discuss the testimony of leading officials connected with the Department of Agriculture regarding their work and plans. Among the first to appear before it this session was Prof. Jas. W. Robertson, Dairy and Agricultural Commissioner, a report of whose evidence was given in the FARMER'S ADVOCATE for May 20th. Referring to the growing of cereals on the Dominion Experimental Farms, he expressed his conviction that the comparison of varieties without continued selection of the best seed was of no service to farmers, but rather apt to mislead by expecting service from certain varieties as such instead of obtaining seed by continued selection on their own or similar farms. In an official statement of his testimony furnished us appears the following:

"There did not appear to be any inherent, continued superiority of productiveness in any one variety under the different conditions of soil and climate in Canada. In fact, the sowing of the same varieties at the five different Experimental Farms in one season brought about such a variation in the relative productiveness of them that there was no evidence of constant superiority in regard to productiveness. A change of soil and locality brings about a variation which may be towards greater or less productiveness. When a variety is sown in a locality new to it, it is simply a hazard whether it will succeed as well as those which have been sown there before, or whether it will succeed as well in the new locality as in the place where it has been grown before. Continued selections of seed on the farm on which it is grown will give on the average much better results than the introduction of new varieties."

The inference would naturally be drawn from the foregoing (as was pointed out by Mr. C. A. Zavitz, the distinguished Experimentalist at the Ontario Agricultural College farm, in our June 5th issue) that Prof. Robertson attaches but little importance to "variety" in farm crops. Now, as our readers are aware, testing varieties and originating new ones by cross fertilization is a most conspicuous line of work pursued at the Central and four branch Experimental Farms. Hence, when Dr. Saunders, the Director of these farms, appeared before the Committee, he joined issue with Prof. Robertson, combating his view, which he held implied that much of the work on the farms was of no value. He called attention to the general and long-continued productiveness of Red Fyfe wheat, which, in Manitoba and the Northwest, has held its own against all comers. Banner oats were also mentioned. The latter, if we remember aright, were first introduced a good many years ago in one section of Western Ontario by a little packet of grain from an American seedsman. This oat has demonstrated its general excellence in nearly all parts of Canada ever since. Dr. Saunders also called attention to other varieties which had sustained their productiveness wherever sown for many years. Throughout the Province of Ontario, during five or six years past, the Dawson Golden Chaff winter wheat has held a unique position, both with experimenters and general farmers.

Something resembling this is seen in the animal kingdom, where we find certain varieties or breeds—Shorthorn cattle, for example—combining such fixed excellencies and vigor that they have become cosmopolitan, perpetuating their merits in almost every clime and under all sorts of conditions. In our judgment very great advantages have come to the farmer, both in plants and animals, by the origination and improvement of different varieties, and in latter process selection plays an important part.

As reported in the daily papers, the Agricultural Committee ordered the printing of 25,000 copies of Prof. Robertson's evidence at public expense, and Dr. Saunders requested that a similar number of copies of his testimony be printed for distribution. To some this all may seem to have an incongruous aspect, but the thoughtful farmer will be able to draw correct conclusions. His safest course will be in choosing varieties that prove suited to his local conditions, and by thorough methods of tillage, rotation and manuring, and yearly making a careful selection or purchase for seed of well-matured, well-developed grain, improve the crop which he grows. With good cultivation and seed selection, it has been contended that grain might be grown on the same land for years without running out; and we are certainly inclined to think that the advantages sometimes ascribed to a mere "change of seed" (though not of variety) may arise from the fact that when the farmer buys seed grain he gets it from a seedsman or farmer who makes a specialty of selling only a superior and thoroughly cleaned sample. Others hold that there is a tendency to degeneracy in the improved varieties of farm crops through soil defects, climatic peculiarities, etc., the yield decreasing and the grain becoming inferior in quality or diseased. In such cases, and when a better-yielding variety than that habitually grown can be secured, a change of seed is advised. The subject provoked a lively discussion in the Committee, several M. P.'s differing from Prof. Robertson's view that productiveness was not inherent, but dependent on locality or conditions; but the published reports do not make it clear whether they were referring to a change of varieties or of seed alone, or both.

Elsewhere we give a report of Dr. Saunders' evidence, which speaks for itself.

Teaching Agricultural Science.

In presenting his annual report to the County Council of Middlesex, Ontario, Mr. J. Dearness, Public School Inspector, made the following remarks respecting agricultural education:

"In the near future another effort is to be made to give agricultural teaching in the rural schools more than a mere name. Those present, and the people of the county generally, will join with me in wishing the effort every success. The teachers will not lack in doing their best to carry out a useful and practicable scheme. The details of the proposed plan are not yet made public. If they should be reducible to a quantity of mere book work with an examination at the H. S. entrance, the highest advantages will not be gained.

"At present, not half the elementary science necessary to intending teachers of agriculture is taken up in their high school course, and the attempts made by teachers, in my experience, would indicate that they had not been trained in the model and normal schools to teach science to public school children by the inductive method. A child, taught the round of the life-history of a single insect, say that of the tent caterpillar, by his own activities, experiments and observations, outside as well as inside of the schoolroom (intelligently directed, of course, by the teacher), would be better educated, and would be, when he becomes a farmer, better prepared to deal intelligently with his insect friends and foes than if sitting at a school desk he had patiently memorized a whole volume about insects. The teacher's duty, in respect to agriculture, is to train the eyes and sharpen the wits of children to find the subject-matter of the lessons in the barns, gardens, fields, woods and roadsides, and to utilize the systematized observations of the children for comparison and judgment in the recitation hour.

"The teacher must bring to the successful performance of this work considerable knowledge of plants, animals including insects, soils, weather phenomena, chemistry and physics, to be able to seize upon and turn to practical use the opportunities that different localities, different seasons and different subject-matters offer. The teacher must know the lessons that he undertakes to teach, and their relations, and he must acquire the art of leading the children to discover the answers that he or they ask by the use of their own eyes and other senses. It is the training in discovering truth that prepares the boy grown to man's estate to interpret and take advantage of his own experience and that of his neighbors.

"Mere book-study sometimes makes children dislike a subject. When I ask children in different schools, as I have often done, first, 'How many of you love the study of history?' and second, 'How many of you dislike it?' ten pupils answer in the affirmative to the first question for one who does so to the second. It is better not to have agriculture taught at all than to have it taught as so much history. The subject, if taught by the experimental or inductive method, can be made one of absorbing interest. I have invariably found, when giving a nature lesson by this method, that the class in hand becomes deeply interested, while the larger pupils at seats drop their regular lessons and fix their attention on the work which the reciting class has in hand.

"These remarks on the book-study of agriculture do not apply to large boys who come in for the winter months after a summer's work on the farms. Their vivid experiences prepare them for the useful reception of lectures or readings, which they will shortly have the opportunities to apply. Such pupils have a most valuable aid in the present text-book."

For Sheep Extension.

The fact that fifteen-twentieths of the population of Canada is agricultural has an important bearing on the position of animal husbandry. Large demand for meats and discriminating demand both depend on the existence of large industrial classes and on the existence of a moneyed and luxurious class. As we have not either of these to any extent in Canada, the local market for meats is not a very good one; at least, it is only good when foreign demand has exhausted or partially exhausted the supply. A check in foreign demand in any winter leaves the farmers with beef to be sold at less than the price of food consumed by the animal. Our pork market is practically foreign exclusively. Butchers' prices for lambs and sheep run at about from three to five cents a pound, dressed weight, except in the case of a very limited number of early spring lambs. It seems like a sacrifice to sell lambs that will dress from sixty to seventy-five pounds at two and a half or three dollars, as many are every fall, and it is not strange that the sheep industry is tentative, small, and wholly a corner industry on Canadian farms, compared to what it might be in the light of natural advantages and fitness for mutton production. Though local markets are not encouraging, the fact remains that the amelioration of the conditions depends on still greater production. The success of

individuals depends on the fullness with which they appreciate and lend themselves to the prime movement of their time. The characteristic stage of development of our country is at present agricultural, and it is through the products of that art that we are to be enabled to take the position among competitors in the world's supply markets for which our capacities and resources fit us.

That our sheep business has not attained any large proportions is shown from the general management. Most of our stock is sold as lambs in the fall, only half matured, half fat, and with the least expenditure of labor possible in their production; and, as has been noticed before, the price is very low at this time. It would probably be impossible to pick up without great difficulty in any part of Ontario a carload of export yearling wethers.

There is no branch of sheep husbandry to which we are not well adapted, whether it be the rearing of hothouse lamb, fall lambs, ten or twelve months' old mutton or breeding stock of the highest type. The capacity to do this depends on general conditions that Canada possesses in a high degree. The condition of fertility goes without question. Even though parts of the country are below average fertility, the voracious and industrious qualities of the sheep counteract any lessening of profit on this account. There is one feature in favor of all temperate countries that makes the feeding of animals a wholly satisfactory business, and this is climate. Excessive cold or excessive heat is not conducive to the highest physical development. The cold of the Arctic checks growth; the heat of the Tropics is opposed to the laying on of flesh. The warmth and scantiness of torrid climes is not ungenial to the fine-coated Merino—rather, the fine wool is the product of such conditions—but the Merino is not a good mutton sheep. A grosser appetite and a lustier growth belong to cooler as well as more productive areas. Canada cannot compare with England in regard to these advantages, as the climate is moderately cool in the latter country all the year round. Our animals, however, certainly have the capacity for growth begotten of an eager appetite. The value of this cannot be overestimated. It is a very crude idea of excellence in a meat animal that it exists on next to nothing, as anxious sellers sometimes represent them. Out of nothing comes nothing. If you want to get flesh on an animal you must furnish the organism with materials with which to build that flesh up.

Our conditions of soil, climate and animal constitution being assured, there is everything to be hoped from a large extension of sheep husbandry. Instead of supplying only fall grass lambs, we should have larger enterprises in the lamb-feeding business through the winter. It has been demonstrated that a pound of mutton can be produced more cheaply than a pound of beef, and with much less labor; and there is no doubt but that if good lambs at a year or ten months old, weighing from 120 to 140 pounds, could be got in car lots for export, the price would be raised. They should be worth five or six dollars a hundred. The lamb-feeding business in the United States has reached large proportions, and generally yields good profits. We should be getting a piece of that trade at Buffalo and other points. Our food is perhaps not as cheap as their corn, but our mutton stock is far superior, and we should get the margin that always goes to the best article. The duty does not stop our lambs: it should not stop our yearlings.

What has been said of our mutton stock applies with equal force to our breeding stock. It will be some time before Canada mutton rams lose favor on the other side of the line. Our stock is lusty, and of good size and constitution. It is free from external and internal parasites, and generally of good breed type, from the growing powers of discrimination and selection of Canadian shepherds. Let us have more sheep. J. McCARG.
Peterboro Co., Ont.

Summer Fairs.

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|--------------------------|-------------------|
| Portage la Prairie..... | July 5th and 6th. |
| Emerson..... | " 6th " 7th. |
| Winnipeg Industrial..... | " 10th to 15th. |
| Brandon..... | " 18th " 21st. |
| Virden..... | " 25th " 26th. |
| Regina..... | " 25th " 26th. |
| Minnedosa..... | Aug. 2nd. |
| Carberry..... | " 3rd and 4th. |
| Neepawa..... | " 8th " 10th. |

A Farmers' Elevator at Darlingford.

The Darlingford Elevator Co., composed of F. Bolton, J. J. and R. A. Scott, A. Lawson (of Darlingford), and G. W. Ulyot (of Manitoba), have just completed the erection of an elevator with 25,000 bushels capacity, 14 bins. All modern improvements, including a gasoline engine, are being put in. With an elevator to handle the grain tributary to Darlingford the village is sure to grow rapidly.

Virden Plowing Match.

A plowing match will be held on June 27th on the farm of Major Hosmer, Sec. 4-10-26. Liberal prizes are offered for competition in classes for boys under 18 years, men with 14-inch plows, men with 16-inch plows, and also for gang and sulky plows. A big farmers' picnic will be held in connection with the match.

Our Scottish Letter.

On this first day of June no man could refrain from glorying in the splendor of the sunshine which distinguishes this day. May, for the most part, was in every respect unlike what poets have led us to believe she ought to be; but during the past few days the sun has shone forth with startling effulgence, and a brighter and pleasanter outlook one could not wish to see. During the past few days one could almost see things growing, and Nature is at the moment looking her very best. Farmers, alike Lowland and Highland, had good cause to complain of the backward condition of the crops almost until the past week; the weather was bitterly cold, and the progress of vegetation was slow. Turnip-sowing was not to be thought of, and croakers were beginning to conclude that Providence had forgotten the promise, and seed-time and harvest were not to be in 1899. All these forebodings have been belied. The season of 1899 will doubtless be like those which have gone before it, and somehow when things are balanced up one season is found to be very much like another.

Turnip-sowing is now in active progress, and farmers have plenty to do. The utility of this great root crop has often been called in question, and conflicting theories are entertained as to why it should be so popular. Some maintain that in itself the crop is of no account; its value lies in the benefit which accrues to the soil from its growth. Others have it that without "neeps" British agriculture would be *non est*, and possibly neither view is quite correct. Turnips are not now as indispensable a food as they once were. Many substitutes are in the market, and some of them are possibly improvements on the turnip. But when all is said there are certain virtues in the turnip which cannot elsewhere be found, and no wise man would dream of dropping the crop as an important factor in the rotation. The chemist will give an analysis showing that turnips have little feeding value, but the man who tries to do without them and has succeeded is not yet above the horizon. At the same time there are farmers who, from their own practical experience, have come to doubt the utility of yellow turnips, and have gone in wholly for the growth of swedes. One of the best farmers in the west of Scotland was telling me, no further gone than yesterday, that he has sown no yellow turnips this year, but filled up the whole acreage with swedes. He did this because he found, from experience, that two swedes were worth three yellow turnips for feeding purposes, and they occupy less space in the fields. He is convinced that he will have richer milk and cream, and less labor from growing swedes only.

SOME SALES OF HACKNEYS.

Hackneys are the most popular breed of horses in this country, and recently several notable sales have been held. The most extraordinary was that at H. R. H. the Prince of Wales stud farm at Wolferton, near Sandringham. The Prince had a very distinguished company around his table, and fabulous prices were realized. A gelding sold for 925 gs., and a pair for 1,050 gs. No doubt the owner of the 925 gs. animal feels big, but we would like to buy several geldings for that money, and he will feel a bit disappointed should somebody in the "row" attract more attention than he does. On the whole, while one likes to see good prices, there is just a possibility that 925 gs. is beyond reason for a gelding. In Scotland we have to be content with much lower figures. Both Mr. Morton and Mr. Scott—the one in Ayrshire and the other in Lanarkshire—have recently had sales, and in each case an average of over £60 was obtained. Mr. Morton had 66 horses and ponies—a very big lot to throw upon the market in one day—and he got an average for them of £61 6s. 11d. apiece. Mr. Scott had hardly one-half the number, but his average was £61 3s. In both cases the horses were big, well-colored and very handsome. Better harness horses have not been offered in Scotland for many a day, and no doubt greater popularity is yet in store for the Hackney in Scotland. At Mr. Morton's, and indeed at both sales, buyers were present from all parts of the country, and bidding was steady if not sensational, and with perseverance and wise selection of the best kind of animals an increasing demand for home-bred carriage horses may be looked for.

Butchers are, it appears, feeling the pressure of the times. In Glasgow they are finding it difficult to make ends meet, so they have advanced the price of beef, mutton and pork by 1d. per pound. It is really very sad, because it has hitherto been understood that some of them were making money so fast that they did not know how to dispose of their wealth. Joking apart, it is of course impossible to believe that butchers are hard up, but we understand that they cannot now get the same amount for the offal as in other days, and the trade is becoming specialized, so that an animal does not cut up so profitably as of yore. With it all we have an idea that the butcher could very well have afforded to go on at the price he was getting for his meat, and that this latest movement is just another evidence that he will have big profits, come what may. There is no proper effective trade rivalry amongst butchers, a fact which does not operate in favor of the public. They are better organized than any other trade in the country, and can make and keep compacts as no others can. How long this may continue we cannot say. The monopoly is not good for the community, but the number of men who care to become butchers is obviously

limited. So long as this continues the butcher will make his own price and his own terms with the public.

THE SINGLE-JUDGE SYSTEM FOR SMITHFIELD.

The Smithfield Club had long the reputation of being the most conservative of all our agricultural institutions. Its *vis inertia* was great, and any attempt to interfere with the *status quo* was defeated. Within the past few years, however, it began to move. First one and then another hoary superstition faded before the clear light of modern commerce, and attention was anew directed to the primary objects of the Club. It was instituted to promote early maturity in live stock, and towards this goal it has now for three or four years been bending with accelerated footsteps. Recently the Council has outrun its own reformers, and a movement has been made at which, considering its origin, one is disposed to be almost horrified. It has been agreed to have a single judge in all classes, and even for the championships. I believe in single judges for breed classes, but the Club will be clever if it can find a man qualified to hold the balance fairly between the champions of rival breeds. A butcher is the best man for the job, and it may be possible to find one who is perfectly unbiased as between the claims of rival breeds, but we do not envy the Club its task in searching for the fitting man. Whoso lives until next December will see what he will see in this big fight.

"SCOTLAND YET."

Beauty and Utility Combined.

Mr. Valancey E. Fuller, writing for the Jersey Bulletin on the moral of the sale of Mr. T. S. Cooper's great herd of Jerseys, summarizes in the following pithy paragraphs, which may well be applied to all dairy breeds:—

What are the lessons the sale teaches us? Permit me to give some of the thoughts that were in my mind as I stood at the auction ring:

First. Breed to the very best bulls procurable from dams of unquestionable ability at the pail and churn and as near as possible to individual perfection—especially in udder, teats and milk veins. It is essential that the qualities possessed by the progenitors be inherited so that they can be transmitted.

Second. Breed the daughter of such a sire to one equally as good in every way.

Third. Develop your cows so that each generation produces all that she is capable of doing, without undue forcing.

Fourth. Having "a good thing," use printer's ink freely to let your brother breeders know what you have.

One thing was especially noticeable, and that is that breeders insist on having superior individual excellence as well as tests and pedigrees. The high-priced animals were those of the best individuality. Small teats, sloping rumps, cut-up udders, beefy type, were all at a discount. Clean heads, straight backs, good and well-placed teats, large, full and well-rounded udders, were at a premium. In other words, buyers insisted on utility and beauty combined before they opened their purse-strings to the fullest extent. The motto was "No bag, no cow." The moral is: If you want to procure top prices, breed not only from the best and most prepotent source, but breed "beauty and utility combined."

Harmfulness of Preservatives.

The use of preservatives for milk and its products is universally condemned, as it ought to be, by all who have given dairy problems and dairy methods any attention. The scientists, too, coincide in the view that nothing that will preserve milk from fermentation can fail to be injurious to digestion, and physicians will tell us that wherever preservatives are used in milk, there deaths from bowel trouble among children will be numerous, to say nothing of the injury done to the digestion of adults. At a recent trial in Pittsburg, Pa., of dealers in meats charged with using preservatives, Prof. Ashmon, a skilful chemist, testified as an expert that all preservatives were dangerous, and even at their best were destructive to digestion. One of the strongest reasons for frowning upon the sale of "renovated butter" is the fact that preservatives are almost invariably employed in its manufacture. It should be borne in mind always that any drug having the power to arrest fermentation in milk is able, to just the same extent, to arrest the digestive process which goes on, or ought to go on, in the stomach. There ought to be a strong sentiment on the subject which would indict at the bar of public opinion any seller of milk who uses preservatives. It ought to be clearly understood that men who, for gain, will, day by day, slowly poison and undermine the health of the public, taking the risk also of probably destroying the lives of many young children, are not worthy of the name of men. Reputable people ought to recoil from it as they would from any other suggestion looking to the slow poisoning of their fellow men for the sake of pelf.—*Ranch and Range.*

Territorial Weed Inspector.

The Territorial Department of Agriculture are organizing for a vigorous campaign against noxious weeds. Mr. T. N. Willing, a practical botanist, has been appointed chief inspector for the Territories, and under him will be a full staff of local inspectors to look after the work in each district.

Dr. Saunders, Director of Dominion Experimental Farms, on Selection of Seed and Other Farm Subjects Before the Committee on Agriculture.

To the Editor FARMER'S ADVOCATE:

SIR,—As requested, I submit a statement of the position I took in evidence given before the Special Committee on Agriculture and Colonization of the House of Commons, on May 30th, regarding statements recently made by the Commissioner of Agriculture and Dairying before that Committee. Much the larger part of the time allotted me was given to an explanation of the work the Experimental Farms have been doing for the past eleven years in experimental tests and in demonstrations along five important lines which I have long regarded as the underlying principles in successful farming. These are as follows:

(1) The maintenance of the fertility of the soil by the proper care and use of barnyard manure, the plowing under of green crops, and the economizing of the elements of fertility by a judicious rotation of crops.

(2) Best methods of preparing the land for crop.

(3) The importance of early sowing.

(4) The best varieties of grain, fodder plants, and roots to sow in the several climates of the Dominion, taking into consideration productiveness, quality, and earliness of ripening.

(5) The selection of plump and well-ripened seed for sowing.

To show that we had been demonstrating the truths taught, I cited the experience had at the Central Experimental Farm in increase of crops by bringing into play all these important principles. It was shown that by comparing the average of crops obtained for the first three years after the Farm was firmly established, viz., 1889, 1890, and 1891, with the average of the last three years, 1896, 1897, and 1898, that there had been an average increase in the oat crop of 23 bush. 13 lbs. per acre; in barley, an average increase of 12 bush. 7 lbs.; and in spring wheat, an average increase of 4 bush. 50 lbs. per acre.

Selection of Seed.—With regard to the question of the selection of seed I said: "The selection of seed grain for sowing is most important and cannot be too strongly recommended. This, however, cannot be said to be a new principle or a new application of a great principle. It has been the practice at the Experimental Farms ever since their establishment to select the seed used for sowing from year to year, by cleaning the grain thoroughly with the fanning mill, and by the use of suitable sieves, separating the plump and well-matured grain and using this for seed. Much the same practice has been followed by many good farmers in different parts of the Dominion."

As a sample of the teaching of the Experimental Farms on this point, I quoted the following from the Annual Report of the Experimental Farms for 1891, page 5:

"One of the most important means of improvement within the farmer's reach is the selection of good seed. Every seed has an individuality of its own impressed on it by nature, which, under favorable conditions, will manifest itself. Each seed is provided with a germ in which lies this impress of individuality, and this germ is embedded in a store of such food as is best suited to stimulate the growth of the young plant. When the seed is plump that food supply is bountiful, and the infant plant so nourished makes rapid headway; but where the seed is imperfectly developed the store of nourishment is much lessened. Crops are thus often enfeebled at the start and delayed in ripening by the use of poor seed, or they ripen unevenly and lack that vigor so necessary to a liberal return. It is well known that some farmers, by the selection of good plump and thorough preparation of the soil, grow oats from four to eight pounds heavier per bushel than many of their neighbors."

"Good varieties of grain sometimes deteriorate by long and careless cultivation to such an extent as to make them unprofitable. Judicious selection and change of seed would do much to conserve this fertility and add greatly to the length of life of such varieties. New sorts are obtained either by careful selection and cultivation, by the preservation of occasional sports which occur in nature, or by artificial crossing. The watchful farmer may do much to improve his own grain and furnish good seed to his less thoughtful neighbor by the first method and continually secure new varieties by the second, but the third method (artificial crossing) requires much more skill and care, and is usually practiced only by the expert in such matters. On the Experimental Farms all these methods are in operation."

Selecting the largest heads from the most productive plants.—With reference to the recommendation to select the largest and best heads from year to year "from the individual plants which give evidence of power by succeeding and yielding largely under soil and climatic conditions where the crop is to be grown the following year," I may say that this plan was begun at the Experimental Farms in 1888, when good average seed was sown, putting the individual kernels a foot apart each way to secure strong growth. Selections were made from the most productive of these plants. It was found that the largest kernels selected from the finest heads were much heavier than the seed from which they had been grown. The results of this work were communicated to the Royal Society of Canada in a paper which was published in the Transactions for 1889. In 1889, the carefully selected seed grown in 1888 was sown, choosing only

the plumpest kernels. That year rust attacked the crops so badly that the seed obtained from these very plump kernels was so much inferior in size and weight to the average grain used at the start that it was considered unfit for sowing. This work was begun again on the same line three years ago, but failed to give the good results anticipated. It is being again tried this year. While I have always been a strong advocate of the use of plump and well-ripened seed, especially when selected from strong plants, and believe that, as a rule, such seed will give larger crops than samples of lighter weight, provided the season is favorable, the result, however, does not always turn out thus.

In the experiments reported by Mr. Zavitz, in the report of the Ontario Agricultural College for 1898, on the "Selection of seed oats for six years in succession," we find the crops recorded as follows: Beginning with 45.7 bushels in 1893, an increase was had to 67.3 in 1894. The results of 1895 are not recorded, but in 1896 the crop fell to 43.4—less than it was at the beginning. In 1897 it rose to 53.4, but was still 14 bushels less per acre than it was three years before, showing that no regular or uniform increase can be depended on. In 1898, however, the difference in favor of the plump seed was more than six bushels per acre.

In another series of experiments with large, plump oats, as compared with medium-sized oats, the medium-sized oats, in 1896, gave heavier kernels than the large, plump, selected seed. In 1895 the difference was only 1½ per cent. in favor of the plump seed; in 1897 it was only 1½ per cent., and in 1898, 4 per cent. In these experiments, Mr. Zavitz gives the number of kernels in an ounce of each crop, but does not give the bushels per acre. These results show that an addition of from 20 to 30 per cent., as claimed by the Commissioner as a possible and permanent increase in crop by persistent selection of grain, is exceedingly doubtful.

While commending what I believe to be good in the statement of the Commissioner, I endeavored to point out what I thought was erroneous and contrary to experience.

Effect of barnyard manure on a grain crop.—Under the paragraph on page 269 of the FARMER'S ADVOCATE, headed, "Two Great Principles Explained," he said: "The conditions which make for the increase in the size of the root, stems and leaves do not make for an increase in the grains, fruits and seeds." I showed that this idea was not a new one; a similar idea was advanced by Prof. J. C. Arthur, of Purdue, Indiana, a well-known botanist, in a paper read by him, in 1893, before the Society for the Promotion of Agricultural Science, at a meeting held in Madison, Wisconsin. I was present at that meeting and took part in the discussion of this paper. In the application of this principle, however, to the growth of crops, Prof. Arthur took different grounds from that now taken by the Commissioner. Prof. Arthur pointed out that the crops of grain were increased by the use of barnyard manure, but held that the increase in straw was relatively greater when manure was used. Prof. Arthur said: "Extensive farming will give a better return in all crops grown for fodder, or for the roots or other portions of the vegetative part of the plants, than in those grown for grain and fruit." In illustrating the working of this principle, the Commissioner instanced the growth of a bunch of oats on a dunghill. "The root-stems and leaves are unusually large, while the heads contained very few seeds, and these of light weight." Following up this illustration, he says: "Manure should not be applied directly to land for the growth of cereals." The only inference to be drawn from this is that the crop would be injured thereby. Whether such a bunch of oats as is referred to ever grew on a dunghill and produced the poor crop stated or not I am unable to say, but the inference drawn from the illustration is contrary to experience. During the past ten years we have grown at the Central Experimental Farm, on two plots of land, ten successive crops of oats, and to each of the plots barnyard manure has been applied every year at the rate of 15 tons per acre. On the one plot it has been used rotted, on the other fresh from the barnyard. Manure has thus been used on these plots during the ten years to the extent of 150 tons per acre. What has been the result? These two plots have given much larger crops of grain, as well as a heavier weight of straw, than any of the other plots. In this series of fertilizer tests the plot treated with fresh manure has given an average yield of 54 bushels 17 pounds of oats per acre for this ten years; that with the rotted manure, an average of 48 bushels 14 pounds per acre. Similar results have been had from plots of barley and wheat treated in the same manner.

The use of barnyard manure with a root crop or a corn crop is to be commended for other reasons, and is a very common practice with farmers everywhere; but to teach that barnyard manure is injurious to a grain crop is erroneous doctrine.

Inherent productiveness in varieties.—We now come to the question of productiveness of varieties, wherein the Commissioner states that, in his opinion, the work done on the Dominion Experimental Farms, in the comparison of varieties, is of no value without selection, and "is apt to mislead farmers into expecting service from named varieties as such, instead of obtaining the seeds by continued selection from year to year on their own or similar farms." But the work of comparison of

varieties at the experimental farms has not been done *without selection*, but with careful selection of seed each year, not from selected heads, but by one of the methods the Commissioner recommends, by taking care "to select the large seeds by the vigorous use of the fanning mill and sieves." Are those comparisons *with selection* also of no value? The Commissioner said, "The question of productiveness does not lie in variety." In another part of his evidence he says: "Some of the most distinguishing characteristics of varieties are shape and size, color, habit of growth, hardness, length of growing period, and *productiveness*." If productiveness is one of the chief characteristics of varieties, how can it be said that the question of productiveness does not lie in variety? In another place, he says: "If there is in variety, as such, superiority in productiveness, that would be the same everywhere." He also said that variation in the productiveness of all varieties appeared to be brought about by growing them under different conditions of soil and climate. I fear that any attempt to reconcile these conflicting statements would be hopeless. Following the expression of the Commissioner's opinion as to the valueless character of this part of the Experimental Farm work, he instanced a case in the growing of peas, where "by successive selections of large peas for three years, the individual peas at the end of that time were twice as heavy as the peas of a crop grown from small seeds of the same variety, under the same conditions for an equal length of time." The object in citing this experiment seems to be to convey the impression that in this case increased productiveness was brought about by repeated selection. This was one of the experiments conducted at the Central Experimental Farm with a new cross-bred variety which sported very much and produced peas varying considerably in size. By selecting two types—one large and one small—and sowing the types separately, the large peas were increased in size as stated; but there is no evidence that there was any increase in bushels per acre. The plots were so small that no attempt was made to determine this. We have often found the smaller-sized peas produce more bushels per acre than the larger ones, and to use such an illustration for such a purpose is misleading. The only evidence offered in support of the statement that "productiveness does not lie in variety" is the fact that out of 195 varieties of oats, barley, spring wheat, and peas, compared at the various experimental farms in 1898, 138 appeared in the selected list of 12 or 6 of the largest yielders at the five experimental farms. Thus, the selected lists include a fraction over 70 per cent. of the whole. It is difficult to detect any proof in support of the Commissioner's statement in this. In these tests all the varieties have been grown in five of the most distinct and widely different climates of the Dominion, and climatic conditions alone would cause wide variation. Further, it is not mentioned that 79 of these 195 varieties tested (more than 40 per cent.) were new cross-bred sorts recently introduced, and hence liable to sport and vary to an unusual degree. Under the circumstances, I think this is a very good showing. If even with five years of careful testing we can show that 30 per cent. of the varieties tried are not profitable for cultivation in any of the climates of the Dominion, this will be a piece of work which will be of great value to farmers and of which anyone might feel proud.

If productiveness does not lie in variety, what explanation can be given of the fact that during the four years' test of these varieties, all grown under the same conditions as to soil and climate, that the Banner, Bavarian and Columbus oats are found twelve times in the list of the best sorts, and sixteen of the other varieties from five to ten times, while a number of other sorts appear in these lists but once or twice? What is it that entitles varieties to a place in this list?—the production of a large number of bushels per acre. In Bulletin 32, in a summary of the results of the test of varieties for 1898, I said:

"The particulars presented in this Bulletin show the importance of choosing the most productive and vigorous growing varieties for seed. They also afford further proof that the tendency to great productiveness in certain sorts is to a large extent fixed and permanent. As an example, the twelve varieties of oats which are listed in this Bulletin as having given the largest average crops at all the experimental farms for the last four years include ten of those given last year as the best for three years. Further, in comparing these two lists of the best twelve sorts of oats for each experimental farm, we find this year, at Ottawa, ten of the former twelve; at Nappan, N. S., ten of the twelve; at Brandon, Man., eleven of the twelve; at Indian Head, N.-W. T., ten of the twelve; and at Agassiz, B. C., nine of the twelve."

The seed of these varieties was sent to the several farms from a common stock; the productive sorts carried their inherent power of productiveness with them, and have manifested this power in all the different climates of the Dominion. Are we to deny the power of productiveness in such varieties as the Banner oat, the Mensury barley, and the Preston and Red Fyfe wheats, notwithstanding that they give so large a number of bushels per acre. These and other highly-valued sorts have shown remarkable strains of productiveness from the start, and it was mainly this power to produce a large number of bushels per acre, wherever tried, which has given them the reputation they now possess.

Change of Seed, etc.—The Commissioner also stated that "change of seed was most absurd and unnecessary," but no proof was advanced in support of this. On the other hand, we have the accumu-

lated testimony of practical farmers for many years as to the benefits of this practice.

Another of the Commissioner's statements was: "That the rules which apply to the crossing of flowers do not apply to farm crops." This is contrary to the opinion of all botanists. He also said that "the only result of crossing is an intensifying of the tendency to change." This was also shown to be erroneous.

SUMMARY.

When expressed in plain language, the statements made by the Commissioner may be divided into two groups: 1st. Those which are well known and almost universally approved and which most good farmers have long believed in and practiced. 2nd. Some more or less new ideas, broadly stated, with little or no proof, some of which bear evidence of a very superficial examination of the subject.

Class 1.

- (1) The well-known advantages which arise from the selection of seed, which every farmer should practice, and where seed can be selected from vigorous growing plants the best results may be expected.
- (2) The desirability of using barnyard manure with a root or corn crop.
- (3) That varieties of grain have very useful qualities, and that one of their distinguishing characteristics is productiveness.
- (4) That all varieties are liable to vary and have more or less power of adapting themselves to changed conditions of climate and soil.

Class 2.

The following statements of the Commissioner may be placed in Class 2:

- (1) That there is no productiveness in variety as such. This is contradicted by another statement of the Commissioner's, and has been shown to be contrary to experience.
- (2) It is taught that it is injurious to apply manure to cereal crops. This also is contrary to experience.
- (3) That variation in varieties appeared to be brought about by growing them under different conditions of soil and climate. This is not proven. On the contrary, our best and most productive varieties have manifested inherent productiveness from the beginning and have carried this power with them and manifested it in many different soils and climates.
- (4) That comparison as to productiveness without selection is of no value. The only illustration used in support of this statement is a series of experiments where selection has been regularly practiced.
- (5) That change of seed is most absurd and unnecessary. A statement advanced without proof and contrary to general experience.
- (6) That "the rules which apply to the crossing of flowers do not apply to farm crops." This is erroneous.
- (7) That the only result of crossing is an intensifying of the tendency to change. This is contrary to experience.
- (8) That rolling of land warms the soil. This statement, which is taken from a book on "The Soil," by Prof. F. H. King (pages 230-232), is only partly true, and hence may be misleading.

Farm Crops in Canada not "Lamentably Poor."—I also took issue with the Commissioner when he said that the crops of farm products in Canada are "lamentably poor." Such statistics as are available show a material increase in the crops raised by farmers in Canada during the past five years, and also that they compare favorably with the crops of other countries in similar climates. Were the farm crops of Canada "lamentably poor" the rapid increase which has taken place in the volume of our exports of farm products could not have occurred.

Large Possible Gains.—A word must also be said with regard to the very large sum of money which is held out as a possible gain to Canadian farmers by the general adoption of the plans recommended—from \$50,000,000 to \$80,000,000. While such a handsome addition to the returns realized by Canadian farmers would be greatly appreciated, I fear that the calculations rest on a rather faulty basis. The Commissioner mentions a possible increase of from 20 to 30 per cent. in all farm crops by following his teaching. The \$230,000,000 on which his calculation is based includes the hay crop, the largest of all crops in Canada, and all the root crops and corn. With the exception of a limited area in Western Ontario, the farmer has not the opportunity of selecting his own seed on his own farm with these crops, since he does not produce his own seed. The Commissioner's statement is not very clear as to the basis on which his hopes of an increase of from 20 to 30 per cent. rests, but the impression was that they were built on the results of experiments in the selection of seed grain at Guelph.

The experimental work done there by Mr. Zavitz has been good, and he has shown himself a careful worker, but these particular tests have not been planned in such a way as to admit of their being fairly used in such a calculation. The largest and plumpest kernels of grain were selected for one experiment, and the smallest plump kernels for another, and, in sowing, the number of kernels in each case was the same. Hence the plump grain would have nearly double the weight of the small grain. No farmer selects the very smallest seed he can find for sowing, and if he sows unselected seed he would, in most cases, have in this from one-half

to two-thirds of good plump seed, and in sowing he would use in every instance the usual weight of seed. A fair consideration of these conditions would take away a large part of the foundation on which these dazzling figures rest.

I have endeavored to present this subject in a fair and straightforward manner, submitting the reasons for the opinions I have advanced, and must now leave the intelligent public to form their own conclusions.

WM. SAUNDERS,
Director Dominion Experimental Farms.
Ottawa, June 8th. 1890.

Veterinary Inspection of Stallions.

Dr. J. I. Gibson, State Veterinarian of Iowa, has an able article in a recent issue of *The Horseman* upon the need of greater care on the part of horse breeders in the matter of selecting and mating horses. After pointing out the achievements of American breeders of Standard trotters and pacers in leading the world in these classes of stock, which is claimed could be accomplished only with persistence of purpose towards a definite kind of horse, he goes on to show that farmers generally in the United States have too often bred to raise a colt, regardless of the proper mating of sire and dam of a distinct class or breed suitable for the home or foreign market. He says: "You can as surely breed the kind of horse desired by laying the proper foundation in blood, bone, form, action, color and disposition as you can build the kind of house you want to live in. The Doctor places the Scotchman second to none as a successful horse breeder because there is no other man in the world who possesses that fixedness of purpose peculiar to the Scotchman. He has a purpose in everything he does in life, and in selecting a sire he selects according to the dam and what he proposes the offspring to be. On the other hand, the writer points out that the American breeder too often goes in for the cheap sire, whose owner's terms are a colt to stand and suck at five days. He goes on to say that a cheap stud fee always means a cheap colt, while a dearer stud fee generally, but not always, means a higher-priced progeny. After deploring the widespread evidences of the scrub, the broncho and Indian pony in a large proportion of the American equine herds, he sets over against it what one finds on the farms of England and Scotland in the marks of good breeding in the horses of every class. In order to hasten the desired status in horse-breeding, the Doctor gives good advice that we in Canada could with advantage take some points from. He says:

"We should seek to bring about a rigid veterinary inspection of stallions for the stud, with the licensing of all that pass a satisfactory examination, and the emasculation by the examining veterinarian, without additional fee, of all rejected on such examination.

"1st.—The stallion should undergo a careful examination as to health and freedom from all contagious and infectious diseases, paying particular attention to the healthy condition of the genital organs. A failure to detect such diseases would often prove a serious loss to all parties concerned. The bond of the stallion proprietor should require him to remove his stallion from the stud on the first symptom of disease of any kind, and the law should provide for the punishment of the owner of a mare which is known to be diseased to such owner, but which is brought to be bred to such licensed stallion. Such provision would afford protection to the owners of stallions, and often prevent outbreaks of contagious and infectious diseases.

"2nd.—The horse's pedigree should be looked into. The time has surely come when no grade stallions should be allowed to enter the stud. None but full-bloods should be passed as eligible for breeding.

"3rd.—A careful examination as to soundness, freedom from hereditary weakness or unsoundness, and if such ailments as are transmitted by heredity be found to exist, the stallion should be condemned, unless it can be clearly shown that his ancestry on both sides for two generations back were absolutely free from such heredity, weakness or unsoundness.

"4th.—His form and proportions should be carefully taken, viz., height of body and length of legs, girth of chest and loins, form of back line, height of head when standing naturally erect, girth of cannon bone just below the knee, and metatarsal just below the hock; weight, and form of head and face, as an indication of disposition; also his various gaits in action. The examiners should be furnished with a uniform set of blanks, setting forth all the points above mentioned; and, taking a hundred for perfection in each, the examiner should give each stallion his percentage of perfection on each and every point, and his general average on the whole. The examiner's fees should be paid from county or State funds, so that he would be in no way obligated to the owners of stallions. A severe penalty should be attached by law to malfeasance of any nature in office, and he should be required to give bonds for the proper conduct of his office. The owner of stallion should be required to breed to only a certain class and style of mares, such as the inspector should deem proper and define in conditions of license.

"The inspector should be appointed by the Governor, and he should be an assistant to the State Veterinarian. A complete record of all

licenses issued for stallions, in the form of a duplicate of such licenses, should be kept in the office of the State Veterinarian, and a record of all licensed stallions in each county should be made in the office of the county recorder. The above-mentioned records would enable the State to keep a better horse census. Each owner of licensed stallion might be required to file a report with the State Veterinarian setting forth the number of mares bred to such licensed stallion and the number known to be pregnant on or before December 31st of each year. If any stallion be found in the stud not so licensed and recorded, the law should hold the owner guilty of a misdemeanor and he should be punished accordingly. All stallions should be examined during the month of January, and if licensed they should be re-examined for renewal of license during January of each year."

Prof. Dean Taken to Task.

To the Editor FARMER'S ADVOCATE:

SIR,—My attention has been called to an article in the Eastern edition of the *ADVOCATE* of June 1st, by H. H. Dean. The tone of the article is that factory managers are incompetent and dishonest. The writer would better serve the public by simplifying instead of mystifying the milk test. It will be remembered that a few years ago, while all other dairy lights were advocating taking milk at factories by the butter-fat test, H. H. Dean was industriously pushing his 2 per cent. theory, but the butter-fat test has come, and not one factory in Canada or the U. S. has accepted his theory. [NOTE.—Is not our correspondent in error on this point? Prof. Dean himself can no doubt state what cheese factories are actually using the "fat percentage plus 2" system in paying for milk. We would gladly hear from those also who have tried the plan.—ED. F. A.] He has again set up a straw lion in the path of the already mystified patron, who is led to believe that accurate testing can only be done by professors. He recommends a central testing station where testing can be done properly and honestly, then he goes further, and would recommend sending monthly weights with the samples, where he thinks much of the clerical work could be done better and cheaper. If the factory manager gets the accounts kept right I do not see very well how it could be better for both parties. An old proverb says: "If we are suspicious and distrustful of men we show to the world that in us are causes for suspicion and distrust." If the factory manager is not honest enough to test, would he be honest in weighing? Better get a "prof." to come to the factory to weigh. Having gone so far, I do not quite see where he will find a place to stop, for weights and measures are handled in all businesses under the sun, or have all dishonest men gone into dairying. A sample is taken at the factory just as the milk is dumped into the weigh can. It would be quite impossible to get an incorrect sample. Any patron can get a sample from the factory, and get it tested wherever he chooses, or he can come and see his milk tested, and he can get his daily weight from the milk drawer. A sample taken from one or two milkings might differ slightly from a weekly or monthly test. New milk, if allowed to stand a short time, will show by its color that careful stirring would be necessary before a correct sample could be got. There are various influences that will effect the richness in milk: Later or earlier milking; excitement of any kind; unkind treatment; anything that distracts the cow's attention; and sometimes we may not know the cause. All these conditions are in the hands of patrons. But his milk sampled every day as it is emptied into the weigh can must be a correct sample, and the butter-fat can be measured as correctly as the milk can be weighed. I know of no business in mill or market that gives better protection to the farmer than a properly conducted cheese or butter factory. THOS. B. SCOTT.
Middlesex Co., Ont.

Care of Nursery Stock.

In view of the fact that a large amount of nursery stock of all kinds has been sold and planted throughout the Province this spring, I have thought that perhaps a few suggestions on its future care and management might be in order. It is noted that the demand increases each year for evergreen trees and ornamental shrubs, which is a gratifying indication that the farmers and others are giving more attention to home adornment. In this work no tree plays a more prominent part than the evergreen. See to it that they have been very firmly planted. If over three feet in height it is advisable to have them staked for some time if planted in a windy location. Give shallow cultivation—they will not thrive in grass or weeds. Don't deluge them with water. More trees are killed with too much than too little water, and do not on any consideration plant evergreen trees where they will be shaded in any way by the box elder. This tree exercises a blighting influence on all evergreen trees, and in fact on pretty nearly everything near it. It is to be hoped that few have planted the Norway spruce the past spring. Their burnt, dingy appearance in spring makes them look as if a fire had run through them. On that account they should be discarded. The native is in every way superior.

Of the spiræas, lilacs, honeysuckles, syringas and roses it is unnecessary to say very much further than that all should have at least a third of their past year's growth cut off before planting.

This is specially necessary in rose bushes. Allow no flowers or blossoms the first year of planting. The rose, *Rosa Rugosa*, is sometimes troubled with a growth on the stem just under the surface of the ground, sometimes attaining the size of a hen's egg. This should be looked after occasionally through the summer, and all knots carefully cut off when small, otherwise the bush will be sickly and perhaps die.

Thousands of cuttings of cottonwood, Russian poplar and willows have been planted out this year. The spring has been favorable for their striking root. Allow no hard crust to form around the cutting; give continued and shallow cultivation, keeping the ground loose an inch deep. More crab-apple trees have been planted this spring than during the last five years. It is to be hoped they are largely composed of the Transcendent and Hyslop varieties. Where they fail, nothing else need be tried in the way of good crab apples. All fruit blossom showing first year of planting should be promptly picked off. If it is desired to grow trees on a single stem, rub off all young sprouts that may show on stem by hand not more than 2½ feet from the ground up. If wanted to grow in bush form, leave sprouts to grow. Always keep soil mellow for at least three feet around the tree.

To anyone planting Eastern-grown plum trees I have no advice to offer. The trees will soon be consigned to that Tophet of unprofitable timber, the brush pile. I notice a mistake often made in planting out red raspberries, in neglecting to cut off the canes of the previous year's growth, the idea being that some fruit may be got the year of planting. This is bad policy, as the few insignificant berries that may be obtained the first year will in no way make up for the loss the year following. Cut off all canes close to the ground when planting, so as to encourage the growth of new canes for next year's crop.

A strawberry patch has been started for the first time on a good many farms this spring, and as an old strawberry-grower and a fairly successful one I offer a few hints to beginners. Within a week after planting, the cultivator should go through. Shallow cultivation is the rule which must be observed. The plantation will need three hoeings before the runners cover the ground. Put earth on runners to keep them stationary, so that the young plants may strike root. This is necessary in our dry, windy climate. If you think you have no time to attend to this, at once quit trying to grow strawberries, otherwise certain failure will be the result. After the middle of August there are usually few weeds, but the ground should be kept loose. The time to mulch will depend on conditions. If the fall is wet you may leave it till the first of November; if dry, cover in October; and I would finally add:

Don't set plants at any other season than early spring.

Don't set a strawberry bed and expect it to furnish berries the rest of your life. Plant a new bed every year, and

Don't plant your bed where it will be handy to the chickens.

FRUIT PROSPECTS.

Very few things appear to have suffered from the extreme cold of last winter. All small fruits give promise of good crops; canes vigorous and healthy. Forty-three apple trees, and about the same number of crab apple trees, are more or less covered with blossom. The improved native plum trees give promise of good crops, being covered more profusely with blossom than in previous years. Grapes all killed to the root. Strawberries where not mulched all dead; where mulched are all right—another lesson. The lilacs are again in bloom, and again the thought comes, why are they not more lavishly planted? Certainly there is nothing more beautiful, fragrant, hardy or easy to make live. We have a collection of the newer varieties of lilacs that are just beginning to bloom, and are very interesting to us. Charles X. is a fine dark purple variety that blooms early and bears magnificent trusses of flowers. The *Josekia* is about two weeks later than the common varieties, very distinct and handsome in foliage, and while not so fragrant in bloom as some, should be planted to prolong the season. A. P. STEVENSON.
Nelson Municipality, Man.

Prof. Robertson's Suggestion Commended.

Our Glasgow contemporary, the *Scottish Farmer*, contains the following: "Professor Robertson, of Canada, recently threw out a capital hint regarding the selection and propagation of seeds, which it will be well for farmers to ponder carefully. He said that while the characteristics of each variety was, broadly, the same in all districts, productiveness varied according to locality, and that it was only by careful observation and selection of seed from the most vigorous plants in each locality that the best results could be obtained in the different localities. This is undoubtedly true, and opens up a profitable field to every farmer for selection and cultivation, and it is an occupation which requires no special training. The farmer simply takes what Nature has produced, and puts the hallmark of excellence on, and he follows on the lines she indicates. It is quite another thing to set out on a series of elaborate experiments to produce novelties. Let farmers take the hint, and during the coming summer select both seeds and roots for future special cultivation."

No Degeneracy of Sheep in Canada.

To the Editor FARMER'S ADVOCATE:

SIR,—I was more than pleased when reading your editorial "Do Sheep Degenerate in Canada?" in reply to Mr. J. McCaig's well-written but most misleading article in your last issue. Surely it must be a great mistake for any writer to attempt belittling and discouraging the flockmasters of our country at this period in our history, when such strides are being made in the development of greater excellence in sheep of the different breeds.

There is little need for me to attempt adding to your very able and telling defence, but as the subject is of very great importance it will be well for breeders to spare no pains in exposing the fallacy of Mr. McCaig's statements, so authoritatively set forth.

It is wisdom to consider the authority before heeding some of the newspaper talks nowadays, and in reading the article under review the reader would naturally suppose that the writer was a breeder of long practical experience, who made a deep and thorough study of his subject, both in Canada and the motherland. We find his name of late in several agricultural and stock papers under articles relating to sheep, which, considering circumstances, are creditable pen productions, but in the present case the space used is worse than wasted, and why? Because he unsparingly casts reflections on Canadian importers, breeders and farmers and their flocks, oiled words of discredit being flung right and left. That we may measure his value as an authority, I ask him to kindly tell us how long he has been breeding sheep, what his personal success or otherwise has been with the flock, how many imported and Canadian-bred sheep he owns, and how often and long has he studied the British flockmasters' doings and their flocks? The knowledge which constitutes a reliable authority on such subjects is not generally gathered mainly from books nor within the four walls of a schoolhouse.

He asserts that "Canadian importers do not get the best English sheep even for show purposes." I will ask Messrs. Tolton, Jackson, the Arkells, the Whitelaws, Kelly, Miller, Douglas, Smith, McGillivray, Oliver, Gibsons, Walker, Main, and many others whether they have imported England's best or not.

And the greatest satisfaction lies in that fact you mentioned, of the best from across the sea having had on many occasions to take second place when in competition with Canadian-bred sheep in this country. Deterioration, indeed! Why, instances without number rush to my mind where imported sheep have so improved in condition here as not to be recognized in a few months; and the descendants of imported sheep have very frequently developed into better animals than the ancestors. Disliking at present to make but little mention of personal experience, yet some instances are necessary to strengthen my argument. At the World's Fair, of the 35 possible first-prize-winning sheep in the Shropshire class, 22 were awarded my flock, and of these 17 were home-bred. My imported champion ram never weighed over 310 pounds, then three years old, while a yearling home-bred son of his (a first winner) weighed then 275 pounds, and at maturity 400 pounds. His dam, an imported first winner in England, never got over 220 pounds, while my home-bred two-shear winning ewes at Chicago weighed 250 and 200 pounds. In 1897, at Madison Square Garden Show, in New York, my home-bred first-premium shearling ewe weighed 240 pounds, and a ram lamb was good enough to win easily. In each case several of England's winners, and later winners at the American fairs, were competitors. Both were sired by the Chicago champion, weighing but 310 pounds. Does that show degeneracy, of quality or size? And I well know that other breeders can tell of similar or better success.

I can say, fearless of successful contradiction, that many of our pure-bred flocks of the different breeds can show better averages of quality than the general pure-bred English flocks, and as good size at maturity. Two or three months' earlier lambing gives them the advantage in producing lambs and yearlings more forward in size at same dates, but not at similar ages.

If Mr. McCaig has visited British breeders he must have observed what has been a great surprise to young importers, viz., how small a percentage of *real good yearling rams* can usually be found in lots of fifty or more. And we must bear in mind that those lots are severely culled of the objectionable ones before importers reach them. And I most heartily agree with you regarding our climate being, everything considered, as good for sheep production as that of the Old Country. Did we have the difficulties to contend with that British shepherds have in growing sheep, possibly there would be good grounds for Mr. McCaig's charges. Had we scab, foot rot, maggots, stomach worms and such (all very much the results of climate) to contend with, as they have so persistently to battle with across the sea, verily I think few of us would remain long in the business. Severe winter weather, which forces us to provide shelter and succulent feed, is a great "blessing in disguise,"

preventing, as it does, many diseases and ailments.

While conditions vary greatly, from all I can gather, my choice, so far as growing sheep is concerned, would be the Canadian weather and climate. Of course we have not the markets of Britain at our doors. Had we, why we could drive them out of their own markets, as Manitoba is deluging our home markets with easily-produced wheat. We have soil and climate that enables us to grow comparatively cheap succulent feeds for winter use, and so hold our own with any country in the production of high-class sheep for breeders and butchers.

And does not Mr. McCaig say so himself, thereby contradicting his own theories, when he writes, "The good reputation that Canadian mutton has enjoyed in the American markets has given rise to a demand for stock animals, etc.?" Does that look like deterioration? Are the peaked-backed sheep he writes of the kind that Americans want or will have? They need not come to Canada for them, having all they want of such.

Surely our friend McCaig has got badly mixed up somehow, or is it a case of "a little learning is a dangerous thing?"

I can truly say that since my boyhood, thirty years ago, the common sheep of our country have improved beyond measure, and the skinny, peaked-backed ones are of the long ago and forgotten. While the general progress accounts for that condition in part, the importing of good sheep, handled intelligently, and the owners of common sheep realizing the importance of better quality have so infused the imported blood into their flocks that now a most noticeable improvement is seen in their flocks, and a corresponding increased profit results from that infusion.

We have the material near at hand to keep on improving, in common ewes (so-called) and pure-bred sires, of which latter so many go across to the States, without considering the establishing of a new breed. Life is too short for the practical man to undertake such a great work, and the field in the line of producing still greater excellence in the established breeds is wide enough for the present generation. 'Tis hard to stop, but in conclusion I will state to beginners that, having been in touch with the pure-bred sheep business for some twenty years, the prospects at present are the brightest I have seen. Don't be discouraged by theorists. Consult the men who have been for years and years breeding the different kinds of live stock, and my judgment is that you will find a score who are ready to say that good sheep are the best rent-payers, mortgage-lifters and debt-destroyers we have to one who will agree with friend McCaig in his crying down Canadian sheep and methods.

J. CAMPBELL,
"Fairview Farm," Victoria Co., Ont.

Butter-fat and Cheese Production.

BY GEORGE RICE, CURRIE'S, ONT.

The relation of butter-fat to the product of cheese is a subject of very much importance. The following correspondence on this subject is self-explanatory:—

Prof. H. H. Dean, Agricultural College, Guelph, Ont.:

DEAR SIR,—It would be interesting and instructive if you would give us an estimate of the cheese product of the following cows, and also answer the following queries:

(1) In the Provincial dairy tests of 1897 and 1898, I find the following amounts of butter-fat and solids not fat produced by the best cows of four different breeds:

| Cows. | Year. | Butter-fat produced. | Solids not fat. | Total solids. |
|----------------|-------|----------------------|-----------------|---------------|
| Four Ayrshires | 1897 | 10.85 lbs. | 24.80 lbs. | 35.65 lbs. |
| | 1898 | 8.847 " | 21.68 " | 30.527 " |
| Four Holsteins | 1897 | 16.08 " | 48.94 " | 65.02 " |
| | 1898 | 15.903 " | 44.282 " | 60.185 " |
| Four Jerseys | 1897 | 13.93 " | 17.94 " | 31.87 " |
| | 1898 | 10.68 " | 19.725 " | 30.405 " |
| Four Grades | 1897 | 13.55 " | 36.31 " | 49.86 " |
| | 1898 | 11.714 " | 30.845 " | 42.559 " |

(2) Average per cent. of fat produced by the above—Ayrshires, 3.8; Holsteins, 3.4; Jerseys, 5.5; grades, 3.4. Could a good export cheese be made from milk containing 10.68 lbs. of fat and only 19.725 lbs. of other solids without loss of fat?

(3) In the newspaper reports of the annual meetings of cheese factories in this district (Oxford), the statement is generally made that "the Babcock test will again be used next year, and Prof. Dean's plan of adding 2 to fat-reading will be followed, as this gives general satisfaction." In your attendance on Institute work, do you find this rule giving satisfaction throughout the Province?

(4) Having had experts score your cheese made from milk of different per cents. of fat, what would be the differences in value of cheese made of milk of the following per cents.—3.4, 3.6, 3.8, and 4.0?

(5) How much cheese will a pound of fat in 3.5 per cent. milk make, and how much will a pound of fat in 5.5 per cent. milk make? What is the loss of fat in each lot?

(6) How many years have you experimented in making cheese from milk containing different per cents. of fat with view of determining the influence of the different per cents. on quantity and quality of cheese and the loss of fat in manufacturing?

Yours truly,
Geo. Rice, Esq., Currie's Crossing, Ont.:

DEAR SIR,—Replying to yours, would say in answer to your questions:

(1) All our experiments are based upon the per cent. of fat in milk, and not on the relation of fats. n. fat (solids not fat). I am unable to find this data (i. e., relation of fat to s. n. fat) in any of my reports. Based upon fat alone, the cheese product estimated is as follows:

RELATION OF FAT TO YIELD OF CHEESE, BASED ON FIVE YEARS' EXPERIMENTS.

| No. cows and breed. | Per cent. fat. | Lbs. fat. | Lbs. cheese per lb. fat. | Lbs. cheese each year. | Total lbs. of cheese. |
|---------------------|----------------|-----------|--------------------------|------------------------|-----------------------|
| Four Ayrshires | 3.8 | 10.850 | 2.6 | 28.210 | |
| | | 8.847 | 2.6 | 23.002 | 51.21 |
| Four Holsteins | 3.4 | 16.080 | 2.8 | 45.024 | |
| | | 15.903 | 2.8 | 44.528 | 89.55 |
| Four Jerseys | 5.5 | 13.930 | 2.3 | 32.039 | |
| | | 10.680 | 2.3 | 24.564 | 56.60 |
| Four Grades | 3.4 | 13.350 | 2.8 | 37.380 | |
| | | 11.714 | 2.8 | 32.799 | 70.18 |

(2) There is room for difference of opinion on this question. Our experiments indicate that milk containing such a large proportion of fat had a marked tendency toward softness or "weakness of body," and would not be considered a first-class export Cheddar cheese, though it might suit some customers.

(3) I find there is a general satisfaction throughout the Province with the system known as "per cent. of fat plus 2" for dividing proceeds among patrons of cheese factories wherever adopted, although the majority of factories still divide the money on the basis of weight of milk.

(4) On page 51 (1898 report) you will see the scoring of the cheese made from different percentages of fat. Generally speaking, I would say, in milk of equal flavor, etc., there would be little or no difference in the quality of the cheese made from milk containing 3.4, 3.6, 3.8 and 4.0 per cents. fat, supposing all were equally well made.

(5) As the average of five years' experiments, we find that milk containing 3.0 to 3.6 per cent. fat will make 2.8 lbs. cheese per lb. of fat, and that milk containing from 5.0 to 5.5 per cent. will make 2.3 lbs. cheese per lb. of fat. Loss of fat per 1,000 lbs. milk was 1.8 lbs. for lowest and 3.4 lbs. for richest; loss per 100 lbs. cured cheese, 1.9 and 2.8 respectively. (See page 50, 1898.)

(6) We have experimented for five years—1894 to 1898, inclusive. On the question of the relation of fat in milk to the quantity and quality of cheese made, we consider that we have investigated most, if not all, of the practical problems in connection with this matter. The Ontario Agricultural College report for 1898 contains a summary of five years' work in this connection.

Yours truly,
H. H. DEAN.

That the Babcock test is wonderfully accurate in showing the butter-fat in milk we all know, and as butter is 80 to 85 per cent. fat, it is therefore the best guide in buttermaking. Cheese, on the other hand, is only from 30 to 40 per cent. fat, and has from 60 to 70 per cent. (generally 66) other solids, principally casein. Unless the ratio of fat to solids not fat increases or decreases in exact ratio, it is not so good a guide in cheesemaking. That the ratio of increase or decrease is not so clearly shown by these public tests. Further proof of this may be found in the book entitled "Composition of Milk," by Dr. Paul Vieth. A total of 34,746 analyses made of milk supplied by English dairies is given in this work. We find the fat ranging from 3.2 per cent. to 4.4, while the solids not fat range from 8.8 to 9.2 per cent. (rarely outside of this). The increase of fat is generally followed by a slight increase of solids not fat, yet not necessarily so, as the following show: A Shorthorn cow tested 3.0 per cent. fat, and 9.5 solids not fat; a Jersey, 5.4 fat and 9.2 solids not fat; another Jersey, 2.2 fat and 9.1 solids not fat; and still another, 5.0 fat and 9.0 solids not fat. In these illustrations the solids not fat are nearly at the same per cent., while the per cents. of fat show extreme divergences.

It has been contended that cheese made from milk containing a higher per cent. of fat would be enough more valuable to offset the decreased amount of product. Prof. Dean in his numerous experiments has had the cheese scored by expert judges of international reputation. We find in Bulletin 102 O. A. C. that cheese made from milk testing 3.25 per cent. fat, scored by five different parties, averaged 94.3 points. The average score of another lot, made the same day from 4.75 per cent. milk, was 93.7 points. Further along we find cheese scoring 95 points, made from milk all the way from 3.15 to 5.50 per cent. fat.

Dividends to patrons of cheese factories made on the basis of fat alone are not always just. To analyze the milk and ascertain the total solids is too much work. Prof. Dean has hit upon the plan of adding 2 to the fat-reading. For instance, 3.5 and 4.0 per cents. milk are divided at the ratios of 5.5 and 6.0. This makes an allowance for the solids not fat, and gives nearly the same results as analyses of the milk would give.

We are wont to attach more value to gold than to iron because it is scarcer, but iron is the more useful. It is similar with butter-fat and casein. Prof. A. E. Shuttleworth, chemist to Ontario Agricultural College, says, "Casein can produce flesh, but fat cannot." Again, "A quantity of pure butter-fat has no greater heat-producing powers than the same quantity of fat from other sources." If one man brings more casein to a cheese factory than another he should be credited for it, as it gives additional value to the general product.

Poultry Fattened by the Forcing Method.

The fattening of poultry is being given more and more attention, both on this continent and in Europe, with the result that the better-finished birds are creating their own demand at increasing prices. A late number of the Report of the Royal Society of England gives the methods and results of feeding operations at Birdsall, Yorks., Eng. The writer of the article, Mr. A. H. Cathcart, was the poultry manager whose work is described, so that valuable details and observations are brought out. The first work after taking charge of the establishment was to clear off the entire stock of poultry on the farm, which was found to be in a diseased condition, and many of the hens dying of old age. The houses and grounds were then disinfected, and for some months no poultry were kept. Several portable wooden houses were then secured, and eighteen pure-bred hens and two cocks were purchased to provide eggs for setting the following spring. Birds were secured from neighboring farms for fattening, which was commenced, by the forcing process, in cages having compartments suitable for four or five birds. Plymouth Rocks, Wyandottes, Leghorns, Game and other crosses were used. The best result was obtained from a pure Orpington, weighing at the commencement 3 lbs. 12½ ozs., which in the three weeks of feeding increased 2 lbs. 1½ ozs., or 56 per cent.

The writer goes on to say that to obtain fine quality in poultry it is necessary that the fowls should be kept in the cages for three weeks. During any shorter period of treatment, the influence of the soft food on the flesh has not sufficient time to exert its full effect. If, however, it were purely a matter of producing flesh at a minimum cost per pound, it would be more economical to keep the birds up for, say, a fortnight instead of three weeks, causing a saving both in labor and food, as it has been proved that the amount of food that will produce one pound increase in a lean animal is less than that required in the case of a fat one, and the fatter the animal the greater the amount of food required to produce one pound of increase.

The birds fattened in the first trial were thirty-two. They consumed 188 lbs. of meal, 7½ lbs. of fat, and 7½ gals. of skim milk, the total valued at 17s. 2d. After testing several mixtures of the grain, the following was found to give best satisfaction, and consisted of finely ground oatmeal, barley meal, and finely chopped hay containing only soft and young grass. In mixing, the hay was first steamed for about twelve hours, so that it was quite soft when mixed with the meal. The sixteen chickens fed on this mixture kept perfectly healthy and made rapid increase of weight. The milk, and, in fact, all the food, was fed perfectly sweet and fresh, as it was found that sour food seriously deranged the systems of the birds. In fattening chickens in this way, weight of carcass is not the only consideration, nor does it in itself afford evidence of the fattener's skill, as a large proportion of the weight may be internal fat. If fattening be carried to excess in the early stages—that is, if more food is consumed by the bird than it is capable of converting into flesh—the excess will tend towards the formation of fat. Further, if the food is deficient in nitrogen or flesh-forming matter, and the proportion of carbohydrates is excessive, a part, varying according to the extent of the deficiency, is not only wasted, but is even acting in opposition to the fattener's aims. The albuminoid ratio of feeding stuffs and their profitable utilization for poultry is a subject of the utmost importance, and is a matter on which there is room for investigation on the part of the chemist and the experimenter.

Referring to the quality of the chickens, Mr. Cathcart says that, judging from the complimentary letters received from various customers, the birds have been much appreciated. One lady wrote: "Some friends unexpectedly came to luncheon, and we all seven lunched off one chicken, which was more than sufficient to satisfy all. It was quite equal to two from the poulterers here, only of far better quality." A caterer in York wrote: "I enclose cheque for £11 for chickens, which I must say are the best I have ever had. Please let me have the next ten couple, to be here on the 27th inst., and if you can supply more please let me know."

Speaking of establishing chicken-fattening establishments of this sort, Mr. Cathcart says there are a great many things to be considered and numerous obstacles to be overcome, and any premature attempt would probably end in failure. It is, however, he believes, practicable to adopt the system of fattening poultry throughout the country, and, further, that in time every district will contain a fattening establishment which will abolish the hard, scraggy fowl which at present predominates in our shops.

It will thus be seen that this system of poultry-fattening, whether conducted in England or Canada, produces highly satisfactory results. The work along this line already done in Canada, and especially that conducted under the direction of Prof. Robertson, and already reported in the FARMER'S ADVOCATE, should leave no room for doubt in the minds of enthusiastic poultrymen and poultrywomen as to the advantages of intensive fattening as above described.

Why Some Varieties of Fruits are Not Productive.

BY W. T. MACOUN, HORTICULTURIST, CENTRAL EXPERIMENTAL FARM.

Very few good crops of any kind of cultivated fruit are secured nowadays in Canada without much attention and intelligent labor; and the farmer who does not use his brains and the experience of others has little or no profit in growing fruit. The great importance of spraying, fertilizing, cultivating, and judicious pruning are, however, being gradually impressed upon him, and no farmer need plead ignorance of these essential factors in successful fruit-growing. But there are other principles involved which are not yet so widely known, nor have yet been made so generally prominent. One of these is the understanding the importance of the relationship which the flower and its parts bear to the fruit which is produced; the understanding what is meant by a perfect and an imperfect flower; a bisexual, a staminate, and a pistillate flower; and a self-sterile and a self-fertile variety; and most important of all, the knowing which varieties may be qualified by these different terms. Flowers, like animals, have sexual organs. As a rule, a single flower contains the male and female organs. When this is the case, and these organs are able to perform their respective duties successfully, the flowers are called perfect or bisexual. There are exceptions, however, where the parts of a flower, although appearing perfect, do not perform their functions successfully. There are also cases where a plant may have flowers, some of which contain only female organs, and some only male organs; and there are plants which bear only male and others only female flowers. These are called imperfect. If the male organs only are present the flowers are called staminate, and if the female only, pistillate. A self-sterile variety is one which has only staminate or pistillate flowers, or flowers possessing both organs, but which are of themselves incapable of producing fruit. A self-fertile variety is one which has perfect flowers, which produce fruit without the aid of another variety. Staminate flowers are easily recognized by the numerous small yellow bodies called anthers, which one sees when looking at the flowers of most of our cultivated fruits. From these club-shaped bodies, when they are mature, a fine dust called pollen is emitted, which is disseminated by wind or insects to the pistillate flowers, and these are thus fertilized. A pistillate flower is readily known by the prominence of the pistil or female organ, the anthers being absent altogether or but imperfectly developed. When the flower is perfect it may be fertilized by its own pollen, but very frequently the pollen from another flower of the same variety or same class of fruit is more effective. It will be seen, therefore, that it is of the greatest importance that the fruit-grower know whether the variety he is planting requires another in close proximity to it in order that a full crop of fruit may be borne. Occasionally one hears of an enterprising man who has several varieties of strawberries, one of which he finds outyields all the others. He determines to discard the poorer-yielding varieties and plant only the one kind. He plants an acre. The year following his plants are a mass of bloom, but no fruit sets. The cause is attributed to cold winds, frost, or possibly great heat. In despair he writes to an expert, and on inquiry it is found that he is growing Warfield, Crescent, or some other pistillate variety. He is advised to plant every third row with such varieties as Clyde, Parker Earle, or Beder Wood, which have bisexual or perfect flowers, and the following season he is a happy man. While the fact that the flowers of different varieties of strawberries may be perfect or imperfect is probably taken into consideration when planting by most of those who make a business of growing fruit, it is not known by a large majority of farmers, and from lack of knowledge on this point they often suffer considerable loss, and are in great perplexity as to the cause of the unfruitfulness of their strawberries.

Of late years horticulturists have been examining more carefully the flowers of apples, pears, plums, and grapes, and they have found that in these fruits also there are some varieties which are self-sterile and some partly self-sterile, although to the casual observer the flowers in many cases appear perfect. It, therefore, becomes necessary in order to produce a maximum crop of these fruits to judiciously intermix varieties. It is also important to intermix varieties which bloom at the same time, so that the male and female organs of the flowers on each will be in the same condition, and can thus be fertilized by the aid of wind and insects. Already lists have been published of apples, pears, plums, and grapes which are self-sterile or partly self-sterile, and as information is gained these lists will probably be made more complete. Every farmer, then, who contemplates planting an orchard or vineyard should make enquiries before setting out his trees as to the different varieties which should be intermixed, so as to produce the best results.

Country versus Town Life.

REFLECTIONS FOR FARMERS' DAUGHTERS.

Among all the positions that women occupy outside of domestic life, most of them are in some way connected with the towns. Every situation there available is crowded to the utmost. Shops, factories, offices, etc., are filled to overflowing, and wages are consequently low, so that many can only make a very precarious living. Still they prefer the town.

We hear very little of the life and occupations of women who live in the country, and they seem to fill a position of little importance. We hear it said that the life of a farmer's wife is narrow and contracted and one of great drudgery. This may be true to a certain extent, but it is not necessarily so. In reality, her position is one of great importance in relation to the progress and advancement of our country; not only in being a manufacturer and producer, but more especially in bringing up her boys and girls to be useful, patriotic workers; and unless parents will try to foster a love of country life in their children and teach them the true nobility of agriculture, that it is not degrading, and need not lower them in the social scale—a contemptible idea that exists in the minds of many of our young people—they will still seek to find situations in the towns and cities, the idea being that they can dress more elaborately and have a better time generally, with less work to do; and if this is to be the spirit of the age, I fear our country's progress will be slow. By leaving the farms they are depriving the country of a certain amount of wealth, as in most cases they cease to become producers. Time and money are spent in their education, and every evidence goes to show that the education of to-day is giving country children a distaste for farm work. It is time agriculture was introduced into the curriculum of their studies, and also the rudiments of hygienic cooking might be taught the girls without serious damage. But it rests with the parents greatly to develop in their children a love for the land and an ambition to become successful farmers. In England, at the present day, the nobility shrink from manufactures and trades, but hold agriculture in the greatest honor. Earls, dukes, and even princes cultivate land and preside at agricultural festivals, and our Queen competes for prizes at agricultural exhibitions, and has her table supplied with butter from her own dairy, which she takes a personal interest in. Then why should so many of our young people despise farming, or at least show their distaste for it by leaving the country. The girls, just when they most need their mother's care and she their help, must seek some position in town, and the unhealthful conditions that many of them are exposed to in crowded workrooms, offices, etc., is lowering the standard of health amongst the women of to-day. Also, domestic tastes are undeveloped, for how is a girl who works in a shop or factory, or teaches school all day, to learn anything of housekeeping, and if she marries, what sort of a home will she keep? In the country she can at least develop a healthy physique, and has a better opportunity of studying the art of home-making. There is plenty of profitable work to do on the farm. Take dairying, for instance. Here is an industry that can bring wealth to our country, and at present is not much past its infancy. The foreign markets open to us are unlimited, if we were supplying the best grade of butter, instead of being second, third and sometimes fourth on the British market. Denmark supplies the best quality, and there the butter is made by the women almost entirely. They operate the creameries, tend to the cows, do the milking and all the work connected with the dairy. England purchases \$3,000,000 worth of butter from this small country yearly. If Canada were to produce as much in proportion to her size, England might butter her bread on both sides. Why do not more of our young women take hold of this and other farm work with more spirit and energy? Is it because they do not realize the possibilities of profit and honor that it will bring them?

Every Canadian—man, woman and child—should have a patriotic feeling in connection with their work, and not only labor for their own good, but for their country's honor as well, and with such a country of natural wealth as ours, Canada should stand at the head of all the colonies.

It will pay every farmer to see that one of his daughters takes a course in dairying at a proper school of instruction, and for another to learn plain and economical cooking, for much of our health and prosperity depends upon the latter. A course in either of these can be learned in twelve weeks, and the expense will be trifling compared with the knowledge gained. Last season only twenty-five young women took the home-dairying course at the O. A. C., Guelph, which clearly shows that an interest has not yet taken hold of Canadian women to excel in this line of work.

In poultry-raising, beekeeping, horticulture and gardening there is intelligent and profitable employment for every member of the family, so that few need seek the cities. There are always some whom nature has particularly adapted to fill high positions, and these must gravitate to the busy cities.

Is there any life more wholesome, independent, or comfortable for people of moderate wants, than can be experienced on a good Canadian farm?

Huron Co., Ont.

COUNTRY WOMAN.

Dairying on Business Principles.

A WELL-CONDUCTED DAIRY—A HERD OF THIRTY GOOD COWS BUILT UP IN SIX YEARS.

It is some six years ago since the two Pirie Bros., of Middlesex Co., Ont., commenced farming on their own account. They had the advantage of a goodly share of energy, industry, clear intellects, conscientious scruples, and strong physiques, but their bank account was not large. Commencing at the bottom, and not afraid of physical effort, they undertook dairy farming, not only to gain a livelihood, but to make money; and if we are to judge from the progress that has been made in six years in establishing a dairy herd and in equipping the 200-acre farm they have purchased, we feel sure that prosperity will crown their efforts.

The farm, which is well adapted to dairying, in being well watered, shaded, and possessing a soil suitable for growing capital grass, clover, corn, roots, fall wheat, etc., is conducted on a short-term rotation, seeding to clover as nearly as possible every three years. The clover is left down just one season, the sod being turned under after one crop of hay has been cut from it. Apart from the fall wheat, no grain is sold, but only such other crops are grown as will best serve to nourish the working dairy herd, the growing heifers, the swine, and working teams.

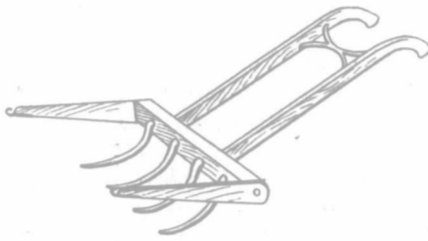
The milking herd consists of thirty head that are gradually undergoing an evolution of improvement. They consist largely of Holsteins, pure bred and grade, and a few good cows of common blood which save their skins by doing well at the pail, as evidenced by the weigh scales and Babcock test. The milk from each cow is weighed as milked, and samples from each are occasionally taken to the cheese factory and tested. The relative producing merits of the various individuals are thus fairly well learned, which knowledge is made use of in the weeding process which goes on annually as heifers from the best cows come to take their place in the dairy herd. Having a thorough appreciation of the value of heredity, Messrs. Pirie employ the services of none but butter-bred Holstein bulls from high-producing families for generations back. They also have a few choicely-bred, full-blooded cows, the blood of which they are seeking to perpetuate as rapidly as possible by retaining the heifer calves.

Until recently they patronized a cheese factory in summer and made butter at home during the winter, which led them to have as many as possible of the cows come in with the grass of spring, except the heifers, which were bred so as to drop their first calves in the fall at two and a half years old. The factory is now run as a creamery in the winter season, and hereafter fresh cows will be coming in at varying seasons so as to have some fresh ones at all times. Thirty months is considered the proper age for a heifer to commence to milk, and coming in at the fall season they can be milked for their first period for fifteen or more months, which develops in them the habit of persistent milking. In this way many of the cows continue to milk up to within a month or five weeks of calving, which this firm consider is about correct. Last year the experiment of keeping a number of the cows milking right up to calving time was tried, with the result of convincing the firm that it is not profitable practice, as a number of the animals became unduly reduced and are not likely to do as well for it the coming season. It is true they had not the most suitable feed for such a strain, as they had no silage and their fodder corn became very dry towards spring. It is the purpose of the firm to guard against this lack in years to come by erecting a silo this summer, for which they are growing twelve acres of Leaming and Butler Dent corn.

Last year the firm put up new stone basement stables beneath the barn, with cement floors. The ceiling is high, the basement has an abundance of large windows, and is well ventilated. A thermometer hangs in the stable, and the temperature is held at about 55 degrees Fahr. The internal arrangement of the basement is the simplest we have yet seen, and Messrs. Pirie, after one winter's trial, are loud in its praises. Behind the cows is a 5-foot passage and a gutter 18 inches wide, 6 inches deep next the cows and 4 inches next the walk. The platform on which the cows stand is 5 feet from the gutter to the row of stanchions, which is the only division between the feeding passage and the cows. There are no stall divisions, and the manger consists of a cement trough or gutter 20 inches wide and 7 inches deep. The bottom plank of the row of stanchions forms one side of the trough, and the face of the raised feed passage, which is 10 feet wide, the other side. The trough is continuous from end to end of the stable in having no partitions to keep the feed of each cow separate. The cows are all dehorned, so that they can reach all the food they wish on either side without fear of being hooked. Rigid stanchions are used, but Messrs. Pirie regret that they did not put in the sort that swings, that the cows may have greater freedom. The cows are turned out in the winter months for a brief period each fine day to drink and get a little exercise. Their food consisted of well-matured and well-eared corn fodder, clover hay, and mangels, with an allowance of straw to pick over during the night. They are carefully bedded twice a day and thus kept clean and comfortable.

While the herd is rapidly improving, severe weeding, guided by constant testing, will be continued. A number of the cows now produce about 60 pounds of milk per day for the flush six weeks of the season. Nor is quantity all that is sought, and the advance that has been made in bringing up the fat is very satisfactory, as their Babcock readings seldom, if ever, go below 3.80 per cent. of fat. It is just here that the breeding of the sires they have used is showing to good advantage. The herd of 30 head, including a number of heifers, last year gave a return of about \$35 per head from milk and calves disposed of. In addition to this, some \$300 worth of pork was turned off. The swine stock consists of four sows of Tamworth-Berkshire cross. Two litters per year are raised and fed largely on clover and sweet whey in the summer season. The farm, the herd, and the returns are not yet what the owners wish for, but we feel safe in predicting that they will in a very few years be the pride of the proprietor and an object lesson to all who come in contact with the operations of the concern.

Manure Turner.



J. S. NICHOLS, Oxford Co., Ont.:—"I give you a rude drawing of a manure turner that I have seen at a neighbor's which may possibly suit your Dakota inquirer. The tines are made of $\frac{3}{4}$ - or $\frac{1}{2}$ -inch iron and it turns over something like an ordinary scraper."

QUESTIONS AND ANSWERS.

Miscellaneous.

METHOD OF CASTRATING LAMBS.

SUBSCRIBER, Elgin Co., Ont.:—"Several articles on this subject have appeared in the FARMER'S ADVOCATE, but there is one point that has not been made clear. After cutting off the end of the scrotum and pressing the testicles forward, do you then draw them casings and all, or do you cut through the casings and then draw the testicles, leaving the casings in? I have from 50 to 75 lambs yearly and cannot find a man who can castrate them without killing from 8 to 10 out of 25 operated on. They all cut through the casings, as in the case of a calf or pig. Kindly answer and enlighten many who are in a similar quandary."

[The operation should be performed when the lambs are from two to three weeks old; at same time they should be docked; it should be done in the following manner:

The assistant takes the lamb in his arms, grasping all four legs, two in each hand, placing the back of the lamb close to his body, with its head nearly touching his shoulder. The operator seizes the purse, or scrotum, of the lamb and gently draws on it, and with a sharp knife takes a piece off the same, so that the testicles are quite visible. He then places the thumb and forefinger of his left hand close to the body of the lamb and forces the testicles forward, which he seizes one at a time with his teeth and gently draws them out casings and all, keeping his thumb and finger moderately tight together close to the body of the lamb. When the testicles are drawn out, draw slightly on the scrotum. It sometimes happens, the operator not biting sufficiently hard, that in the drawing out of the testicle the casing will slip off the testicle; in that case seize the testicle without the casing and draw it out; this will seldom happen if the operator is careful to take a firm hold of the testicle. Some people use forceps to draw out the testicle, but I prefer the teeth. I always make it a point to castrate in the morning on a moderately cool day, and the lambs should be always housed for the night after the operation, unless it is very fine weather. I have followed this plan for over forty years and do not remember of losing a single lamb from castration, and have operated on thousands. I think it very essential to success that the two operations, castrating and docking, should be done at the same time. Take off the tail at the joint, pushing back the skin with the left hand, which in returning to its normal condition partially covers the wound. A little practice is all that is needed to successfully perform both operations. It sometimes happens that a lamb will bleed too freely after docking; in that case tie a piece of small soft string moderately tight around the tail till the bleeding stops.

If your subscriber will follow these directions, I will venture to say his loss will be reduced to a minimum. If it so happens that these operations have to be performed when the weather is hot and the fly busy, take a little sheep dip, mixed pretty strong, and wash the parts; it will prevent the fly from striking them. The wash can be repeated if necessary. I would advise your subscriber, if he has a son, say fifteen years old, to let him try to operate. I commenced when in my teens and operated on one hundred for my first attempt, and did not lose one. The operation is simple and safe; it only wants a little confidence and care.

Bruce Co., Ont.

HENRY ARKELL.]

HOW MANY CROSSES MAKE A PURE-BRED.

J. K., Waterloo Co.:—"Would you kindly answer the following question in the ADVOCATE: How many crosses make a pure-bred animal?"

[No number of crosses by pure-bred sires will entitle an animal to registry in any of the Canadian records of pure-bred stock. To entitle an animal of any of the breeds of European origin to registry, the sire and dam must both be registered and must trace to imported registered animals. Five crosses of pure-bred sires of the same breed have been generally accepted as fixing the type and for the purpose of laying the foundation of nearly all pedigree records, and an animal so bred is practically pure-bred, though the rules of the records exclude it from registry.]

YARROW OR MILFOIL.

York Co., Ont.:—"The weed you send is yarrow (*Archillea millefolium*). It is a great pest of the pasture, roadside, and lawn, and can be readily recognized by its disagreeable smell, its much cut leaves, and its flat-topped clusters of white or pinkish composite flowers. The stems grow to a height of two or three feet, and the finely dissected leaves give the whole plant a fern-like aspect. The roots are perennial, but the stems are annual and herbaceous. Its introduction into pasture and lawns is due to its presence very frequently in timothy, clover and grass seed mixtures. These seeds when bought should be carefully examined, and the presence of yarrow seeds ought to be cause enough for rejection.

Yarrow seeds are about one-twelfth of an inch long. Under a hand lens they are seen to be flattened, and broader at one end than the other. The broad end is notched and has a slight projection from the center of the notch. Fine markings can be observed to run lengthwise. These so-called seeds are in reality fruits or achenes, and the real seed can be discerned through the thin walls of the achene.

YARROW SEEDS—ENLARGED AND NATURAL SIZE.

[Illustration of two yarrow seeds, one enlarged and one natural size.]

Yarrow is very aggressive for the reason that it not only sends up into the air many stems which bear flowers and seed, but also forms a large number of underground stems which grow out in all directions, and finally send up stems a short distance—three or four inches—away. The habits of the pest will suggest remedies for its eradication: 1. The seed must not be allowed to mature. 2. The underground stems or roots should be prevented from spreading. Persistent mowing will prevent seeding, while cultivation early in the season will stop the growth of the roots. In lawns, grubbing and hand digging will be necessary, while resort might be had to salt or coal oil.

O. A. C., Guelph.

W. LOCHHEAD.

WANTS TO KNOW ABOUT MILK PRESERVATIVE.

J. O'N., Quebec Co., Que.:—"I enclose \$1 for my brother, who wishes to become a subscriber for your FARMER'S ADVOCATE. As he is a milkman, he wishes me to ask you what about this milk preserving. Please let him know all about it, how it is used, and what complement to each gallon of milk? Also, does it taste the milk, and where would he get it to buy?"

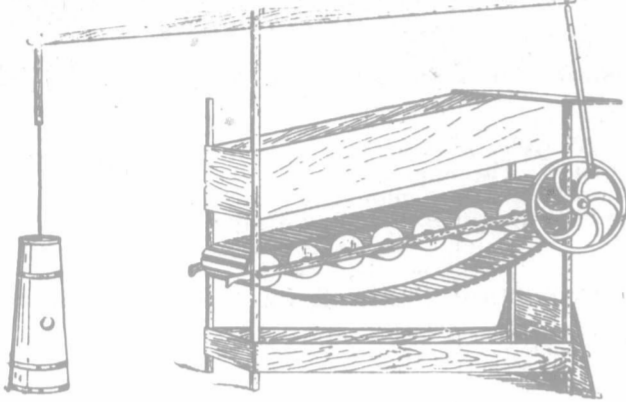
[Evidently J. O'N. has not read carefully the FARMER'S ADVOCATE for May 20th, as an article on page 268 of that number expresses our opinion of such nostrums as are sold for keeping milk sweet an undue length of time. A number of such mixtures that have come to our notice were composed largely of borax and boracic acid, both of which are strongly antiseptic, which not only preserve milk and other food from early decomposition, but seriously interfere with the digestion of foods containing them in even a small degree, by combating the action of the digestive juices of the stomach and intestines. The number of the FARMER'S ADVOCATE already referred to contains just such information in the dairy department as J. O'N. desires for his brother, and we trust he may accept the advice of these practical and thorough dairymen, that aeration, cooling and cleanliness are the best agents to employ in keeping milk in good condition, and the plan open to milkmen is to drop all careless patrons, and deal only with those who treat their milk as human food should be dealt with.]

PLAN OF FARMHOUSE—DOG POWER WANTED.

YOUNG FARMER, Muskoka Dist.:—"I am thinking of building a stone house. Could you publish some plan of a simple, convenient farmhouse? Would prefer a plain, square building, as I want as little expense in building as possible. I would like it arranged for a furnace in basement and open fireplace on first floor. A six or eight room house would be sufficient. Would also like plan of homemade dog power to run churn."

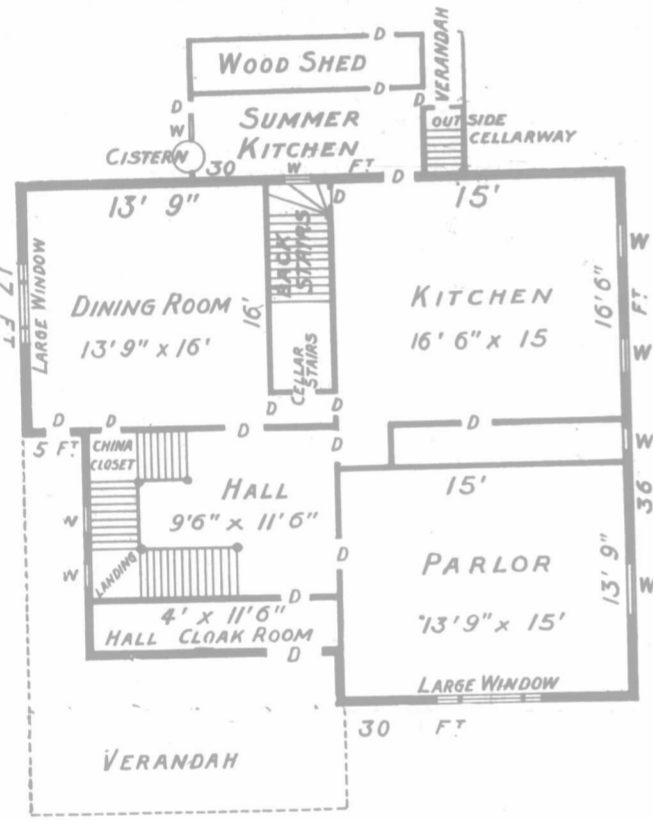
[The accompanying plans of ground and upstairs floors of Mr. R. P. Snell's farmhouse, near Snelgrove, Ont., has many desirable features, as it is compact and laid out with a view to economy of space and convenience. The illustration so well explains the arrangement and dimensions of the rooms that very little needs to be added by way of description. The house is of frame on a stone cellar. It has no furnace, but to put one in would be a very simple matter in a house being constructed, in which case it would be wise to have basement full size of house,

with a wall or partition to keep furnace separate from cellar. There is an open fire grate in the dining-room. The superstructure is sided with modern house siding, known as novelty siding. Beneath this is two thicknesses of building paper on another layer of lumber, nailed to the studding, and, of course, the inside is lathed and plastered. The ceilings are high, being about nine feet on either flat.



DOG POWER.

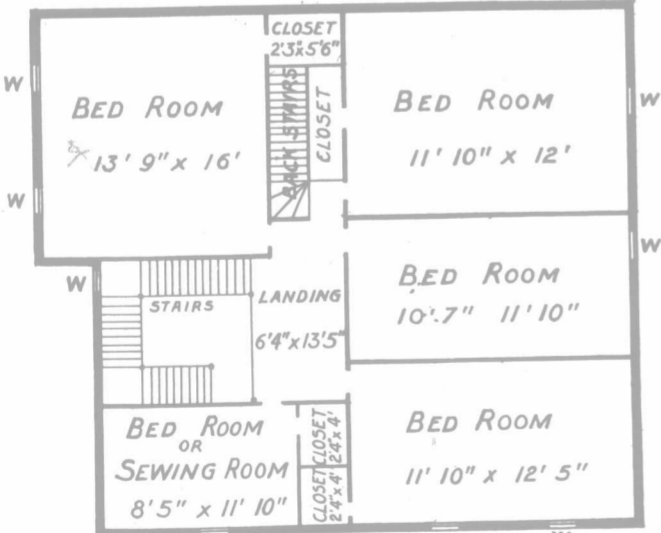
The house is well lighted, as will be noticed by the several large windows. The veranda on Mr. Snell's house extends only far enough to fill out the square, and does not project south of the house, as shown in the plan, but he would recommend anyone building to extend the veranda to where the dotted



GROUND PLAN OF MR. R. P. SNELL'S FARMHOUSE.

line is shown. The cost of this house, not counting the teaming of material, was \$1,200.

In a former issue of the FARMER'S ADVOCATE we published an illustration and description of a dog power which we reproduce. The plan was sent us by Mr. Thos. Martindale, who described it as follows: "Take four 2 x 2 oak posts, 4 feet long, put on with 2-inch screws, the lower side boards on the outside, and the upper ones on the inside of the posts. Then make head frame of 2 x 2 inch oak, bolting front end to frame 2 1/2 feet from the bottom, leaving the hind end loose, so that it can be raised



UPSTAIR PLAN OF MR. R. P. SNELL'S HOUSE.

or lowered with pins. Then get a wheel about 20 inches in diameter, drill a hole about 7 inches from center, and put a bolt through to attach a lever. Make two front pulleys 8 inches in diameter, with good flanges. Then run a shaft through the two front pulleys and the drive wheel and fasten it to frame. For tread use two 2-inch strips, fastened by small wrought nails to slats 12 inches long by 2 x 1/2 inches. The cut explains the rest."

COPPER SULPHATE TO KILL MUSTARD IN SEEDED FIELD.

F. L. FULLER, Colchester Co., N. S.:—"I read with much interest articles in several issues of your paper on the subject of spraying with sulphate of copper or iron to kill charlock. Being much troubled with this pest, I have decided to try spraying, but the fields I want to try it on have been sown with clover when the oats were sown and the clover plants will be very young and tender about the time I want to spray. I should like to know what effect the solution will have on the clover?"

[According to a number of experiments conducted in England in spraying various crops infested with wild mustard and other weeds, there is little or no damage done to smooth-leaved plants, such as growing grain crops, clovers, etc., provided the solution is not used too strong. An effective strength is acquired by dissolving two pounds of copper sulphate in ten gallons of water, or dilute one pint of a saturated solution (about 32 per cent.) with two gallons of water. The spray should be applied in a fine mist. See FARMER'S ADVOCATE, May 20th, 1890, page 268.]

Veterinary.

STRINGHALT.

SUBSCRIBER, Assa.:—"Please answer the following inquiry: 1. Is stringhalt in horses an unsoundness? 2. Is it incurable? 3. Is it hereditary?"

[1. Yes. 2. Confirmed or chronic stringhalt is incurable, but when aggravated by the presence of bone spavin, or any other local lesion of the limb which would cause irritation or undue pressure of the nerves, the proper treatment of the latter will sometimes greatly relieve the spasmodic action of the former. 3. It is not classed as an hereditary disease, but it is not wise to breed from an animal that is suffering from any chronic or incurable disorder.]

AILING FOWLS.

P. W., Edgeley Assa.:—"Please answer the following question: My hens become lame in one leg, then pine away for months and die. This disease has been among my poultry for the last two years. As I am expecting a large number of chickens, I want the disease cured before the chickens take it. I feed all the proper food that I know of, and they have access to plenty of sand." [See answer to Farmer's Wife, regarding overfed fowls, on page 297 of June 5th issue of the FARMER'S ADVOCATE.]

HYDROPS UTERI.

R. R., Roden, Man.:—"Please advise me as to cause and treatment of the following: 1. A heavy Clyde mare, in foal, was quite healthy until about three months before she should have foaled, when she took sick. She appeared heavy in foal, but had a discharge of a large quantity of bloody water, and was very weak while walking for about a week. This continued until her belly drew up so that she showed not the least sign of being in foal. Then while she was feeding she lay down and died without a struggle. She was very fat. 2. Also, could you tell me how to bring up a colt when its mother has no milk for it? What is the reason a mare sometimes has no milk, and how could it be prevented?"

[Dropsy of the womb, technically called *hydrops uteri*, occasionally follows copulation and simultaneous pregnancy. It may be due to what is sometimes termed a spurious or false conception, which, instead of developing into a normal fetus, produces either a fleshy mass called a "mole," a uterine kyst, or dropsy of the womb. The pathology of this abnormal state is not well understood. The condition may also be due to disease of the womb. The treatment (providing a correct diagnosis is made, which is imperatively necessary) consists in sufficiently dilating the mouth of the womb so that the contained fluid will freely escape. The womb should then be injected daily, for a few days, with creoline one part to forty parts water. Give, internally, one dram iodide of iron, morning and evening, for one week. Keep the bowels open with wholesome laxative diet.

2. Cow's milk slightly diluted with water—water, one part; fresh cow's milk, four parts—is the best available substitute for mare's milk, and, until the foal is three or four months old, the milk should be fed at blood heat. For the first week or two it is necessary to feed the little animal frequently, say every hour and a half or two hours, and, as it becomes older, gradually decrease the number of feeds until three or four times a day will suffice. If there is a deficient secretion of milk at the time of parturition the mammary glands may be stimulated to action by warm fomentations locally, encouraging the foal to suck, and feeding the mare succulent, sloppy, milk-producing food. W. A. DUNBAR., V. S., Winnipeg.]

ANASAREA.

O. W. REID, Grey Co., Ont.:—"My thoroughbred Durham cow calved on April 12th—a bull calf. When the calf was born his hind legs were swollen from the hock down to the feet, the tail also. When the swelling is pressed by the finger the dent comes out slowly. He seems smart and doing well. Please let me know the cause and if anything can be done for him?"

[The meaning of the name of this disease is fluid beneath the skin, and although we have never met a case just as described by our correspondent, still the same cause operated in all. The remarkable point in this case is, "the calf is alive and well,"

but we are not quite sure that it will be reared. The cause of this dropsical condition is not well ascertained. It may be due to a disease of the kidney, causing interference with the blood circulation, or to some mechanical obstruction to the portal circulation or absorbents. We would recommend that nature be allowed to take its course. If our surmise is correct, nothing can be done.

DR. WM. MOLE, M. R. C. V. S.]

BROKEN WIND.

W. H. M., Victoria Co., N. B.:—"I have a horse ten years old which has worked all the winter in the lumber camp. I noticed this horse had a difficulty in breathing—it was not a heave, but he breathed like a horse just in from a hard run. He feels well, but has a cough and a rattle in his throat. It does not seem to affect him much when working. Would you kindly reply, as I should like to do something for him as soon as possible?"

[A good deal of misconception exists in the popular mind with regard to broken wind. Many horsemen apply this term to all cases of difficult breathing. Asthma, heaves, heavy, thick wind are some we frequently hear of, but it is known better by the term emphysema of the lungs, for this explains the true character of the disease. An escape of air between the pleura, or covering, and the lungs proper. Symptoms: It will be almost impossible to give all the symptoms met with in various cases. Almost all horsemen and traders become very smart and knowing when talking of broken wind. I can soon fix him so that no veterinary surgeon can find it out. To bring forth the characteristic sign of broken wind it is only necessary to give the animal a pail of water (repeated if necessary), and then have him ridden or driven for ten minutes, and no fixing in the world will conceal broken wind if in existence. A short, husky, dry cough, peculiar to broken wind, is the first symptom that is noticed, especially when brought out from the stable in the morning, or after a short drive or drink of water. When the disease is well established there is no cure for it. Putting aside all theories as to its origin—and there is only one in my opinion: hereditary predisposition—it is generally admitted to be caused by derangement of the digestive organs, in many cases due to poor, innutritious food. Bad clover hay is a very frequent cause; this will cause distention of the stomach, and taking the animal to work directly after a meal or a hearty drink of hard, cold water. Very careful attention to feeding and watering of the animal is the greatest importance. The diet should be of the very best clear oats; very little hay, and that chopped if possible. The animal should be watered before feeding, and fed one hour before work. Many different remedies have been tried, and we only know of two that have afforded any service—arsenic and sulphur. The most convenient way of giving arsenic is in the form known as Fowler's Solution, or Liquor Arsenicalis of a standard solution—that is, each ounce should contain 4 grains of pure arsenic. A tablespoonful mixed with the oats twice or thrice a day and alternated with the powdered sulphur each week.

DR. WM. MOLE, M. R. C. V. S.]

PARALYSIS IN HORSE.

Jos. C., Lincoln Co.:—"I have a horse nine years old that has something wrong with his hind quarters. Ordinarily he can move forward without much difficulty (that is, to walk), but if I should try to back him or to make him stand over it would seem as if he couldn't lift his hind feet. He would throw his right hind leg out sideways and hold it very stiff, as if all the joints were set, and at the same time tremble violently. This condition has lasted about two years. At first his left hind leg was the worst, now it is the right one. He has been able to work all along until this week. He is in fine condition; his hair is soft and glossy. He is a fine large horse. His joints are apparently all right. It seems to me as if the trouble is in the small of the back. What is the matter with him, and is there any cure for it? And if there is, please give treatment?"

[This disease is commonly called broken, sprained, jinked back, shiverer. The description given is excellent as regards the horse. He may be able to trot in a straight line well enough, but when turned round sharply immediately knuckles over with the fetlock joints and sometimes falls to the ground. A modified form of this disease is often encountered: Although able to turn without falling, does so with great difficulty, throwing the hind legs about in an awkward, unsteady manner, clearly showing the want of co-ordination of the muscles of the back and limbs. Shivering is another form of this complaint, and manifested particularly during the act of backing. The tendency of this disease is to increase in severity as the animal becomes older, and give an aged appearance before he has reached his prime. The animal is unable to take natural rest, as he rarely lies down, particularly if confined in a stall; and should they fall down in their sleep are unable to rise again without assistance. There is no doubt in my mind that this disease is hereditary, and will reappear in the course of years. There is no treatment likely to remove this malady. It should be treated on the best general principles dictated by the owner. If unable to work, a dose of physic must be administered: Barbadoes aloes, one ounce; calomel, two drams; mixed with molasses and given after preparation of one or two days bran mash. Apply a good stimulating liniment of ammonia along the spine is about all that can be done.

DR. WM. MOLE, M. R. C. V. S.]

PARALYSIS IN COW.

C. B. T., Dundas Co., Ont.:—"I have a cow seven years old. She calved last March. The calf was large and she required assistance. She bloated very badly. After a little time the bloating went down, but she was unable to stand on her legs. After four days I was advised to get her up, but found she could not stand long, and then only by leaning against the wall. She went down again and cannot get up, and has remained so for about four weeks. She feeds well, and I turn her over every day. Please tell me what is wrong, and is there any liniment I could rub on?"

[Paralysis is a loss of power and sensibility, and is frequently seen in cows. When the animal is only partially affected, there is some little power and feeling left, but in moving the gait is staggering and uncertain, and if the paralysis is complete, caused by the compression of the nerves or spinal cord, the animal is unable to maintain a standing position; and in this case we are of opinion that the nerves were injured during the delivery of the calf, and we do not think it will pay you to treat her. If you are determined to try, this method should be adopted: Place the animal in a good roomy loose box. Keep the bowels opened freely, and apply along the course of the spine a strong stimulating blister, such as the liniment of croton or mustard oil, applied daily until a blister is formed. For medicine, give the following powders daily in a quart of gruel: Powdered nux vomica, two ounces; carbonate of soda, eight ounces; bicarbonate of potash, two ounces. Mix, and divide into twelve powders. Give one night and morning.

DR. WM. MOLE, M. R. C. V. S.]

HORSE CRAVING MINERAL MATTER—HOOF DRY.

W. E. S., Gloucester Co., N. B.:—"I have a Standard-bred carriage horse with whose hoofs there seems to be something wrong. They are very brittle. I would be much obliged to you for indicating a treatment that would remedy that defect. The horse has also an intense craving for clay; so much so, that I fear to let him out in the yard. Would this depend on the feed? He is fed on hay and oats. What would you advise?"

[The desire for clay indicates a craving of the system for mineral matter, which the horse requires. This can be given by mixing one part of hardwood ashes with three parts of salt and allowing him free access to it. It will do no harm to give him sods occasionally to consume if he desires to do so. After two or three weeks' treatment in this way he should be turned out to pasture. The hoofs will in all probability come all right after he is turned out. If he cannot be allowed to run out, his shoes should be taken off and he should be given a box stall with earth floor. Also paint the hoofs every night with the following ointment: Raw linseed oil, crude petroleum oil, neat's-foot oil, and pine tar in equal parts.]

INDIGESTION.

J. B. R., Simcoe Co., Ont.:—"I have a mare that is thin in flesh, for nearly a year now. She eats all right and works well, but keeps in poor condition. Two weeks ago several blotches about the size of a cent raised over the body and the hair came off. Could you give the cause and cure?"

[Feed bran mash only for 36 hours, after which give her a pint and a half raw linseed oil and two ounces spirits of turpentine. If the bowels do not act freely in 24 hours give exercise freely until purging commences, still continuing the mash diet, and return to solid food gradually, which should be oats and bran and grass. Give her a teaspoonful of the following mixture three times a day for a month. Bicarbonate of soda, nitrate of potash, powdered gentian, of each four ounces; nux vomica, powdered, two ounces; arsenious acid, one dram. All thoroughly mixed. Have her teeth examined by a competent veterinarian, and, if necessary, have them filed.]

FLIES ON CATTLE—INDIGESTION IN MARE.

W. H. P., Durham Co., Ont.:—"1. What is good to put on cattle to keep off flies? 2. What would be good to give a mare that passes wind while driving? Sometimes she is all right for months, and then again she is very bad."

[1. The sheep dips advertised in the columns of FARMER'S ADVOCATE are good for the purpose you ask. 2. This condition is due to indigestion, and can be remedied by careful and regular feeding and vegetable tonics. Feed clean bran, oats and hay, and give equal parts of powdered gentian and soda in teaspoonful doses twice daily in the feed.]

PECULIAR CONDITION OF COW'S UDDER.

J. W. F., Bermuda:—"One of my cows—a half-bred Jersey—has been steadily getting poorer in condition, and the flow of milk has decreased rapidly. But what struck me as very peculiar is that all of her teats and a small portion of her udder have what appears to be tiny bruises under the skin (as if a pin or needle had been stuck all over them), but the outside skin is intact. Would you kindly advise me through the columns of your valuable paper my cow's probable trouble, and what steps, if any, I can take to get her all right, and if, in your opinion, the milk is fit to be used?"

[The symptoms of failing condition and what seems to be slight ulcers beneath the skin of the udder strongly indicates tuberculosis. The cow

should be subjected to the tuberculin test by a competent veterinary surgeon, and destroyed if she responds by a rise of temperature. We would not consider the milk suitable food drawn from a diseased udder, whatever may be the trouble, and if the udder is tuberculous, the milk is positively dangerous. Having satisfied yourself that this is not the trouble, apply carbolized oil to the udder, and sterilize the milk by heating to a temperature of 160 degrees before using.]

WINDGALL IN MARE.

A. H. J., Grey Co., Ont.:—"I am a reader of your valuable paper, and consider it indispensable to a live, progressive farmer. There is always valuable information in your veterinary column. I have a fine mare in foal, about thirteen years old. About one year ago she met with a misfortune, causing a swelling on the left hind leg just over the fetlock joint. It appears to be on the side of the leg, not hard and yet not soft. It was blistered once or twice. I have been told it is a windgall. Some say blister mildly several times, others advise to blister once, but very severe. I do not want to inflict any unnecessary pain on the animal. My own opinion is it arose from a spavin of some kind, and it is the cords of the leg that are affected. She works at light work without any trouble, but to put her at anything that requires much exertion causes pain. Can you give me any information what to do?"

[Windgalls are of very common occurrence, and consist of puffy tumors situated on the back part of the fetlock joint. They are lined with synovial membrane, and secrete synovia (joint oil), which lubricates the tendon where it plays over the bone. They are usually due to excessive driving on hard roads, or from continued severe labor. If of long standing they cannot be removed, but if treated in the early stages they may be reduced. Cold applications, pressure, and the use of astringents are considered the best treatment. Bathe or allow a stream of cold water to flow on the part for several hours. Take a piece of cloth, fold several times, and place upon the part, and apply a bandage, keeping it wet, which will cause absorption. Such astringents as vinegar, or white lotion made of one half ounce each of sugar of lead and alum, mixed with a quart of water, shaken well before using. Hand rubbing is also beneficial to stimulate absorption of the synovia. While blistering is favored by some practitioners, it is looked upon by others with disfavor.]

HORSE REFUSES HAY.

SUBSCRIBER, Wellington Co., Ont.:—"Can you or any of the readers of your valuable paper tell me what is the best thing to feed a horse to give him an appetite? He is a Clyde, five years old, eats grain fairly well, but eats good hay poorly. He appears to feel all right, but is very gaunt."

[The chances are the horse's teeth require attention by a competent veterinary surgeon or dentist. The following drugs will, in all probability, put an edge on his appetite. Give twice a day for two weeks, in feed, a teaspoonful of the following mixture: Bicarbonate of soda, pulv. gentian, of each 4 ounces; pulv. nux vomica, 2 ounces; and pulv. capsicum, 6 drams. His hay should be cut and fed moist, mixed with his grain, ground, and some bran. A run on good pasture should tone up his digestive organs effectively.]

PARALYSIS.

SUBSCRIBER, Ont. Co., Ont.:—"Please inform me through your valuable paper what to do for a horse that has partly lost the use of the muscles, or paralyzed, on one side of his head. His ear hangs down a little; his eye is affected, a little matter runs out of the corner; and his lower lip hangs down. He has difficulty in drinking; he had to suck it in the other side of his mouth. It seems to hurt him to drink, but he can drink better now than he could two weeks ago. He has had it about three weeks or more. Some days I have him out on grass when fine and feed him well. He eats well. What would be best to do in such a case, and do you think it can be cured entirely? Would it be advisable to work him any? He is in good condition; five years old and a little spirited; heavy general-purpose."

[The seat of the trouble is along the course of the nerve supplying the affected muscles, and the pressure on that nerve may be relieved by absorption, yet very many of such cases never recover. Remove heavy or bad-fitting halter. Give a brisk physic of aloes, 1 ounce; calomel, 1 dram; ginger, 3 drams, dissolved in a pint of cold water, and drench after a twelve-hours fast. Feed bran mash only for 48 hours, and if purgation does not commence in 24 hours give exercise. After the bowels have responded freely give one of the following powders three times daily in feed: Iodide of potassium, 1½ ounces; nitrate of potash, 2 ounces; powdered nux vomica, 1 ounce. Mix well and divide into twelve powders.]

KNUCKLING IN FOAL.

A. C., Durham Co., Ont.:—"I have a foal that knuckles on its front pasterns, and also appears weak in the knees. What treatment would you recommend?"

[Foals frequently show the weakness referred to above. It is difficult to account for it when the dam has been fairly well kept, not been over-worked, and has not run milk to any extent before foaling. With older animals an application of a blister to the weak joints would be in order, but the skin of a foal is too tender to admit of this

treatment, as a sore would probably be caused that would be very difficult to heal, and the last state would be worse than the first. The best treatment is to apply a firm bandage from the foot half way to the knee. It may be necessary to apply a front splint cut from the leg of an old felt boot; but usually a firm bandage well put on will remedy an ordinary case.]

SYMPTOMATIC ANTHRAX.

W. S. A., Grey Co., Ont.:—"Please send a remedy for a disease called black leg on young cattle. They generally die in a very short time after they take it. It is very contagious."

[There is no treatment known that will cure this disease. The sound animals should be removed, the affected ones should be destroyed and burned, and the pastures should be drained and broken up. DR. WM. MOLE, M. R. C. V. S.]

Important Cable from South Africa.

R. A. Lister & Co., limited, Montreal, inform us that a telegraphic message just received from South Africa announces that the "Melotte" separator has secured the first prize at the Great Trials of Hand Cream Separators held at Port Elizabeth, in competition with the "Alpha" and other machines. This signal award, so closely following the report of the Judges of Royal Agricultural Society of England, and the honors obtained by the "Melotte" separator at the last London Dairy Show, and the great Munich Exhibition (Bavaria) of 1898, would appear to ratify the guarantee issued by the "Melotte" Separator Company, of Bristol, namely, that the "Melotte" separator takes less power to turn and does more work than any other hand separator in the world, with equal efficiency. We understand the Melotte Co. are prepared to prove the merits of their separator by sending any size machine on free trial for fourteen days to any bona fide intending purchaser, to be worked alone or alongside any other make; and if at the end of that time the machine does not fulfill the statements made concerning it, the users are at liberty to return same at the expense of senders. A fairer offer could not be made, and buyers will be studying their own interests to write at once and avail themselves of same.

Chatty Stock Letter from Chicago.

FROM OUR OWN CORRESPONDENT.

Following table shows current and comparative live stock prices:

| Beef cattle. | Extreme prices now. | Top Prices | | |
|-----------------------|---------------------|----------------|--------|--------|
| | | Two weeks ago. | 1898 | 1897 |
| 1500 lbs. up..... | \$5 15 to \$5 60 | \$5 65 | \$5 15 | \$5 30 |
| 1350 to 1500 lbs..... | 4 90 " 5 60 | 5 55 | 5 20 | 5 20 |
| 1200 to 1350 lbs..... | 4 60 " 5 00 | 5 40 | 5 00 | 5 10 |
| 1050 to 1200 lbs..... | 4 40 " 5 35 | 5 20 | 4 95 | 5 20 |
| 900 to 1050 lbs..... | 4 30 " 5 20 | 5 10 | 4 90 | 4 75 |
| Hogs. | | | | |
| Mixed..... | 3 55 " 3 92½ | 3 95 | 4 32 | 3 60 |
| Heavy..... | 3 45 " 3 95 | 4 00 | 4 37 | 3 57 |
| Light..... | 3 30 " 3 95 | 3 90 | 4 25 | 3 62 |
| Pigs..... | 3 20 " 3 80 | 3 80 | 4 00 | 3 60 |
| Sheep. | | | | |
| Natives..... | 2 75 " 5 25 | 5 60 | 5 00 | 4 85 |
| Western..... | 4 50 " 5 10 | 5 50 | 4 90 | 4 50 |
| Yearlings..... | 4 35 " 5 25 | 5 85 | 5 50 | 5 00 |
| Lambs..... | 4 00 " 6 65 | 7 00 | 6 35 | 6 00 |

Receipts at four leading Western markets for the first five months of 1899, with comparisons:

| | Cattle. | Hogs. | Sheep. |
|------------------|---------|-----------|-----------|
| Chicago..... | 983,227 | 3,451,307 | 1,545,083 |
| Kansas City..... | 609,219 | 1,396,567 | 410,228 |
| Omaha..... | 250,846 | 882,849 | 522,100 |
| St. Louis..... | 244,573 | 859,177 | 138,037 |

Western corn-fed range cattle comprise a large share of the current offerings. Many of the choicest cattle—indeed, some of the highest-priced ones—are branded. Generally speaking, however, the branded cattle usually sell a little above a medium price for good to choice beefes. One day recently T. B. Hord, of Nebraska, sold 180 head of 1,289 to 1,560 lb. fed Western steers at \$5.15 to \$5.25, and 42 heifers, averaging 1,226 lbs., at \$5.10. The Standard Cattle Company, of Nebraska, sold 46 fed Western steers averaging 1,444 lbs., and 134 head averaging 1,461 lbs.; both lots at \$5.10.

An agent recently bought in Texas, for Pierre Wibaux, 5,000 choice two-year-old steers at \$25 per head, with a 20 per cent. cut out. These cattle were out of Gillette Shorthorn cows, and sired by White-faced bulls. The lot is said to represent the cream of Texas two-year-olds. They will be shipped from Amarillo to Moorecroft, Wyo., and then driven to the Wibaux ranges, on the Northern Pacific.

Prices for Texas two-year-olds above the quarantine line are \$21.50 to \$25 per head.

Average weight of the 3,451,307 hogs received at the Chicago Stock Yards the first five months of this year, 231 lbs. The 3,559,813 hogs received a year ago averaged 227 lbs., and the 3,322,095 received the first five months of 1897 averaged 238 lbs. Average last week, 234 lbs., against 237 lbs. the previous week, 231 lbs. a month ago, 233 lbs. a year ago, and 238 lbs. two years ago. There is every reason to believe that June receipts of hogs will be liberal, but the prospects are for stronger markets later. Hog prices are lower than they were awhile ago, on account partly of increased receipts, partly on account of the recent extreme heat, and partly on account of the yellow fever talk in the South.

"Let the sheep market start on the down grade," said a salesman, "and everybody in the country commences shipping." The sheep market lately has suffered a good deal, and it does look as if the people who deal in sheep are somewhat inclined to follow the leader.

The 1898 Year Book, recently issued by the United States Agricultural Department, shows a decrease of the number of horses in Iowa from Jan. 1, 1898, to Jan. 1, 1899, of 40,890 head. The census practically shows the same percentage of decrease throughout the United States. Jan. 1, 1898, there were reported 1,022,242 horses in Iowa, valued at \$34,870,027; and Jan. 1, 1899, the returns gave 981,352 horses, appraised at \$37,686,866. Horses are increasing in value. George McMan, Rochelle, Ill., sold a load of 22 high-steppers for an average of \$264. This average has been beaten but once during the season in the regular auction, when in March P. A. Immel sold 22 head for an average of \$275. Horse prices are not quite as high as a while ago, but there is a good strong market for them.

The following gives an idea of the size of the mammoth packing plants. Buildings are usually measured in square feet, but the size of Swift & Co.'s plant is best computed in acres, as follows:

| | Buildings, Floor space, Land, acres. | acres. | acres. |
|------------------|--------------------------------------|--------|--------|
| Chicago..... | 38 | 67½ | 40½ |
| Kansas City..... | 81 | 28 | 19½ |
| Omaha..... | 6 | 19½ | 23 |
| St. Louis..... | 5½ | 13½ | 27½ |
| St. Joseph..... | 4½ | 16½ | 19½ |
| St. Paul..... | 3 | 6 | 16 |
| Totals..... | 65 | 150½ | 145½ |



AN AFRICAN MILLIONAIRE.

EPISODES IN THE LIFE OF THE ILLUSTRIOUS COLONEL CLAY.

BY GRANT ALLEN.

(Continued from page 298.)

I broached the subject delicately. It was a fad of Lady Vandrift's, I said. She had set her heart upon those useless trinkets. But the curate was obdurate. He threw Uncle Aubrey still in my teeth. Three hundred?—no, never! A mother's present; impossible, dear Jessie! Jessie begged and prayed—she had grown really attached to Lady Vandrift, she said; but the curate wouldn't hear of it. I went up tentatively to four hundred. He shook his head gloomily. It wasn't a question of money, he said. It was a question of affection. I saw it was no use trying that tack any longer. I struck out a new line. "These stones," I said, "I think I ought to inform you, are really diamonds. Sir Charles is certain of it. Now, is it right for a man of your profession and position to be wearing a pair of big gems like those, worth several hundred pounds, as ordinary sleeve links? A woman—yes, I grant you. But for a man, is it manly? And you a cricketer!"

He looked at me and laughed. "Will nothing convince you?" he cried. "They have been examined and tested by half a dozen jewellers, and we know them to be paste. It wouldn't be right of me to sell them to you under false pretences, however unwilling on my side. I couldn't do it."

"Well, then," I said, going up a bit in my bids to meet him, "I'll put it like this. These gems are paste. But Lady Vandrift has an unconquerable and unaccountable desire to possess them. Money doesn't matter to her. She's a friend of your wife's. As a personal favor, won't you sell them to her for a thousand?"

He shook his head. "It would be wrong," he said. "I might even add, criminal."

"But we take all risk," I cried.

He was absolute adamant. "As a clergyman," he answered, "I feel I cannot do it."

"Will you try, Mrs. Brabazon?" I asked.

The pretty little Scotchwoman leaned over and whispered. She coaxed and coaxed him. Her ways were winsome. I couldn't hear what she said, but he seemed to give way at last. "I should love Lady Vandrift to have them," she murmured, turning to me. "She is such a dear!" And she took out the links from her husband's cuffs and handed them across to me.

"How much?" I asked.

"Two thousand?" she answered, interrogatively. It was a big rise, all at once; but such are the ways of women.

"Done!" I replied. "Do you consent?"

The curate looked up as if ashamed of himself.

"I consent," he said, slowly, "since Jessie wishes it. But as a clergyman, and to prevent any future misunderstanding, I should like you to give me a statement in writing that you buy them on my distinct and positive declaration that they are made of paste—old Oriental paste—not genuine stones, and that I do not claim any other qualities for them."

I popped the gems into my purse, well pleased.

"Certainly," I said, pulling out a paper. Charles, with his unerring business instinct, had anticipated the request and given me a signed agreement to that effect.

"You will take a cheque?" I inquired.

He hesitated.

"Notes of the Bank of France would suit me better," he answered.

"Very well," I replied. "I will go out and get them."

How very unsuspecting some people are! He allowed me to go off—with the stones in my pocket!

Sir Charles had given me a blank cheque, not exceeding two thousand five hundred pounds. I took it to our agents and cashed it for notes of the Bank of France. The curate clasped them with pleasure. And right glad I was to go back to Lucerne that night, feeling that I had got those diamonds into my hands for about a thousand pounds under their real value!

At Lucerne railway station Amelia met me. She was positively agitated.

"Have you bought them, Seymour?" she asked.

"Yes," I answered, producing my spoils in triumph.

"Oh, how dreadful!" she cried, drawing back. "Do you think they're real? Are you sure he hasn't cheated you?"

"Certain of it," I replied, examining them. "No one can take me in in the matter of diamonds. Why on earth should you doubt them?"

"Because I've been talking to Mrs. O'Hagan, at the hotel, and she says there's a well-known trick just like that—she's read of it in a book. A swindler has two sets—one real, one false; and he makes you buy the false ones by showing you the real, and pretending he sells them as a special favor."

"You needn't be alarmed," I answered. "I am a judge of diamonds."

"I shan't be satisfied," Amelia murmured, "till Charles has seen them."

We went up to the hotel. For the first time in her life I saw Amelia really nervous as I handed the stones to Charles to examine. Her doubt was contagious. I half feared, myself, he might break out into a deep monosyllabic interjection, losing his temper in haste, as he often does when things go wrong. But he looked at them with a smile, while I told him the price.

"Eight hundred pounds less than their value," he answered, well satisfied.

"You have no doubt of their reality?" I asked.

"Not the slightest," he replied, gazing at them. "They are genuine stones, precisely the same in quality and type as Amelia's necklet."

Amelia drew a sigh of relief. "I'll go upstairs," she said, slowly, "and bring down my own for you both to compare with them."

One minute later she rushed down again, breathless. Amelia is far from slim, and I never before knew her exert herself so actively.

"Charles, Charles!" she cried, "do you know what dreadful thing has happened? Two of my own stones are gone. He's stolen a couple of diamonds from my necklet, and sold them back to me."

She held out the riviere. It was all too true. Two gems were missing—and these two just fitted the empty places!

A light broke in upon me. I clapped my hand to my head. "By Jove," I exclaimed, "the little curate is—Colonel Clay!"

Charles clapped his own hand to his brow in turn. "And Jessie," he cried, "White Heather—that innocent little Scotchwoman! I often detected a familiar ring in her voice, in spite of the charming Highland accent. Jessie is—Madame Picardet!"

We had absolutely no evidence, but, like the Commissary at Nice, we felt instinctively sure of it.

Sir Charles was determined to catch the rogue. This second deception put him on his mettle. "The worst of the man is," he said, "he has a method. He doesn't go out of his way to cheat us; he makes us go out of ours to be cheated. He lays a trap, and we tumble headlong into it. To-morrow, Sey, we must follow him on to Paris."

Amelia explained to him what Mrs. O'Hagan had said. Charles took it all in at once, with his usual sagacity. "That explains," he said, "why the rascal used this particular trick to draw us on by. If we had suspected him he could have shown the diamonds were real, and so escaped detection. It was a blind to draw us off from the fact of the robbery. He went to Paris to be out of the way when the discovery was made, and to get a clear day's start of us. What a consummate rogue! And to do me twice running!"

"How did he get at my jewel case, though?" Amelia exclaimed.

"That's the question," Charles answered. "You do leave it about so!"

"And why didn't he steal the whole riviere at once, and sell the gems?" I inquired.

"Too cunning," Charles replied. "This was much better business. It isn't easy to dispose of a big thing like that. In the first place, the stones are large and valuable; in the second place, they're well known. Every dealer has heard of the Vandrift riviere, and seen pictures of the shape of them. They're marked gems, so to speak. No, he played a better game—took a couple of them off, and offered them to the only one person on earth who was likely to buy them, without suspicion. Upon my soul, I almost admire the fellow."

For Charles is a business man himself, and can appreciate business capacity in others.

However, we followed him on to Paris, telegraphing beforehand to the Bank of France to stop the notes. It was all in vain. They had been cashed within half an hour of my paying them. The curate and his wife, we found, quitted the Hotel des Deux Mondes for parts unknown that same afternoon. And, as usual with Colonel Clay, they vanished into space, leaving no clue behind them. In other words, they changed their disguise, no doubt, and reappeared somewhere else that night in altered characters. At any rate, no such person as the Reverend Richard Peepoe Brabazon was ever afterwards heard of—and, for the matter of that, no such village exists as Empingham, Northumberland.

We communicated the matter to the Parisian police. They were most unsympathetic. "It is no doubt Colonel Clay," said the official whom we saw; "but you seem to have little just ground of complaint against him. As far as I can see, messieurs, there is not much to choose between you. You, Monsieur le Chevalier, desired to buy diamonds at the price of paste. You, madame, feared you had bought paste at the price of diamonds. You, monsieur the secretary, tried to get the stones from an unsuspecting person for half their value. He took you all in, that brave Colonel Caoutchouc—it was diamonds, not diamonds."

Which was true, no doubt, but by no means consoling.

We returned to the Grand Hotel. Charles was fuming with indignation. "This is really too much," he exclaimed. "What an audacious rascal! But he will never again take me in, my dear Sey. I only hope he'll try it on. I should love to catch him."

III.

THE EPISODE OF THE OLD MASTER.

Like most South Africans, Sir Charles Vandrift is anything but sedentary. He cannot live without moving about freely. Thus it came to pass that in the early autumn we found ourselves stopping at the Metropole at Brighton. We were the accustomed nice little family party—Sir Charles and Amelia, myself and Isabel, with the suite as usual.

On the first Sunday morning after our arrival we strolled out, Charles and I (I regret to say during the hours allotted for divine service), on to the King's Road, to get a whiff of fresh air and a glimpse of the waves that were churning the Channel.

Charles gazed inquiringly up and down the King's Road, on the lookout for a boy with Sunday papers. At last one passed. "Observer," my brother-in-law called out, laconically. "Ain't got none," the boy answered, brandishing his bundle in our faces. "Ave a Referee or a Pink 'Un?"

Charles shook his head, and muttered, "If you pass an Observer, send him on here at once to me."

A polite stranger who sat close to us turned round with a pleasant smile. "Would you allow me to offer you one?" he said, drawing a copy from his pocket. "I fancy I bought the last. There's a run on them to-day, you see. Important news this mornin' from the Transvaal."

Charles raised his eyebrows and accepted it, as I thought, just a trifle grumpily. So, to remove the false impression his surliness might produce on so benevolent a mind, I entered into conversation with the polite stranger. We compared notes as to Nice, Rome, Florence, Cairo. Our new acquaintance had scores of friends in common with us, it seemed; indeed, our circles so largely coincided that I wondered we had never happened till then to knock over against one another.

By this time, however, Charles laid down the paper and chimed into our conversation. I could see at once from his mollified tone that the news from the Transvaal was favorable to his operations in Cloetedorp Golcondas. He was therefore in a friendly and affable temper. His whole manner changed at once. He grew polite in return to the polite stranger. Besides, we knew the man moved in the best society. He had acquaintances whom Amelia was most anxious to secure for her "At Homes" in Mayfair—young Faith, the novelist, and Sir Richard Montrose, the great Arctic traveler. As for the whole lot of them. We exchanged cards before we rose. Our new friend's name turned out to be Dr. Edward Polperro.

"In practice here?" I inquired, though his garb belied it.

"Oh, not medical," he answered. "I am an LL. D., don't you know. I interest myself in art, and buy to some extent for the National Gallery."

The very man for Amelia's "At Homes!" Sir Charles snapped at him instantly. "I've brought my four-in-hand down here with me," he said, in his best friendly manner, "and we think of tooling over to-morrow to Lewes. If you'd care to take a seat I'm sure Lady Vandrift would be charmed to see you."

"You're very kind," the Doctor said, "on so casual an introduction. I'm sure I shall be delighted."

"We start from the Metropole at ten-thirty," Charles went on.

"I shall be there. Good-morning!" And with a satisfied smile, he rose and left us, nodding.

Next day, at ten-thirty, we started on our drive.

Dr. Polperro, in spite of his too pronouncedly artistic talk, proved on closer view a most agreeable companion. He diversified his art cleverly with anecdotes and scandals; he told us exactly which famous painters had married their cooks, and which had only married their models; and otherwise showed himself a most diverting talker. Among other things, however, he happened to mention once that he had recently discovered a genuine Rembrandt—a quite undoubted Rembrandt, which had remained for years in the keeping of a certain obscure Dutch family. It had always been allowed to be a masterpiece of the painter, but it had seldom been seen for the last half century save by a few intimate acquaintances. It was a portrait of one Maria Vanrenen of Haarlem, and he had bought it of her descendants at Gouda, in Holland.

I saw Charles prick up his ears, though he took no open notice. This Maria Vanrenen, as it happened, was a remote collateral ancestress of the Vandrifts, before they emigrated to the Cape in 1780; and the existence of the portrait, though not its whereabouts, was well known in the family. Isabel had often mentioned it, it would be had at anything like a reasonable price. If it was to be had at anything like a reasonable price, it would be a splendid thing for the boys (Sir Charles, I ought to say, has two sons at Eton) to possess an undoubted portrait of an ancestress by Rembrandt.

Dr. Polperro talked a good deal after that about this valuable find. He had tried to sell it at first to the National Gallery, but though the directors admired the work immensely, and admitted its genuineness, they regretted that the funds at their disposal this year did not permit them to acquire so important a canvas at a proper figure.

When we arrived at Lewes we put up our horses at the inn, and Charles ordered a lunch on his wonted scale of princely magnificence. Meanwhile we wandered about, two and two, about the town and castle. I annexed Lady Belleisle, who is at least amusing. Charles drew me aside before starting. "Look here, Sey," he said, "we must be very careful. This man, Polperro, is a chance acquaintance. There's nothing an astute rogue can take one in over more easily than an Old Master. If the Rembrandt is genuine I ought to have it; if it really represents Maria Vanrenen, it's a duty I owe to the boys to buy it. But I've been done twice lately, and I won't be done a third time. We must go to work cautiously."

"You are right," I answered. "No more seers and ourates!"

"If this man's an impostor," Charles went on—"and in spite of what he says about the National Gallery and so forth, we know nothing of him—the story he tells is just the sort of one such a fellow would trump up in a moment to deceive me."

We drove back by another road, overshadowed by beech trees in autumnal gold. It was a delightful excursion. Dr. Polperro's heart was elated by lunch and the excellent dry Monopole. He talked amazingly. I never heard a man with a greater or more varied flow of anecdote. He had been everywhere and knew all about everybody. Amelia booked him at once for her "At Home" on Wednesday week, and he promised to introduce her to several artistic and literary celebrities.

That evening, however, about half-past seven, Charles and I strolled out together on the King's Road for a blow before dinner. We dined at eight. The air was delicious. We passed a small new hotel, very smart and exclusive, with a big bow window. There, in evening dress, lights burning and blind up, sat our friend, Dr. Polperro, with a lady facing him—young, graceful, and pretty. A bottle of champagne stood open before him. He was helping himself plentifully to hot-house grapes, and full of good humor. It was clear he and the lady were occupied in the intense enjoyment of some capital joke, for they looked queerly at one another, and burst now and again into merry peals of laughter.

I drew back. So did Sir Charles. One idea passed at once through both our minds. I murmured, "Colonel Clay!" He answered, "And Madame Picardet!"

They were not in the least like the Reverend Richard and Mrs. Brabazon. But that clinched the matter. Nor did I see a sign of the aquiline nose of the Mexican Seer. Still, I had been by then to discount appearances. If these were indeed the famous sharper and his wife or accomplice, we must be very careful. We were forewarned this time. Supposing he had the audacity to try a third trick of the sort upon us, we had him under our thumbs. Only, we must take steps to prevent his dexterously slipping through our fingers.

"He can wriggle like an eel," said the Commissary at Nice. We both recalled those words, and laid our plans deep to prevent the man's wriggling away from us on this third occasion.

"I tell you what it is, Sey," my brother-in-law said, with impressive slowness, "this time we must deliberately lay ourselves out to be swindled. We must propose of our own accord to buy the picture, making him guarantee it in writing as a genuine Rembrandt, and taking care to tie him down by the most stringent conditions. But we must seem at the same time to be unsuspecting and innocent as babes; we must swallow the whole whatever lies he tells us; pay his price (nominally) by cheque for the portrait; and then, arrest him the moment the bargain is complete, with the proofs of his guilt then and there upon him. Of course, what he'll try to do will be to vanish into thin air at once, as he did at Nice and Paris; but this time we'll have the police in waiting and everything ready. We'll avoid precipitancy, but we'll avoid delay too. We must hold our hands off till he's actually accepted and pocketed the money, and then we must nab him instantly, and walk him off to the local Bow Street. That's my plan of campaign. Meanwhile, we should appear all trustful innocence and confiding guilelessness."

In pursuance of this well-laid scheme, we called next day on Dr. Polperro at his hotel, and were introduced to his wife, a dainty little woman, in whom we affected not to recognize that arch Madame Picardet or that simple White Heather. The Doctor talked charmingly (as usual) about art—what a well-informed rascal he was, to be sure!—and Sir Charles expressed some interest in the supposed Rembrandt. Our new friend was delighted; we could see by his well-suppressed eagerness of tone that he knew us at once for probable purchasers. He would run up to town next day, he said, and bring down the portrait. And in effect, when Charles and I took our wonted places in the Pullman next morning, on our way up to the half-yearly meeting of Cloetedorp Golcondas, there was our Doctor, leaning back in his arm-chair as if the car belonged to him.

Arrived in town, we went to work at once. We set a private detective from Marvillers to watch our friend; and from him we learned that the so-called Doctor dropped in for a picture that day at a dealer's in the West end (I suppress the name, having a judicious fear of the law of libel ever before my eyes)—a dealer who was known to be mixed up before then in several shady or disreputable transactions. Though, to be sure, my experience has been that picture dealers are picture dealers. Anyhow, we found out that our distinguished art critic picked up his Rembrandt at this dealer's shop, and came down with it in his care the same night to Brighton.

In order not to act precipitately, and so ruin our plans, we induced Dr. Polperro (what a cleverly chosen name!) to bring the Rembrandt round to the Metropole for our inspection, and to leave it with us while we got the opinion of an expert from London.

The expert came down and gave us a full report upon the alleged Old Master. In his judgment it was not a Rembrandt at all, but a cunningly-painted and well-begrimed modern Dutch imitation. Moreover, he showed us by documentary evidence that the real portrait of Maria Vanrenen had, as a matter of fact, been brought to England five years before and sold to Sir J. H. Tomlinson, the well-known connoisseur, for eight thousand pounds. Dr. Polperro's picture was, therefore, at best either a replica by Rembrandt, or else, more probably, a copy by a pupil, or, most likely of all, a mere modern forgery.

We were thus well prepared to fasten our charge of criminal conspiracy upon the self-styled Doctor.

Next came the question of price. This was warmly debated for form's sake only. Sir J. H. Tomlinson had paid eight thousand for his genuine Maria. The Doctor demanded ten thousand for his spurious one. There was really no reason why we should higgler and dispute, for Charles meant merely to give his cheque for the sum and then arrest the fellow; but still we thought it best for the avoidance of suspicion to make a show of resistance; and we at last beat him down to nine thousand guineas. For this amount he was to give us a written warranty that the work he sold us was a genuine Rembrandt, that it represented Maria Vanrenen of Haarlem, and that he had bought it direct, without doubt or question, from that good lady's descendants at Gouda, in Holland.

[TO BE CONTINUED.]

Every noble activity makes room for itself.—Emerson.

Who does the best his circumstances allow does well, acts nobly. Angels could do no more.—Young.

He who would influence men must not live so severed from them that he ceases to know and understand them.—Van Oosterzee.



Motto Competition.

I am glad to be able to say that our "motto competition" has been a great success. The number of suitable quotations sent in was quite bewildering. I had to go over them many times before I felt sure which should rank as the best. The three prize-winners have chosen very good quotations, and have written them out beautifully.

The first prize is awarded to Bessie Archibald, Maravilla, Manitoba, for the new commandment our Lord gave to His disciples—"Love one another." Elsie Zavitz, Walnut, Ontario, makes a very good second.

Her motto is:

"We lose what on ourselves we spend,
We have as treasure without end
Whatever, Lord, to Thee we lend."

Try to carry out that motto, Elsie, all through your life, you will find it is very true.

The third prize is awarded to another Elsie, viz., Elsie Evens, Randolph, who has chosen a very good motto, "The Lord will provide."

The following deserve very honorable mention:

Susie Crowe, Colchester, N. S.; Emily Wightman, Maravilla, Man.; Lillie Boyd, Andrews ville, Ont.; Myra Morton, Belhaven, Ont.; Beatrice Kew, Thorold, Ont.; George Lawson, Brampton; Vina Winger, Springvale; Beatrice Wood, Chignecto Mines, N. S.; Edna Morton, Belhaven, Ont.; Wilhelmina Bone, Henrysburg, Que.; Annie McDonald, Nettie Wood (aged only six), John McDonald, Gordon McKinnon, and Charlie Bouser, Chignecto Mines, N. S.; Roy Frink, Napanee; Charles Anderson, Rugby; and Ina Jacobs, Minesing, Ont.

Many others have tried, but these rank the best, although you have all done well, children, and I am proud of you. If you all live up to the very good mottoes you have sent in, the rising generation will certainly be a credit to our dear Canada.

Look out for another competition soon. You can't all win, of course, but never be discouraged at that, "try, try again." I want to especially congratulate the very little ones of six to nine years old. Write to me again soon.

Your loving friend,

COUSIN DOROTHY.

What a Book Said.

Once upon a time a library book was overheard talking to a little boy, who had just borrowed it. The words seemed worth recording, and here they are:

"Please don't handle me with dirty hands. I should feel ashamed to be seen when the next little boy borrowed me.

"Or leave me out in the rain. Books can catch cold, as well as children.

"Or make marks on me with your pen or pencil. It would spoil my looks.

"Or lean on me with your elbows when you are reading me. It hurts.

"Or put in between my leaves a pencil or anything thicker than a single sheet of thin paper. It would strain my back.

"Whenever you are through reading me, if you are afraid of losing your place, don't turn down the corner of my leaves, but have a neat little book-mark to put in where you stopped, and then close me and lay me down on my side, so that I can have a good, comfortable rest.

"Remember that I want to visit a great many other little boys after you are finished with me. Besides, I may meet you again some day; and you would be sorry to see me looking old and torn and soiled. Help me to keep fresh and clean, and I will help you to be happy."

What the Little Shoes Said.

I saw two dusty little shoes
A-standing by the bed;
They suddenly began to talk,
And this is what they said:

"We're just as tired as we can be;
We've been most everywhere;
And now our little master rests—
It really is not fair.

"He's had his bath and sweetly sleeps
Twixt sheets both cool and clean,
While we are left to stand outside—
Now don't you think it mean?

"We carried him from morn till night;
He's quite forgot, that's plain;
While here we watch, and wait and wait
Till morning comes again.

"And then he'll tramp and tramp and tramp
The livelong summer day,
Now this is what we'd like to do:
Just carry him away.

"Where he could never go to bed,
But stay up all the night,
Unwashed and covered over with dust—
Indeed, it would serve him right."

If Juno, King's Co., N.S., will send her full address to FARMER'S ADVOCATE office, prize won in joke contest will be sent.

Winning the Game.

A pleasant and instructive story is told of Paul Morphy, the famous chess player of a generation ago. While visiting a friend in Philadelphia, his attention was drawn to a copy of the celebrated painting representing a game of chess between a young man and the devil, the stake being the young man's soul. The artist had most graphically depicted the point in the game where it was apparently the young man's move, and he seemed just to realize the fact that he had lost the game, the agony of despair being shown in every line of his features and attitude, while the devil, from the opposite side of the table, gloated over him with fiendish delight. The position of the game appeared utterly hopeless for the young man, and Mr. H— said he had often set it up and studied it with his chess friends, and all agreed the young man's game was certainly lost.

Mr. Morphy walked up to the picture and studied it for several minutes, when finally he said: "I can win the game for the young man." His host was, of course, astonished, and said, "Is it possible?" Mr. Morphy replied, "Get out the men and board and let us look at it." The position was set up, and in a few rapid moves he demonstrated a complete win for the young man, and the devil was checkmated.

The story itself is a very simple one, but it carries a moral as broad and deep as human life and happiness.

Occupation for Little Hands.

It is a wise mother who can find occupation for her children that will afford education for them as well as amusement, and yet these little home-makers of the next generation are generally more eager to "help mother" at seven than they are at seven-teen.

Any woman who has done her cooking with "a troublesome comfort" in a high chair at her elbow

"Cowardly Curs Bark the Loudest."

Why Harry, my boy, you don't mean to say
And they hiss just like a snake:
That you from a goose will run!
Come now, brace up! and try
If you can't make them fly.
Cheer up, dear, you're in for some fun.



Oh, yes, I'm aware that their necks are long,
And they hiss just like a snake:
But they're cowards at heart,
And quite ready to start
If you the offensive will take.

Don't run from a foe, it's much the best plan
To make the foe run instead:
So, forget all your fears,
Wipe away all your tears,
Be bold, man, and go right ahead!

C. D.

will testify to the satisfaction with which the chubby hands will cut out cakes from a piece of dough, and the triumph with which they will point out their own when taken from the oven.

Patience, mothers! If you give those little hands to understand that their help is more bother than assistance they will not be as ready to proffer their aid with the cakes by and by, when their help is needed. If we impress upon our children from infancy the idea that each one of them, even the toddler at our knee, has some part to perform in the routine of work, that he is as necessary to the well-being of the household as are father and mother, he will grow up with the sense of his responsibility which will bind him closer to the home. It may be easier now to hang up little Robbie's coat for him and hunt up his mittens than it is to keep a cheerful, patient oversight of the child while teaching him to do it for himself, but will it be easier by and by when Robert is twenty-one?

Little Olga's Dolls.

The person who has derived the liveliest satisfaction from the visit of M. Faure to Russia is assuredly the Czar's little daughter, the Grand Duchess Olga. The blessed word "alliance" is nothing to that child; but the three dolls which the French president brought her as a gift are much. It is said that she is never tired of playing with them; and no wonder, for they are marvelous dolls. They all can speak and say "Bon jour, my dear little mamma," and other compliments; and they can laugh and sing. In addition, moreover, to the elaborate trousseau of dresses which accompanied them in their morocco-leather valise, they have special sets of jewelry—ornaments of real gold and precious stones, with nothing pinchbeck about them.—*Lloyd's Weekly.*

Our Library Table.

"DAVID HARUM." By Thomas Noyes Westcott.—The introduction to this book amply explains its purpose. It says: "One of the most conspicuous characteristics of our contemporary native fiction is an increasing tendency to subordinate plot or story to the bold and realistic portrayal of some of the types of American life and manners." From this it must not be imagined that there is no story; for, on the contrary, there is a very interesting and wholesome love story running through the whole—telling of how a pure love and reverses of fortune transform a somewhat indolent and aimless young man—John Lenox—into a fine character. In a way John Lenox is the hero of the novel—at least the young hero; but it is David and his quaint sayings which really rivet our attention—sayings which will be quoted as are those of Mark Twain, Jerome, and others. The character is so completely worked out, piece by piece, by David Harum's own words of wit and wisdom, that it is difficult in a short notice to give a fair idea of it. Acute, hard-headed, keen at a bargain, this old village banker has accumulated quite a nice little fortune, and by many is regarded as a not over-scrupulous money-seeker. His great hobby is horse-dealing; and in his deals in this direction he is certainly as keen as they make 'em, to use a slang phrase. Still, you discover that in his sharpest deals he generally has some old score to pay back. He sells the "Deakin" a balky horse; but some time before the Deakin has sold him a horse—and here we take his own vernacular: "He done me so brown I was burnt in places, an' you'd smell smoke 'round me fer some time."

"Was it a horse?" asked Mrs. Bixbee (his sister), gratuitously.

"Wa'al," David replied, "mebbe it had ben some time, but at that particular time the only thing to determine the fact was that it wa'n't nothin' else."

This queer old man has some grand rules of life: "Do unto the other feller the way he'd like to do unto you—an' do it fust."

"There's as much human nature in some folks as th' is in others, if not more."

"A reasonable amount o' fleas is good fer a day—keeps him from broodin' over bein' a dog, mebbe."

Although full of this kind of wise wit, David Harum takes a long while to relate a story; and were it not for this same quaint wit, some of his stories might become a trifle wearisome. Still, here is where the type comes in. Think of the men of that stamp one constantly comes across; and as for the fair sex—without any disrespect—the story-relater who "branches off" is too well known to need comment!

In strong contrast to the sharpness of this side of David's character is a large-hearted generosity which is amply shown in his dealing with the widow Cullom, who thinks she must lose her farm after years and years of brave struggle. But no—this hard-hearted (!) old David suddenly explains how her late husband was kind to him when he was a little lad who, at home, was taught to think—

"I was the most all-round no-account animal that was ever made out o' dust, an' wa'n't ever likely to be no different." This late Billy Cullom took David to the circus, gave him a small sum to spend—"An', Mis' Cullom, he took me by the hand, an' he talked to me, an' he gin me the fust notion 't I'd ever had that mebbe I wa'n't only the scum o' the earth, as I'd ben teached to believe." Thus we see that it is not only in a horse-deal that David Harum pays back! The description of the Christmas dinner—and the time when David was once at the country house of a gentleman who had business dealings with him, but whose style of living is very different to our simple, sturdy old friend's—is most amusing. His stanch friendship for John Lenox—as soon as he finds that the young fellow has the real stuff in him—shows David Harum's sterling goodness and fine discernment; and we lay down the book feeling that human nature appreciates such characters, and that the more David Harums we meet the better. Published by William Briggs, Toronto. Bound or paper cover.

"LION, THE MASTIFF." By A. G. Savigny.—A truly beautiful story, told by Lion himself. Any one fond of dogs will feel a special interest in it; and any one not fond of them must surely succumb to the noble fellow here depicted. This book makes a complete companion story to Miss Sewell's "Black Beauty." These two books should be in every library. William Briggs, Toronto, publisher.

FELIX.

Worldly Wisdom.

If thou wouldst conquer thy weakness, thou must never gratify it.

People hunt up their own kind just as naturally as water seeks its level.

Don't expect to move any obstacle without first getting a move on yourself.

Beauty is never more than skin deep; a good deal of it is only clothes deep.

When a young man tells a girl a lot of yarns she isn't to be blamed for giving him the mitten.

Lots of men join a secret society because they think its emblem will show up well on their watch chains.

Age rarely brings wisdom; about the best it can do is to teach us what particular brand of folly we like best.

MINNIE MAY'S DEPARTMENT.

MY DEAR NIECES,—
The Romans used to call the month of June "mensis juniorum"—that is, the month of the young people. I suppose that is why there are so many marriages in June. Perhaps you will find it interesting if we have a talk about marriage customs and superstitions, of which there are many, and some of them are very curious. Almost every incident connected with a marriage, however small that incident might be, was believed to have a meaning, and to be either lucky or unlucky to those who were thinking of matrimony.

While to-day we throw old shoes after a bride and groom for luck or for fun, the custom is really one dating from barbarous times, when a wife was more of a slave than a companion. The shoe was an emblem of authority, and at an Anglo-Saxon marriage a shoe was given by the bride's father to her husband as a token of the transference of power over her.

There are certain months which tradition has fixed as more favorable for marriage than others, May being the most unpropitious month, while June is the best of all. Then certain days in each month are to be avoided. If any of my nieces are meditating this step, let them study the following list of days which are said to be so unlucky as to blight the lives of the truest of lovers:—January 1, 2, 4, 5, 7, 10, 15; February 6, 7, 18; March 1, 6, 8; April 6, 11; May 5, 6, 7; June 7, 15; July 5, 19; August 15, 19; Sept. 6, 7; Oct. 6; November 15, 16; Dec. 15, 16, 17.

But not only must the days of the month be studied: the days of the week are to be carefully considered too. "Monday for health; Tuesday for wealth; Wednesday the best day of all; Thursday for crosses; Friday for losses; Saturday no day at all."

Let not my dear nieces fondly imagine that now their troubles are over, when once the day and month are settled. Oh, no! you must make sure that the full moon will shine to make clear your way; and just here is another warning: "Marry in Lent, and you'll live to repent."

Another old story is that for the lady to "change the name and not the letter" is to "change for the worse and not for the better." Also "to keep her own name is to keep her condition forever the same."

Now for a few words on that most interesting item, the wedding-ring. A writer of the seventeenth century says "it was first designed by Prometheus and fashioned out of adamant iron by Tubal Cain, and that it was given by Adam to his son to this end, that therewith he should espouse a wife." How would you like to wear a ring of this style? Some unscrupulous deceivers used to marry with rings made of rushes, thinking that thus the ceremony would be less binding. However, the Bishop of Salisbury took up the matter, and in 1217 forbade the practice. The wedding-ring used to be made of silver, and when gold became fashionable, as it was so expensive, a shrewd jeweler made his fortune by lending, for a fee, gold rings to poor couples for their wedding-day.

We are indebted to Denmark for the bridal favor and the true-lover's knot. This knot derived its name from "true-lofa," which means, "I plight my troth."

Again, here are a few hints to the bride if she would be happy. On no account must she open an umbrella in the house, although she knows that the mischievous bridesmaids have shaken rice into it. She must for her own sake provide all the rice and old slippers possible. A horseshoe and a wishbone must find a place among the flowers beneath which the ceremony is to take place, and every bride knows she must wear "something old and something new: something borrowed and something blue."

The word "wedding" is from the Anglo-Saxon "wed," which means a *pledge*. This pledge or security used to be given by the bridegroom at the betrothal.

But in spite of all these old-time beliefs and customs and warnings, marriages are as numerous as ever, and will, I suppose, continue so to be. Do not allow these superstitions to make you afraid or keep you back if you contemplate having a home of your own. We flatter ourselves that our present-day ideas are far above such foolish superstitions, and we laugh at them and enjoy them as old-time oddities, though sometimes we do meet with people who believe in them. May all my nieces be happy throughout their lives, whether they marry or not, and remember through it all that all things work together for their good.

Your loving old Auntie,
MINNIE MAY.

"Yes, my hands are soft," said a conceited young fellow, the other night in a small company, as he admiringly looked at those useless appendages that had never done a day's work. "Do you know how I do it?" he exclaimed proudly. "I wear gloves on my hands every night to sleep in." "Do you sleep with your hat on also?" asked a pert young woman. And the young fellow replied in the negative, and looked wonderingly because the company smiled.

"Sunday Morning."

What a peaceful home scene! These two old people have that look of content and resignation one often sees in the faces of the aged. Their own life of Spring, Summer and Autumn is over, and their Winter is upon them; but we can see that it is full of that peace which the world cannot give. One might speculate on that far-off look in the dear old woman's eyes, from which the glasses are pushed up—(how often you see that!) It may be complete absorption in the Holy Words which are being read; but we wonder whether her mind is not also wandering to some far, far away son or daughter—perhaps at the other end of the world; or she may be thinking of a dear little one whom God once took away. We cannot say. Possibly all her memories may be of happiness, although but few are so blessed. The old man—reading without spectacles too—is very natural, and one can imagine the devout, and perhaps a trifle halting, way in which he is reading the Word. The rest of the family—married son, wife and the children—must be at church, and will presently return with a loving greeting for Grandma and Grandpa, now too feeble for more than their own simple service at home—seated in their cozy chairs, loved and honored and cared for by those for whom they have worked and struggled. One can well fancy this tender old husband quivering out the old verse—

"Tis forty years this very day,
Since you and I, old girl, were married."

But I rather fancy *forty* years would not in this case cover the ground, and that our interesting Darby and Joan here are far nearer to their *diamond* wedding than that!

We have had pictures of childhood, of coming of age, of happy courtship and honeymoons, but from none can we learn more than from this one so faithfully depicting a beautiful life's Winter upon which Content and Peace have set an unfading crown.



"SUNDAY MORNING."

Recipes.

STRAWBERRY ICE CREAM.

One quart of cream, one pound of sugar, one and one-half quarts of strawberries.

Put half the sugar and cream on to boil in a granite kettle, and when the sugar is dissolved, stand aside to cool. Add the remaining half of the sugar to the berries and the cream. Mash the fruit well. Mix all together and freeze as usual.

STRAWBERRY SHORTCAKE.

Into a pint of flour sift two teaspoonfuls of B. P. and half a teaspoonful of salt. Rub $\frac{1}{4}$ of a cup of butter through the flour till all the lumps have disappeared. Now add gradually sufficient sweet milk to make it a soft, spongy consistency—about one cupful will be required. Divide in two portions for the two layers of the cake. Turn out on a well-floured board, and after rolling with the rolling-pin fit into the tin to be baked; moisten the surface with melted butter; prepare the second layer in same way. Bake in rather a hot oven half an hour. Have the fruit ready prepared with sugar, split the cake, butter lightly with soft butter, and put in your fruit. To be eaten with cream.

LEMON SYRUP.

Two ozs. citric acid, two ozs. tartaric acid, half oz. Epsom salts, five lbs. white sugar, three pints boiling water, juice and grated rind of four lemons. Mix well together the sugar, salts and acids *dry* in a granite kettle or other convenient vessel. Pour on them the boiling water; add the juice and grated rind of the lemons. When all is dissolved and quite cold, stir in the well-beaten whites of two eggs and the juice of two more lemons. Strain (through muslin is best, as it clears better from white of egg) and bottle. This is a most convenient way of having really nice lemonade always handy, and in this warm weather will be found very acceptable. This is a tested recipe. It takes from one to two tablespoonfuls to make a glass.

To Brighten Furniture, Brass and Steel.

It is not such drudgery as the words imply to "polish, polish, polish," like Turveydrop of old, if the ever-famous elbow grease be supplemented by efficient help.

We all know that the wood of a piano case always seems to have a brighter polish than other furniture, and with this fact in mind, a famous housekeeper possessed with Turveydrop's mania, made bold to ask a dealer in musical instruments the secret of the mirror-like glossiness of his wares. His reply was too practical and useful to be kept for the use of one household, and is given for our readers' benefit, with the assurance that it may be used on the most rare and costly wood, not only without fear of injury but as a preservative. It is made as follows: To four tablespoonfuls of sweet oil add four of turpentine, a teaspoonful of lemon juice, and ten drops of household ammonia. Shake well and it is ready. Care must be taken also to shake each time just before using.

The proper application of this polish is important to insure magical results, and two or three cloths are absolutely necessary. Cheese cloth is excellent and also soft silk handkerchiefs and bits of fine flannel. Apply with No. 1 until the wood seems to have absorbed some of the mixture, then rub briskly with No. 2, and finish off with No. 3.

A few drops of violet scent added to the polish will do away with the odor of turpentine, which is disliked by some people.

The spring sunshine has a way of bringing to light lurking spots in our garments and household goods, and brass and steel ornaments and fittings or furniture that passed muster in the dim religious light of a shaded summer room may no longer be winked at. Armed with the homemade furniture polish, an hour or two will transform the chairs and tables, and if there are brass knobs or handles one has but to ask at the nearest house furnishing store for the liquid used on steamboat fittings to see oneself reflected in brightness.

The most unresponsive metal for a housekeeper to attack is steel. Rub and polish as one will, unless a certain secret be known, there is still the dull look, and the hardware dealer will only advise the expensive expedient of sending the steely article to be ground at the factory. The old-fashioned knife brick, however, will work wonders here by simply buying it powdered, mixing with sweet oil, and rubbing on freely. Allow this to dry on, then polish briskly and finish off with emery powder.—Emily Ford.

Worth Remembering.

A coffee pot should be thoroughly washed, scalded and dried every day.

The best carver will let the knife slip sometimes, unless it is kept very sharp.

The great point in cooking a potato, by whatever method, is to know when it is done.

To give a fine flavor to corned-beef hash use good soup stock for moistening, with a pinch of salt, sugar and cayenne.

The resistance of glass jars that refuse to open can be overcome by setting them, top downward, in 1 or 2 inches hot water.

To give an appetizing flavor to broiled beefsteak, cut an onion in half and rub it over the hot platter with the melted butter.

Alum is excellent for the gums and teeth.

A full meal should never be eaten when bodily exhausted.

The very prettiest wild flowers grow on the poorest ground.

To Remove Acid Stains from Cloth.—Use liquid ammonia on small piece of flannel: rub stain gently.

To Drive Away Mice.—Powdered camphor placed in the haunts of mice will drive them away, as they dislike the smell.

A hot bath, if taken frequently, will keep the skin in an excellent condition, and is also an unfailing cure for weariness.

A foul breath may be sweetened by a simple mouth-wash of crystal permanganate of potash, in a tumblerful of water.

To Seal Letters Safely.—A letter fastened with the white of an egg can not be opened by the steam of boiling water like ordinary gum. The heat of the steam only adds to its firmness.

A Good Tonic for the Hair.—Five grains sulphate of quinine, 1 dram tincture of cantharides, $\frac{1}{4}$ ounce bay rum, 2 drams glycerine, water to 3 ounces. Mix thoroughly, and shake the bottle before using.

After using an umbrella on a wet day never leave it open to dry, as it causes the silk to crack; but stand the umbrella with the handle downward in a tin bath to drain, and when nearly dry open for a few minutes.

To Remove Mildew on the Vine and Other Plants.—Finely powdered sulphur sprinkled over the leaves and wood of the vine effectually destroys mildew, and that without fire in the greenhouse. The same means has cured the hop mildew.

When decanters are stained with port wine they should be cleansed with a wineglassful of warm water, to which has been added a large teaspoonful of oxalic acid, which, remember, is deadly poison, so that no particle must remain in the decanter; shake the bottle well, then rinse in clean lukewarm water.

THE QUIET HOUR.

Giving—A Duty and a Privilege.

"Give, and it shall be given unto you; good measure, pressed down and shaken together and running over, shall men give into your bosom. For with the same measure that ye mete withal it shall be measured to you again."

Nowadays we seem to have almost lost the idea of giving as a privilege, or even as a duty. Of course there are endless demands for money in the name of charity, and everybody is expected to contribute—either grumblingly or cheerfully—to some of them at least. But giving as a principle is something different from that. If that were all, then; if there were no poor people and no church to support, we should not need to give anything. Was not Noah in that position, rather, when he came out of the ark? But he seemed to feel that he owed a debt of gratitude to God, and could not rest satisfied until he had presented a most costly offering. Think how valuable each animal was, when there were so few left alive; still he did not hesitate, but "took of every clean beast, and of every clean fowl, and offered burnt offerings on the altar." Would not many practical philanthropists of this utilitarian age murmur under their breath, "to what purpose is this waste?" It might seem to many kindly, generous people as though the costly ointment poured out like water at the feet of Christ might better have been "sold for much and given to the poor." They understand the practical use of gifts when they benefit somebody; but when they are only the outpourings of love and gratitude, given with reckless lavishness, they seem to them like extravagant waste. They do not understand the spirit of loving loyalty which made David's mighty men risk their lives gladly, only to get him the water that he longed for from the well of Bethlehem. Yet, surely the gifts of love are dear to our Heavenly Father, for the precious ointment was gratefully received by the Master.

But let us look into this matter of giving as an abstract duty, whether anyone needs our help or not. God requires a percentage of our money as He does of our time. If He did not, we might soon imagine that it belonged entirely to ourselves—to be disposed of exactly as we chose. We are stewards, not owners, and God expects us to pay a certain proportion of our income to Him as our Master and rightful Lord. He owns the whole earth and does not need our silver and gold; but that does not alter the fact that He requires it. From the very earliest days, men have understood this. Both Cain and Abel brought offerings. Why was Cain's rejected? The prophet's warning surely applied in his case, the warning reiterated over and over again, that God will not accept oblations, burnt offerings, sacrifices, prayers, from those who are wilfully bent on wickedness; "the sacrifice of the wicked is an abomination to the Lord."

God has always required offerings from His people. From the Jews He asked a tenth, besides free-will offerings and thank-offerings of all kinds, and shall we Christians be satisfied to give less? Certainly God is our Father, and is neither harsh nor tyrannical. He has shown us that sometimes the Sabbath rest may be broken; and sometimes, too, it may be impossible to pay the tithe, for "if any provide not for his own . . . he hath denied the faith and is worse than an infidel."

But, whenever it is possible, let no one neglect to pay this debt, and let no one be afraid of losing by it. Listen to the words of promise: "Bring ye all the tithes into the storehouse, that there may be meat in Mine house, and prove Me now herewith, saith the Lord of Hosts, if I will not open you the windows of heaven, and pour you out a blessing, that there shall not be room enough to receive it. And I will rebuke the devourer for your sakes, and he shall not destroy the fruits of your ground."

What an anxious time this is for farmers; so much depends upon the weather, and God only can control that. He has promised to do His part if only you will trust Him. The queen of Sheba presented rich gifts to Solomon, and in return he gave unto her "all her desire, whatsoever she asked, besides that which Solomon gave her of his royal bounty." Did she lose by her liberality? Cannot we trust to the royal bounty of the King of kings?

The wise men made a long and tedious journey that they might present their treasures to the infant Saviour. Shall we, who owe so much to Him, always come before Him empty-handed? Shall we be always crying "give, give?" If our religion is only a matter of praying for gifts, it will do us more harm than good. We shall grow more and more selfish and hard. It is not getting, but giving, that makes men rich with the true riches of joy and gladness.

"For the heart grows rich in giving; all its wealth is living grain; Seeds (which mildew in the garner) scattered, fill with gold the plain."

No one knows better than you farmers that grain stored up year after year, and never scattered with a generous hand, has no power of increase. You live in the midst of God's own parables; see that you read them and act on them. Remember that as it is with your grain so it is with money, love, kindness, and everything else. He that soweth sparingly shall reap also sparingly; and he that soweth bountifully shall reap also bountifully. Every man according as he purposeth in his heart, so let him give not grudgingly or of necessity; for God loveth a cheerful giver."

One thing more: God's money should be laid aside regularly and methodically. Don't wait until you have bought everything you can possibly want, and then give a little of what is left to Him. The first fruits should be His, not the last fruits. St. Paul's rule is a good one—"Upon the first day of the week let every one of you lay by him in store, as God hath prospered him, that there be no gatherings when I come." If we always have God's money laid aside ready for use, then when a sudden call comes, it will never be met grudgingly.

"God being so great, great gifts most willingly imparts; But we continue poor, that have such narrow hearts." —Hope.

Puzzles.

[The following prizes are offered every quarter, beginning with months of April, July and October: For answers to puzzles during each quarter—1st prize, \$1.50; 2nd, \$1.00; 3rd, 75c. For original puzzles—1st, \$1.00; 2nd, 75c.; 3rd, 50c.]

This column is open to all who comply with the following rules: Puzzles must be original—that is, must not be copied from other papers; they must be written on one side only of paper, and sender's name signed to each puzzle; answers must accompany all original puzzles (preferably on separate paper). It is not necessary to write out puzzles to which you send answers—the number of puzzle and date of issue is sufficient. Partial answers will receive credit. Work intended for first issue of any month should reach Pakenham not later than the 15th of the month previous; that for second issue not later than the 5th of that month. Leave envelope open, mark "Printer's Copy" in one corner, and letter will come for one cent. Address all work to Miss Ada Armand, Pakenham Ont.]

1—RHOMBOID.

Across.—1, Relating to nativity; 2, point directly opposite the zenith; 3, titles; 4, food; 5, a common surname.

Down.—1, A letter; 2, an article; 3, brown; 4, our father; 5, fruits; 6, 20 quires; 7, a pen for swine; 8, street; 9, a letter. "DICKENS."

2—RIDDLE.

A word of letters four
I sound most fatally;
But when you know my form,
An oven is all you see. M. N.

3—SQUARE.

1, An animal of South America; 2, afterwards; 3, a geography; 4, flesh, and an interjection; 5, a crime. M. N.

4—SUBTRACTION AND ADDITION.

From a portion take skill.
From amusement take to give.
From a collection take a biped.
From a stopping-place take a farm implement.
From the evidence of sorrow take very small.
From a definite article take a pronoun.
From the name of anything take a secluded female.
Take one from nothing at all.
The remainders added is where I reside. E. C. M. G.

5—TRIPLE ACROSTIC.

1, A second time; 2, a substance found in the mother-of-pearl; 3, a soldier; 4, a tropical tree; 5, excessively watchful; 6, a village in New Brunswick; 7, a period of time (trans.); 8, a French weight; 9, a village in Iowa; 10, a robe worn by Roman ladies; 11, a lake in Switzerland. Primals and finals read up will name three of the most famous writers of the present day. "ARRY 'AWKINS."

6—DOUBLE ACROSTIC.

1, A river in Italy; 2, at no time; 3, a kind of monkey; 4, a covering for the floor; 5, a silver coin of Persia; 6, a claw; 7, a European river; 8, to live. Primals and finals will tell what all puzzlers should be to be popular. "ARRY 'AWKINS."

7—DROP LETTER.

(1) -a-i-, a country in S. America.
(2) M-r-, a city in Spain.
(3) -i-a-t-r-, a strong fortress.
(4) M-i-l-, a popular American.
(5) -a-e-, a noted traveler.
(6) -d-t-an-n-, a large sea. CHARLES ROTH.

8—CHARADE.

While out one day, my second spied,
My first I saw him do,
To catch him was of no avail—
He seemed as though he flew.
My whole's a game oft played by boys,
It's amusing to one's mind;
Now put your heads together, pray,
And my puzzle you will find. NINITA GILES.

9—A BEVY OF BIRDS.

What bird is a "bar of iron?"
" " " "horse disease?"
" " " "piece of cloth?"
" " " "country in Asia?"
" " " "river in Ontario?"
" " " "Canadian lake?"
" " " "musical instrument?"
" " " "is in our throats?"
What bird "should we all strive to retain?" "DICKENS."

10—FOUND IN THE ZOO (PHONETIC).

What animal is part of a chain?
" " " "dark?"
" " " "a mimic?"
" " " "to hunt?"
" " " "found on the head?"
" " " "ever twice?"
" " " "naked?"
" " " "expensive?"
" " " "a gay, dashing fellow?"
" " " "an emblem?"
" " " "laziness?"
" " " "fresh?" "ARRY 'AWKINS."

11—TRANSPOSITION.

Eth tobas fo ladyherr het mopp fo rowep,
Dan lal aht yeutab la tha tealhw reo vage,
Twad aklie het ventilaibe noh:
Eth tapsh fo ogyrl deal tub of het ervag. M. A. A.

12—DROP-LETTER PUZZLE.

(1) A-m-k-, an island in Hudson Bay.
(2) M-s-w-, a city in Russia.
(3) Y-n-a-y-a-, a lake in Africa.
(4) F-l-l-d-, a group of islands near S. America.
(5) D-u-h-n-, a lake in Manitoba.
(6) G-t-m-l-, a city in Central America. FRANK E. WAGG.

13—DOUBLE LIPOGRAM.

To-ss-il-w-ri-d-m-n-w-r-sh-m-
-nd-str-ng-r-is-holy-n-m-;
Guid-nc-nd-r-st-nd-food-nd-flr-
In-v-h-n-v-r-m-y-r-quir. M. N.

14—CHARADE.

You can visit my first if you feel very dry,
My second you'll want when you're lonely and old;
For my third when at dinner quite often you sigh,
And are filled with delight if my whole you behold.
"BUTTERCUP."

Answers to May 20th Puzzles.

1—Oriole. 2—Pakenham.
3—Patti, Melba, Terry. 4—Last, salt, slat.
5—(1) Furlong; (2) salam—m, alas!; (3) st-age (saint age); (4) taper—tapir.

6—May, the month of song and story,
Singing birds and fairest flowers;
May, the month of nature's glory,
Sunshine bright and gentle showers.

7—Illustration was wrong—no answer could be obtained.

8-g y v e 9- o
y i e l d a s h
v e n e e r o s i e r
e l e g i a c h e r o n
d e i g n r o b i n
r a n n i t e r
c n e g u s
 r u p e e
 s e e
 e

10-55-56. 11—Humorous Contest.

12—enact
nitre
atlas
craft
testy

13—Canary, wood-pecker (not very good, "Dickens"), partridge, guinea, cat, cherry, king, gull, diver, loon, tern (turn), swift, snow, crane, parrot, crow.

SOLVERS TO MAY 20TH PUZZLES.

Lizzie Conner, "Artry 'Awkins," M. R. G.

ADDITIONAL SOLVERS TO MAY 5TH PUZZLES.

Lizzie Conner, M. N., Emma H. Humble.

COUSINLY CHAT.

The puzzle said to have been copied was No. 8 in April 20th issue—not in May 1st issue, as before stated. More than one drew my attention to the fact that this puzzle was an old one.

F. J. M.—I thought "perplexed" was somewhat overdrawn, but let it pass, as it was from a new contributor, and then, too, it is customary in puzzling to allow considerable latitude and not adhere strictly to the letters of such a word. A frequent cause of mistakes is the illegibility of the writing. I assure you some of that is a greater puzzle than many that appear as such in our Corner. I shall try to guard against such errors in future, but at the same time I give the solvers credit (in fact, their answers prove it) for having ingenuity enough to surmount the difficulties mentioned.

We are glad to welcome several new cousins this issue, viz.: E. C. M. G., Ninita G., Charles R., and Emma H. We trust they will all find sufficient pleasure in our Corner to cause them to remain with us.

"Dickens."—There must have been some mistake made, but I shall attend to it at once.
"Dick," "Toledo," "Ogma."—Have you entirely deserted us? I have not heard from you recently, and the Corner misses you.

Buttercup.—Of course we excuse your mistake, having heard your explanation. You are not the first who has misunderstood our rules. Be sure to sign your name to every puzzle, and send your work a little earlier, please. A. A.

Did You Ever Think?

That a kind word put out at interest brings back an enormous percentage of love and appreciation?

That though a loving thought may not seem to be appreciated, it has yet made you better and braver because of it?

That the little acts of kindness and thoughtfulness day by day are really greater than one immense act of goodness once a year?

That to be always polite to the people at home is not only more ladylike, but more refined, than having "company manners"?

That to judge a man by his personal appearance stamps you as not only ignorant, but vulgar?

That to talk, and talk, and talk, about yourself and your belongings is very tiresome for the people who listen?

Household Hints.

A pinch of salt added to the whites of eggs makes them whip more easily.

The addition of a little vinegar to the water in which whitefish is boiled keeps it firm and a good color.

Hiccoughs may be cured by pulling the tongue several times a minute, keeping it outside the mouth, and then letting it slip back again.

Tansy is a sure preventive for moths. Sprinkle the leaves freely about your woollens and furs, and the moths will never get into them.

"Hello, Smith! Suppose a man marries his wife's step-sister's aunt, what relation is he to her?"
"First wife—um—step-aunt—er—let's see—I don't know." "Bright fellow. He's her husband."

A man meeting an acquaintance, said, "I heard you were dead!" "But," said the other, "you see me alive." "I do not know how that may be," he replied, "but you are a notorious liar, and my informant is a truthful man."



AT SCOTT'S

During Exhibition Week!

Specially reduced prices will prevail. You want to make up your mind to buy furniture then, as the opportunity won't be repeated till 1900.

A Tremendous Stock at Positively Saving Prices.

SOME OF THE THINGS WE SELL:

- Iron Beds, Baby Carriages,
- School Desks, Office Furniture,
- Children's Waggons and Velocipedes, and everything that should be seen in a modern large furniture store.

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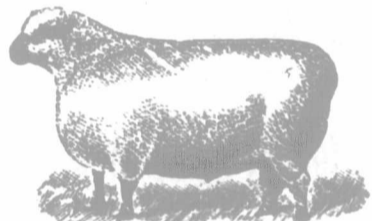
SCOTT FURNITURE COMPANY,
WINNIPEG, - MANITOBA.
Largest Dealers in Western Canada.

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IMPORTER OF
Clydesdales, Shires, Hackneys.

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.**

SHORTHORNS



Will sell the yearling bull Lord Lossie 22nd = 29271 =, sired by the celebrated prizewinner Caithness. This young bull is red in color, and of extra merit. Fit to head any herd of Shorthorns. Also a few **IMP. LARGE YORKSHIRES** FOR SALE.

JAMES BRAY, LONGBURN, MAN.

12 YOUNG BULLS

of Missie, Mina, Rosebud, Strathallan, Wimple, and other choice Scotch breeding. Also, females at moderate prices.

W. S. LISTER,
MIDDLELEIGH, MAN.

Marchmont Stock Farm, near Winnipeg, Man.

D. FRASER & SONS,

EMERSON, MAN..
Breeder and importer of Durham Cattle, Shropshire and Southdown Sheep, and Pure-bred Poland-China Pigs a specialty. Young stock for sale. 9-y-m

SHORTHORNS

STOCK FOR SALE. WRITE OR CALL ON

J. H. KINNEAR, SOURIS, MAN.

SHORTHORNS. My stock bull, Royal Duke = 24640 =; six other bulls, varying in ages; five heifer calves. Will sell at reasonable figures, to make room for winter. Write **R. McLENNAN, MORAPANO, MAN.**

Shorthorn Cows and Heifers for Sale

Of good breeding. Prices right.

GEORGE RANKIN, HAMOTA, MAN.
"Melrose Stock Farm."

SIX JERSEY BULLS FOR SALE

Of high-class breeding. Also Cows and Heifers.

Write **William Murray, Dugald, Man.**

GOSSIP.

The condition of the range cattle this spring in the Medicine Hat stock district was again shown in a marked degree last week by the shipment of a carload of fat beef off the prairie grass from Medicine Hat to British Columbia. The animals were purchased from Messrs. Hooper & Huckle's ranch at Many Berries Creek, and consigned to R. Smith, Cranbrook, B. C.

A shipment of very fine horses was made from Medicine Hat on the 23rd inst., by Mr. Jas. Peirce, of Prairie Island Ranch, Medicine Hat. The shipment consisted of 13 head of Cleveland Bays and English Coach horses, and one team of Percherons, one half bred. They averaged 16.2 in height and over 1,400 lbs. in weight. Nineteen three-year-olds and one four-year-old, and except the Percheron team, there was not a white hair in the shipment. Other shipments will follow.

THE PIONEER HERD.

Any lover of good stock would feel well repaid by a visit to the home of Walter Lynch, Westbourne, the pioneer Shorthorn breeder of Western Canada, whose herd has now been established for over a quarter of a century. Mr. Lynch has no large modern barns, but provides for the comfort and welfare of his favorites in old-fashioned stabling, looking well to the ventilation and feeding with a generous and judicious hand. The herd, now numbering some sixty or seventy head, have been bred on the farm, no females having been added for many years; bulls having been selected for use in the herd from the foremost breeders of Ontario, the last importation being that noble bull Village Hero = 14342 =, by Prince Albert = 3699 =, out of Village Blossom (Imp.), that has proved himself a sire of the highest excellence. He is one of the big, massive sort, with length, breadth and depth, deeply fleshed, and handling with that rich, mellow, elastic "touch" indicative of good feeding qualities. He is a bull of great constitutional vigor, a sure and impressive sire. If there is one thing more than another that impresses a visitor it is the general appearance of vigor and usefulness of the massive old man, that have contributed so much to the upbuilding of this pioneer herd. Calves, of course, come at all seasons of the year, but there were about twenty lusty youngsters from babies to big, sappy fellows six and seven months old, partaking of the maternal nourishment as we drove into the yards at the close of a fine growing day early in June. Space will not permit a review of all the good things. We cannot leave the subject, however, without a word regarding one or two of the calves which are particularly captivating.

Brownie is a big, sappy bull calf, red with white markings, sired by the three-year-old What-For-No, raised by Mr. Lynch, and recently sold to head the herd being established by C. C. Castle, at Foxton. Brownie is like his sire, very lengthy, low and level, has a wonderful coat of mossy hair, and promises to be a bull of extra merit. His dam is Water Witch = 15796 =, by Sismet = 7573 =. Another fine young roan bull full of promise is by Village Hero, out of Rebecca 2nd = 22114 =, by Duke of Colonus = 6837 =, out of Rebecca, by Silverskin. But one of the most interesting sights is the twin calves of the roan cow Monique = 19778 =, by Duke of Colonus, dam Silver Gem, by Silverskin. They are bull and heifer, both well grown, good, thick, level ones, but the heifer is particularly sweet and captivating. She is a heifer at the shows next month.

OAK GROVE FARM.

Jas. Bray is not only a lover of good stock, be they horses, cattle, sheep or swine, but he is a good farmer, and what is more, he has a good farm. At the time of our visit everything was looking well, and pointed to a record crop; 480 acres are in wheat, 80 of which is on timothy sod, and another 80 is seeded with timothy seed. All the seed was carefully selected from the best wheat grown on the farm last year, which was on timothy sod. In oats, there are 100 acres, with about 65 in barley, most of the latter being well manured before plowing for barley. This system Mr. Bray finds serves to free the land from weeds, as the land is plowed late, allowing most surface seeds to germinate before being turned under, and then the barley ripens early and is harvested before the weeds ripen. The manure seems to benefit the barley, and land thus treated gives good results with wheat. Broome grass is also being tested, and a few acres are devoted to corn and oats.

The Shorthorns selected by Mr. Bray while in Ontario last winter, to form the nucleus of a herd, are a nice, smooth, even, useful lot, and can hardly help being a profitable investment. Among them the dark red, blocky heifer, Maiden Star; a light red of similar type, Portage Belle; a red roan daughter of the show bull Caithness, Lovely Queen 2nd; Crimson Gem 5th, a red, a square, thick, low-set young cow, by imported Clan Campbell, with a red-roan calf at foot by Duke of Gloster; Minnie Warrior, another red daughter of the imp. Clan Campbell, with a beautiful red heifer calf by Duke of Gloster, and a number of other nice things. Three of the heifers are in calf to the imported bull, Knuckle Duster, now at the head of A. W. Smith's herd. The young bull, Lord Lossie 22nd = 29271 =, is at the head of the herd, but as the females are now all safe in calf, Mr. Bray would sell this bull. He is bred by A. W. Smith, of Maple Lodge, sired by Caithness, out of Lovely Queen 16th, she by British Flag, the granddam by Conqueror. He is a red, of good length, level and smooth, in fine condition, and is now about a year and a half old.

In Yorkshires, there are a number of excellent brood sows, and still a few young boars and sows to sell. Two young boars were brought in last winter — one from J. E. Brethour's, of Burford, and one from H. J. Davis, of Woodstock.

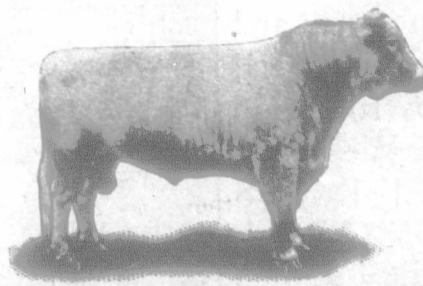
Mr. Bray is also breeding some fine horses. His clean-legged, lighter mares he has bred to Dr. Rutherford's Thoroughbred Kilburn, and has from this horse some fine, upstanding drivers.

"Prairie Home Stock Farm"

BULLS AT HEAD OF HERD:

JUDGE = 23419 = AND IMP. JUBILEE = 28858 =.

SHORTHORN
AND
AYRSHIRE
CATTLE.



YORKSHIRE
AND
BERKSHIRE
SWINE.

SHROPSHIRE SHEEP.

A carload of Bulls suitable for Northwest Territories for sale. Orders booked for spring pigs. Berkshires, by the great boar, King Clere, 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.**

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PREVENTIVE
REMEDY.

Write for reports covering treatment of nearly one million head in the United States and Canada.

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SHORTHORNS! SHORTHORNS!!

I have six young females for sale—three are in calf and three old enough to be bred. These heifers have four or more crosses of the finest Booth sires, on imported Marr and Gordon Castle foundation, a desirable and needed line of breeding.

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FOR SALE:

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

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Big Island Farm, **BOBCAYGEON, ONT.**

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J. E. MARPLES,

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HEREFORDS

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.

Galloway Cattle.

Apply to **T. M. CAMPBELL, Manager.**

STEEL BROS., Glenboro, Manitoba,

BREEDERS OF **Ayrshire Cattle.**

Choice young stock for sale. 24-2-y-m

Scotch Collie Dogs

WE have two grand litters of Collie Pups for sale at \$10 each. They are workers, and from prizewinners. Also Fox Terrier Pups. Try one, they will clear your farm of gophers. Won all the firsts at the Winnipeg Industrial in 1898.

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THE GOLD STANDARD HERD



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.

J. C. & A. W. FLEMING,
Rosebank Stock Farm, Pilot Mound, Man.,
Breeder of Poland-China pigs and Cotswold sheep of choice quality, offer select seed potatoes of eighty varieties. Write for catalogue.

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Young Rams and Ewes for sale. Write or call on **A. D. GAMLEY,**

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MY Bronze Turkeys, Toulouse Geese, Pekin Ducks, Wyandottes and Plymouth Rocks are breeds best adapted to our climate. They are the very best acclimated stock; have won prizes in all leading exhibitions. Eggs at lowest rates. Write for large, free, illustrated catalogue. If you are in a hurry, send along the cash and I will ship you full value.

M. Maw, Winnipeg, Manitoba.

FORT ROUGE POULTRY YARDS.

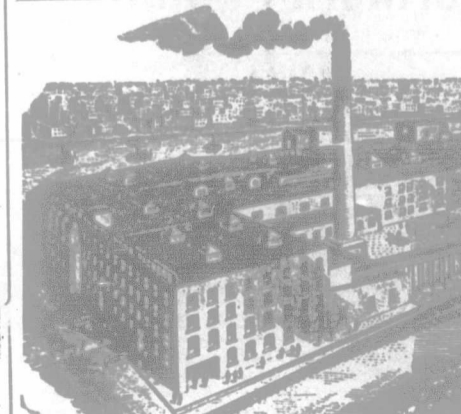
EGGS FOR HATCHING from high-class Golden Wyandottes, Langshans, Plymouth Rocks, Indian Games, Pyle Leghorns, White Wyandottes. \$2 per 15 eggs, or \$3 for 30.
Pekin Ducks and Pearl Guineas, \$1 per 13.
Bronze Turkeys, \$2 for 10 eggs.
A few choice birds for sale; also Belgian Hares and Fancy Pigeons. Write for circular. Address,

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MINORCAS, B.

Eggs from first-class prizewinners, \$1 per setting after June 15. Young stock for sale. Satisfaction guaranteed.

A. M. ROBERTSON, KELOWATIN, ONT.



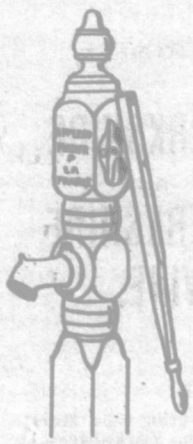
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GIVEN AWAY!

CUT OUT THIS COUPON AND PRESENT IT WHEN YOU BUY \$2 WORTH OF OUR GOODS DURING EXHIBITION WEEK, AND YOU WILL GET FREE A GOOD FOUNTAIN PEN.

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It Means Money!

In the cattleman's pocket to know that he can save an animal with Lump Jaw.

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Is guaranteed to cure Lump Jaw in cattle. It never has failed, and if it should we will return your money.

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MORRIS-BRANDON BRANCH.

Morris, Roland, Miami, Baldur, Belmont, Wawanesa, Brandon. Also Souris River Branch, Belmont to Elgin.

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CHAS. S. FEE, H. SWINFORD,
G. P. & T. A., General Agent,
St. Paul, Portage Ave., Winnipeg.

GOSSIP.

J. S. Robson, Manitou, writes: "I sold eleven bull calves and three heifers of last year's crop. Mr. James Yule states that the bull calf, Royal Judge, which I bought last fall to be delivered when weaned, is doing well. My stock bull, Bismarck, promises to make a fine large bull of the beefing type."

R. McKenzie, High Bluff, writes under recent date advising us of the importation of a very promising young Berkshire sow, Artful Belle, from the celebrated herd of N. H. Gentry, of Mo. Mr. McKenzie says their pigs are doing finely, and adds the following list of recent sales: A pair of Berkshires to each of the following: H. Anderson, Edmonton; W. Wingrove, St. Albert, Alta; F. W. Bull, Yorkton, Assa; Geo. Vincent, Brandon, Man. Three pigs to T. Beech, Valley River, Man. A boar pig to each of the following: A. Chambers, Wawanesa; O. Bartlett, Portage la Prairie; H. I. Stillborn, Wolsley, Assa; T. Chilton, Hillburn. And a yearling Holstein heifer to W. Hume, Saitcoats. This heifer is out of that grand old cow Vida Rooker (Imp.), and sired by the old show bull Emperor of Canada. This is Mr. Hume's second purchase, he having bought a young heifer from us last fall. He also takes a Berkshire boar.

Thos. McCartney, whose farm lies some half dozen miles north of Macdonald, maintains as an adjunct to his grain farming a nice little herd of dairy cows, among which are a sprinkling of Ayrshires. At the head of the herd stands the three-year-old bull, Davie, bred by J. & W. M. Smith, of Fairfield Plains. He is a low-set, strong constitutioned bull, with many points indicating dairy quality. Mr. McCartney is well pleased with Davie as a stock bull, he being a sure and successful sire; but in order not to inbreed he has bought the young bull, Kilmarnock Lad, bred by Andrew Mutter and sired by Surprise of Burnside, the prizewinning bull at the head of Mr. Greenway's herd. Mr. McCartney has a small patch of Bromo grass which promises so well that he is this year largely increasing the area. As a pasture grass he considers it the best thing he has seen. A neat little garden is also kept in front of a large, roomy frame house on stone foundation, and quite a nice grove of trees of several varieties is making rapid growth.

A representative of the FARMER'S ADVOCATE recently visited the extensive ranch of R. G. Robinson, on the Elbow River, in the Calgary district. This ranch is stocked with about 1,000 horses and 1,800 cattle. The horses are about half heavy drafts and half drivers and saddle horses. He keeps nine stallions, three of which are Clydesdales, one Shire, one Cleveland Bay Coach, one Thoroughbred and two Standard-breds. Also, a yearling Clydesdale stallion, recently imported from D. & O. Sorby, of Guelph, Ont. Mr. Robinson has been very successful with his colts this season, having raised 75 per cent. of them. The cattle have also done well, very little having been sustained. Thirty bulls are kept—all Short-horn—which breed is considered best adapted for the purpose. A bull is allowed to about twenty females. There will be about 300 head of three and four year old beef cattle to turn off this fall, that should average about 1,400 lbs. About 3,000 tons of feed—chiefly hay and green feed—is required to insure against any contingencies of winter weather. Green-out oats, and Bromo grass are the principal stand-bys. Calves, colts, work horses, and some cows are fed during the winter, the rest of the stock run out. There are about 300 acres under cultivation.

J. A. S. Macmillan, the well-known breeder of Shropshire sheep, while forced to admit that the prairie wolf has made serious havoc with the sheep industry of the Province, forcing many breeders to greatly reduce their flocks, still proposes sticking to his shropshires. His flock is in good condition, and the crop of lambs has been satisfactory. Sales have been fairly good throughout the past season. Mr. Macmillan some few years ago seeded a piece of lowish land with Kentucky blue grass and white clover with such satisfactory results in the way of sheep pasture that he now purposes preparing a much larger area. He cultivated pasture grasses and fencing with Page Woven Wire Fence. This fence, under several years' test, has been so satisfactory that he has taken the local agency for it. Mr. Macmillan has this year a large area sown to wheat and oats. He has built a very nice house on the farm, into which he has moved from the city, where for the past few years he has been living. This season Mr. Macmillan has three stallions in service: The imported Hackney, Prince Dane-golt (4937); the Clydesdale, Burnbrae 8378, and the imported Shire, Nailstone Morning Star II. Each is making a good season, the Shire on the road, and the other two standing in Kelley's barn in Brandon. The foals after these horses are coming strong and giving promise of great things.

Fred Smith, of Brandon, who is agent for the Province and Territories of Carter's Patent Wire Fence Machine, has, he tells us, made good sales this season, and the demand is steadily increasing. Mr. Smith's farm is a few miles south of Brandon, and everything about the place bears evidence of careful and successful management. The buildings are well protected on the north and west by shelter belts, while considerable attention is given to small fruits. Mr. Smith has experimented with several varieties of grasses. In eradication sweet grass he finds the most successful method is to plow early with a gang plow, cutting a shallow furrow, and then plowing deeper a little later, with the regular summer-fallow. He has a roomy, comfortable house of solid brick, with cellar underneath, soft water tank in cellar and other modern conveniences; a neat, compact horse and cattle stable, implement shed, and granary, the latter being 16 x 30 feet, with 12-foot studs, arranged so that it can be filled with little labor. It is let into the bank about four feet, the bank being dug away from wall so as to permit the free passage of air underneath the floors. The floors are set as low as possible on 2 x 6 joists one foot apart; a 2 x 6 on flat being used as sill, carried on bricks piled four square directly under each joist. The approach is elevated somewhat at end of building so that bags can be hauled from wagon to platform and carried right along a gangway running the length of building, where it can be filled to plate without any shovelling. The take-out door is on the ground level in front.



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LATEST, CHEAPEST, BEST.

Surpasses All Others in Washing Woodwork or Boiling Clothes.

It only requires to be tested to be appreciated. Warranted to do its work without injury to the hands or clothes. Contains no acid, no potash. Each package contains a coupon. Return those to your grocer and get a picture. With twenty coupons we present you one of our 14 x 17 pictures, framed; or, with fifty coupons, one of our 18 x 20 pictures, framed, or with twenty coupons and 50c. cash. Pictures can be seen at all grocery stores. Don't fail to try the wonderful labor-saver and be convinced!

.. MANGE CURE ..

Don't stand by and see your horses and cattle fail to skin and bone with that simple disease which is a mystery to so many farmers and cattle dealers in our Northwest country, which is nothing more than Mange, and can be permanently cured by our wonderful discovery, Yells' Combination Mange Cure. Follow the directions closely, and we will guarantee to cure the worst cases with three applications. We will send to any reliable man and parties. Boxes to be given on trial. No cure, no pay. Remember, all our goods are guaranteed.

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IN ALL KINDS INKS, OILS, SOAPS, WASHING POWDERS, TINCTURES, LIQUIDS, GLUE, MUCILAGE, STOVEPIPE VARNISH, STOVE LEAD BAR, HARNESS OIL DRESSING, FINE STOVE OIL DRESSING, SHOE BLACKING, CEMENTS, EXTRACTS, CHEMICALS, PATENT MEDICINES, ETC. MANUFACTURED SOLELY BY

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Everything at Rock-Bottom Prices, consistent with first-class goods.

A. C. McRae,

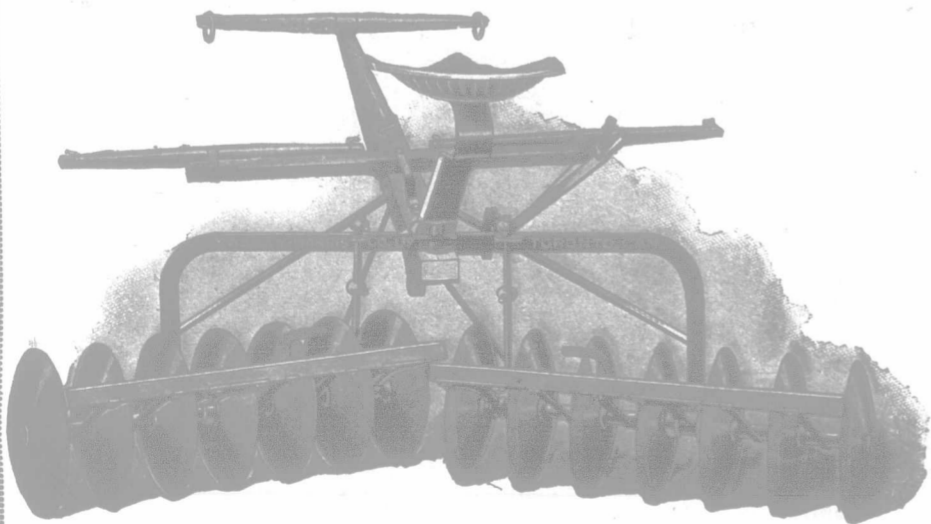
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MENTION THIS PAPER.

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Can be Fitted with Either Oval or Slicer Disks.



They are Very Strong and Reliable.

MASSEY - HARRIS COMPANY, LIMITED,

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NOTICES.

Fountain Pens Free.—In this issue Messrs. R. D. Richardson & Co., stationers, Winnipeg, Man., state that they will give a good fountain pen to every one presenting them with their advertisement coupon and purchasing \$2.00 worth of their goods. See their advertisement and secure one of these pens when visiting the exhibition.

Hudson's Bay Stores.—Visitors from outside points to the Winnipeg Exhibition should make it a point to visit the Hudson's Bay Company stores during their stay in Winnipeg. The Company have magnificent large stores on Main street, carrying immense stocks of highest class goods in each of the several departments—dry goods, furs, groceries, boots and shoes, liquors, tobaccos and cigars, dressmaking, tailoring and mantles. On account of their system of buying such large quantities for their many stores throughout Western Canada, they are in a position to sell at low prices. Visitors are welcome at all times to examine the premises and stock, whether they purchase or not, and we are confident they will be well satisfied with their visit. Large illustrated catalogues mailed free.

Black Leg Vaccination.—Preventive vaccination for black leg was introduced to Canadian and American stockmen by the Pasteur Vaccine Company, in 1895. Pasteur Vaccine is now a household word in those parts of the country where black leg is troublesome. The Pasteur vaccines have for the past four years been used with the greatest success and satisfaction, and the former heavy losses from black leg have been practically eliminated by those stockmen who have been wise enough to avail themselves of Pasteur Vaccine. The Pasteur Vaccine Company is now furnishing its black leg remedy in a form which is all ready for use, the only instrument required being a special needle, which is furnished with each package. No mixing, no filtering, and no hypodermic syring with its intricate parts. This new form of black leg vaccine has been given the name of "Blacklegine," in order to distinguish it from the powdered vaccines. The Pasteur vaccines, both of the "single" and "double" kind, as well as "Blacklegine," are furnished only by the Pasteur Vaccine Company, whose headquarters are at 65 Fifth Avenue, Chicago, and we recommend our readers to write to them for further particulars.

"Nothing to Compare with It."

Whitesville, N. Y., Jan. 5th '98.
The Lawrence-Williams Co., Cleveland, O.:
I still use "Gombault's Caustic Balsam" and could not get along without it. I sometimes buy in Elmira and some of our druggist here. There is nothing to compare with it, in my belief.
I. B. WILEY, V. S.

GOSSIP.

J. R. North, of Fort Qu'Appelle, has recently purchased two Shorthorn heifers imported from Ontario by Messrs. Creamer & Johnston, of Qu'Appelle, and he also got a bull from J. H. Kinneer, of Souris, brought through on the first Association car sent out by the Purebred Cattle Breeders' Association of Manitoba, which, he says, arrived in good condition and in every way satisfactory.

On the stock farm of John E. Smith, at Brandon, a large herd of Shorthorns is kept, the Herefords having all been disposed of to Western breeders. In a pasture field on the banks of the Assiniboia a bunch of 30 nice, straight young heifers were feeding at the time of our recent visit. These will be bred to a young bull, and the old cows are again being bred to the old stock bull, as his calves have given Mr. Smith every satisfaction. In Clydesdales, Mr. Smith has sold quite a number of stallions and some mares.

Mr. A. W. Smith, Maple Lodge, Ont., writes:—
"We recently sold to Mr. James Bray, of McDonald, Man., a very select young herd of Shorthorns; a handsome young bull, Lord Lossie 2nd, a son of Calithness and after the same pattern, dam by British Flag, granddam by Conqueror, great-granddam bred by Mr. Cruickshank. Along with them went a very fine quartette of heifers, two close descendants of the grand old imported Lovely 19th, bred by Mr. Cruickshank; also a beautiful red heifer descended from imported Jane 3rd, bred by Mr. Syme, Dumfriesshire, Scotland, and from our very best milking strains; dam gives 50 lbs. milk per day, and sired by Calithness. Mr. Bray's selection cannot help doing well for him. They are all sturdy young cattle of fine form and finish, and choice breeding."

BRANDON'S BIG FAIR.

In order to afford better facilities for the cattle at the Brandon Fair, the Exhibition Association is adding 100 feet to the new cattle stable which was erected last year. This barn is 65 feet, and accommodates four rows of stock. Twelve more box stalls have also been added to the training stables. Additional electric lighting is to be provided, and many other improvements are being made.

Card of Thanks...

\$1,370.00 SHOAL LAKE, May 20, 1890.
Received from the Miniota Farmers' Mutual Fire Insurance Company their cheque for \$1,370, in full payment of our claim for loss by fire on 19th instant.

Mr. Doyle, the Manager, has paid this claim immediately upon the completion of our proofs of loss, to our entire satisfaction, and we are pleased to be able to recommend the Miniota Farmers' Mutual to all insurers.

SIGNED, W. R. F. COLLIS, H. J. DEWINTON.



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: FOR SALE :
PRICE LIST FREE.
WM. JAS. ROBINSON,
PORTAGE LA PRAIRIE,
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MRS. R. E. CARR, PHOTOGRAPHIC ARTIST.

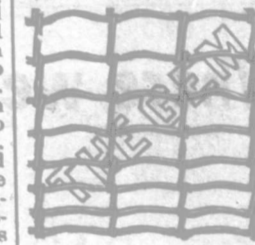
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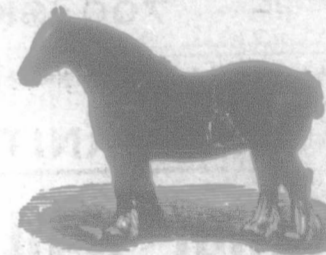
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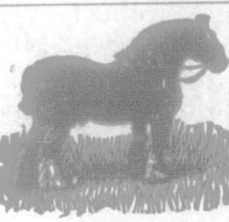


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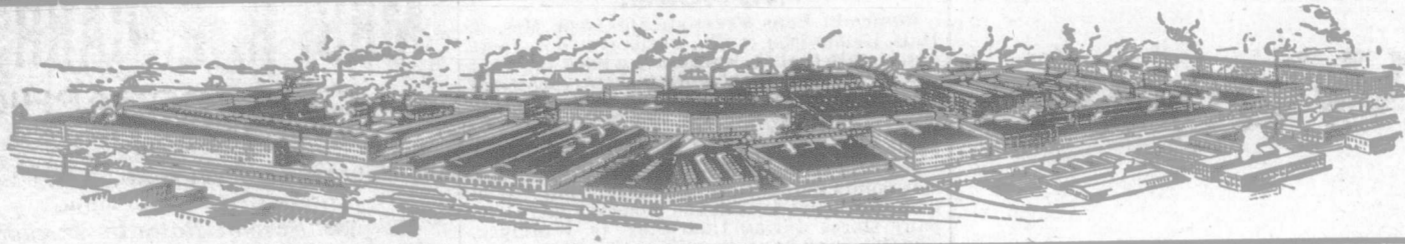
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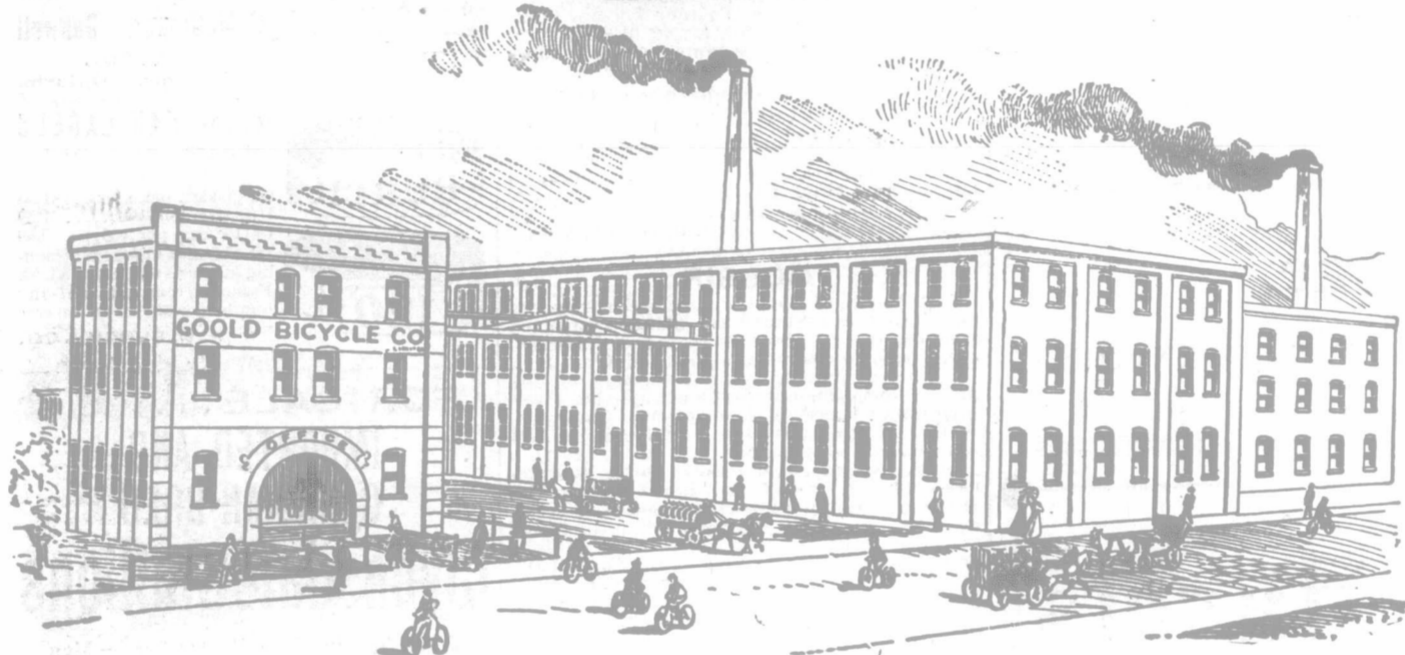
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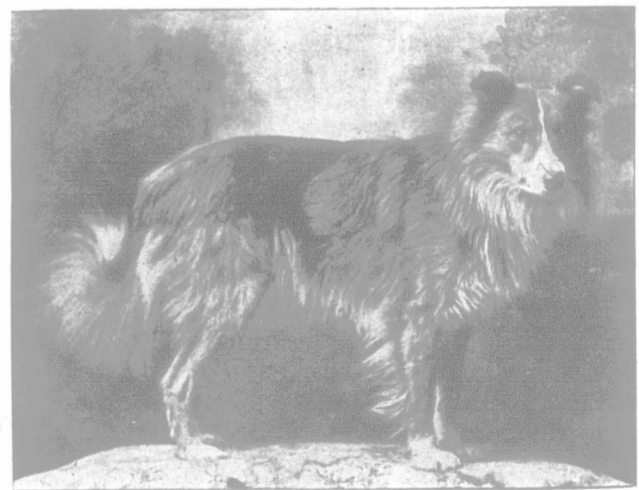
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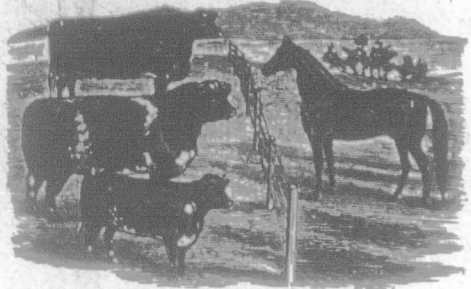
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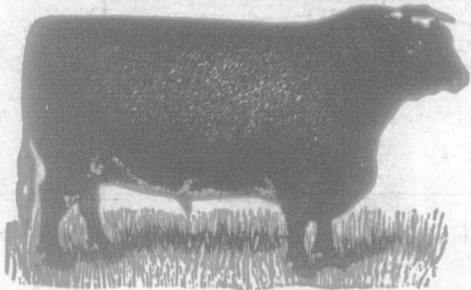


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SHORTHORN CATTLE AND LINCOLN SHEEP. Imp. Baron Blanc 11th at head of herd.

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SHORTHORNS 9 BULLS, 4 HEIFERS,

Mostly Scotch-bred, and got by such bulls as Kinellar Sort (imp.), Northern Light (imp.), Prince and Prince Bismark.

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Scotch Shorthorns For Sale: 90 HEAD TO SELECT FROM.

We are offering a number of cows and heifers (including some show heifers), from such sires as Valkyrie = 21806 =, Young Abbottsburn's Heir = 15947 =, and imp. Mariner = 2720 =, served by imp. Diamond Jubilee (Vol. 15) now at the head of herd.

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10 SHORTHORN BULLS 10

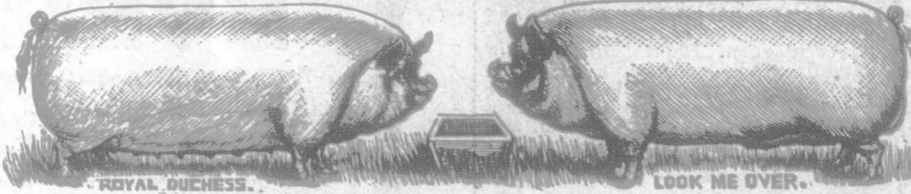
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SCOTCH SHORTHORN BULLS AND HEIFERS HERD ESTABLISHED IN 1872.

Such sires as imported Royal George and imported Warfare have put us where we are.

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AT SUMMER HILL IS THE LARGEST HERD OF... Imported Yorkshires IN THE DOMINION.



Large, Lengthy, English Type. Among them being the first choice of the most important prize-winning English herds.

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Shorthorn Cattle and Lincoln Sheep. Herd prize and sweepstake at Toronto Industrial Exhibition, 1897 and 1898.

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TAMWORTHS CHOICE PIGS SIX TO SEVEN WEEKS OLD.

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Four calves dropped in August, October, December and March, and sired by Craigleas of Auchinbrain (imp.), first prize bull at Ontario in 1897 (the only time ever shown).

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Breeders of high-class, deep-milking Ayrshires. Sweepstakes young herd at Ottawa. Shropshire sheep from prizewinning stock. Berkshire pigs and Barred Plymouth Rocks. Young stock for sale. Visitors met at Queen's Hotel. Give us a call.

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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.

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Young stock always for sale.

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

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The home winners of the winners. Headed by the imported boars, Conrad's Model and Klondike, assisted by Bacon Boy and Lennox. Has won 94 out of a possible 99 first prizes. Stock of all ages for sale. Write for prices or come and see.

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

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We have an excellent lot of long, strong, hardy young Duroc-Jersey pigs now on hand. Also a few choice young boars ready for service.

TAPE BROS., Ridgeway, Ont.

LITTLE'S PATENT FLUID SHEEP DIP AND CATTLE WASH

Disinfectant AND Germicide

A Highly Concentrated Fluid for Checking and Preventing Contagion from Infectious Diseases in Animals.

"Little's Patent Fluid" will destroy the infection of all fever germs, and all contagious and infectious diseases, and prevent contagion from one animal to another, and will neutralize any bad smell whatever, not by disguising it, but by destroying it.

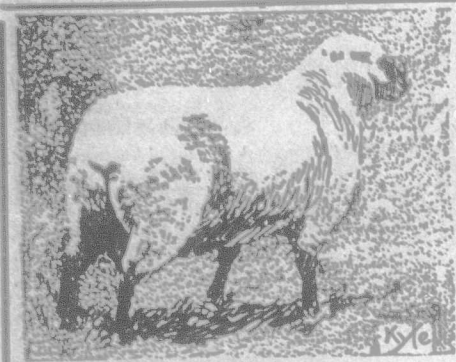
NO DANGER! SAFE, CHEAP, EFFECTIVE.

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Sold in large tins from 25 to 40 gallons of at... 75c. Sufficient in each to make wash, according to strength required.

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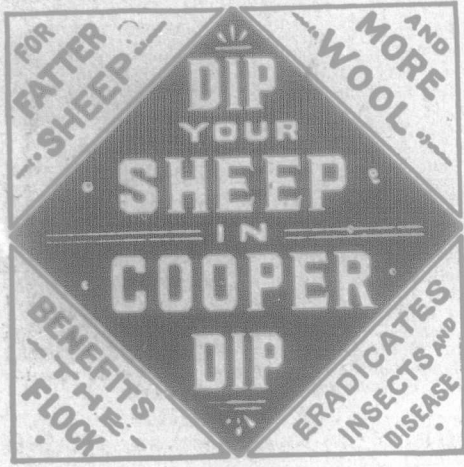
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A powerful non-irritant and healing preparation that is proving a boon to farmers all over Canada for sheep and cattle ailments, such as Ticks—Maggot—Gangrene—Shear Cuts—Red Lice on Sheep—Parasites—Ringworm—Bruises and Scab. Full directions on every can. Cures the worst cases, and makes the skin healthy and whole. The most effective and economical dip on the market. If your dealer can't supply you, write us direct for it, and if there's anything out of the ordinary in the ailments of your flocks and herds we'll be pleased to give free any additional advice in the matter.

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SUPERIOR TO ALL LIQUID DIPS.
Twenty-five gallon packet, 50c.; one hundred gallon packet, \$2.00. If druggist cannot supply, send \$1.75 for one hundred gallon packet to

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Book premiums on application to COOPER DIP, Galveston, Texas.

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Secretary of the National Sheep Breeders' Association,
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Pedigree Live Stock Agent, Exporter and Shipper. All kinds of registered stock personally selected and exported on commission; quotations given, and all enquiries answered.

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CANCER CURED WITHOUT KNIFE OR PLASTER. FULL PARTICULARS FREE.
F. STOTT & JURY, Bowmanville, Ont.

HENRY ARKELL, ARKELL, ONTARIO.
IMPORTER AND BREEDER OF
OXFORD-DOWN SHEEP.
Animals of all ages and both sexes for sale. Have some imp'd RAM LAMBS. Prices reasonable.

IT PAYS TO ADVERTISE IN THE FARMER'S ADVOCATE

GOSSIP.

BIG PRICES FOR ROYAL HACKNEYS!
Some great prices were realized at the draft sale of Hackneys from the Prince of Wales' choicely-bred stud of that breed at Wolverton, May 23rd. The dispersal attracted an exceptionally large and influential attendance, and resulted in the realization of 11,450 gs. for sixty-six animals catalogued. Bidding for many of the lots submitted was excitingly keen, and in several instances quite remarkable prices were paid. Sir Edgar Vincent gave 925 gs. for a four-year-old gelding by Field Marshal, and Lord Iveagh 1,000 gs. for a pair of geldings by Field Marshal and Viator. Another of the lots, a bay mare by the same sire, Field Marshal, made 650 guineas, her purchaser being Sir Thomas Lipton. The average for the sixty-six was over 4170 apiece.

SHORTHORNS AT THE BATH AND WEST OF ENGLAND SHOW.
At the above show, held at Exeter, May 24th to 30th, the entries of Shorthorns were more numerous than usual, and the quality quite up to the standard. In aged bulls Mr. Richard Stratton won first honors and the male championship with Alto, Mr. Handly coming second with Pride of the North, Mr. G. Harrison's roan, Count Beauty, won first, and Mr. Stratton's red Highflyer, by Alto, was placed second. The yearling bulls numbered sixteen, and Mr. J. D. Willis, Bapton Manor, won first and second with the roan Bapton Emperor and Royal Jeweller in the order named. Mr. Geo. Harrison's Welcome headed the list of cows, Mr. Hoskin's Countess of Oxford 14th coming second, and Mr. Rothschild's Sittyton Pride third. The rules required all cows competing to be in milk. In two-year-old heifers Mr. Willis won first, second with Pearl and Fluff, and Mr. Rothschild's Sittyton Pride was placed third. In yearling heifers Mr. J. Thorley's Ringdale Memory was first, and Mr. S. Hill's Crocus and Lavender Bride second and third.

THE MAPLE LODGE SHORTHORNS AND LEICESTERS.

On the occasion of a recent visit to Mr. A. W. Smith, of Maple Lodge P. O., Ontario, the herd of forty-five high-class Shorthorns were found in capital condition, evidencing proper care and an intelligent system of breeding, feeding, and treatment, resulting in a thrifty, robust and early-maturing class of cattle, with strong constitution and good feeding qualities, while several of the families represented show superior milking propensities, some of the cows swinging udders which would do credit to the best of special dairy herds. One of this class, Princess of Thule, tracing to Imp. Lavinia, is now yielding fully 60 lbs. of milk daily, while her dam, previous to her death from milk fever, gave 60 lbs. daily, so that this quality comes through the family honestly by inheritance. Another family in the herd, which combines good feeding and fleshing qualities, with deep-milking proclivities, is the Constances, founded on one of the best of the Bates tribes, and topped with choice Scotch-bred bulls, producing animals of good size and style, together with a wealth of natural flesh, such as fills the eye and the hand at once, and making a favorable impression at first sight, which grows on one the longer he looks at them. This family produced the great show bull Caithness, sold to Premier Greenway, winner of first honors at the Winnipeg Industrial Exhibition last year, and Cedric, the first prize bull calf at the Toronto Exhibition 1897, now in service at Ontario Agricultural College farm.

The Scotch-bred families are represented by a number of the descendants of the grand old imported Cruickshank cow Lovely 19th, of one of the choicest of the Sittyton tribes, a cow which bred till she was twenty years old, and left a large and lusty progeny. The reliable Scotch-bred Syme family, which has produced probably as many prizewinners as any other in Canada the last twenty years, is represented by several choice members tracing to Jane 3rd, Imp. by Simon Beattie. The newly imported 3-year-old cow, Lady Mary 15, is a straight, even roan, of fine quality, sired by Denmark, dam by Mountain Gem, from the Missie family, which produced Marengo, the champion of the Royal Show last year, and got by William of Orange. She is nursing a bull calf by Maximus, a Marr bull of the Missie tribe. Other excellent families are represented by individual females of the same general type, and a grand lot of heifers, young bulls and calves are coming on to fill the blanks made by numerous sales during the past few months. These show in their pedigrees top crosses of such choice bred bulls as Conqueror, of the Cruickshank Clipper tribe (from which came Cumberland, Commodore and Roan Gauntlet); Lavender Prince, of another of the favorite Sittyton Sorts, and British Flag, by Bampton Hero. The present stock bulls in service are Abbotsford, a first prize Toronto winner (of the same family as the World's Fair champion, Young Abbotsburn), and the newly-imported Knuckle-Duster (72793), bred by Mr. Bruce, of Inverquhomery, to whose herd many complimentary references have been made, and which, being near the most noted herds of the day, had the use of their best sires. He was got by Waverley (68072), dam by Cap-a-Pie, and is a typical Aberdeenshire Shorthorn of fine quality and character. With the services of such sires the calibre of the herd should continue to improve.

Mr. Smith's flock of Leicesters has long held a leading place in the list of prizewinners at the principal shows in the Dominion, and as an indication that it is up-to-date, it is only necessary to state that at the Toronto Industrial—Canada's leading exhibition—in 1898, the Maple Lodge flock won in keen competition both the open and the Canadian-bred flock prizes, and the first prizes for aged ram and shearing ram, for aged ewes and shearing ewes, and also second prize in the latter section. The same record was repeated at the Western Fair at London, and, in addition, the special for best 5 yearlings went to the Maple Lodge flock. At the Provincial Winter Show at Brantford the gold medal offered by the American Leicester Association was also captured by Mr. Smith. The four imported prize ewes added to the flock three years ago have proved excellent breeders, and their produce has added strength to the flock; but the owner, never satisfied as long as there is a possibility of improvement, contemplates importing again this summer, having engaged passage via one of the Beaver Line packets sailing from Montreal June 3rd, and it is safe to say will be content with none but the best obtainable.

W. C. Edwards AND COMPANY.
IMPORTERS AND BREEDERS
Laurentian Stock and Dairy Farm, NORTH NATION MILLS, P. Q.
Pine Grove Stock Farm, ROCKLAND, ONTARIO.

Ayrshires, Jerseys, Shropshires, Berkshires.
Our excellent aged herd of Ayrshires is headed by our noted imported bull Cyclone. Tam Glen heads the young herd, and Lisgar Pogis of St. Anne's heads the Jerseys. The young stock are all from time-tried dams.
A. E. SCHRYER, 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. 7-1-y-om

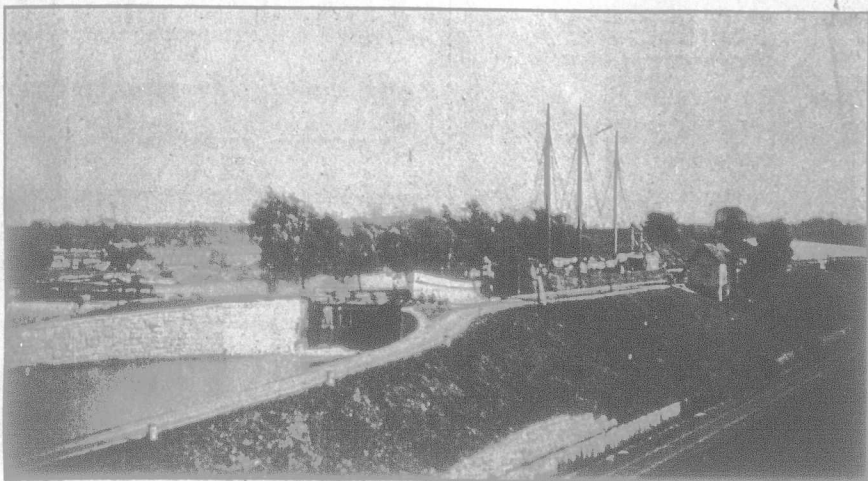
Shropshires and Scotch Shorthorns.
The imported Missie bull, Scottish Pride, at the head of herd, assisted by British Knight. Special bargains in young bulls, young cows and heifers of the best of breeding.
JOS. W. BARNETT, Manager.

PURE-BRED GUERNSEY CATTLE
Chester White Swine. **Duroc-Jersey Swine.**
FOR SALE—Two young Bulls ready for service, and Heifers bred. First-class Pigs of all ages from imported and prizewinning sires and dams. Twenty head of HOLSTEINS for sale. Write for particulars and prices to **WM. BUTLER & SONS, DEREHAM CENTRE, ONT.**

FOR 60 DAYS MY ADDRESS WILL BE
GEORGE HOTEL, Shrewsbury, Eng.
Orders for high-class **Sheep AND Cattle** will receive careful attention. Sheep imported by me have won more premiums in eight years than all other importations combined.
ROBERT MILLER, Stouffville, Ontario.

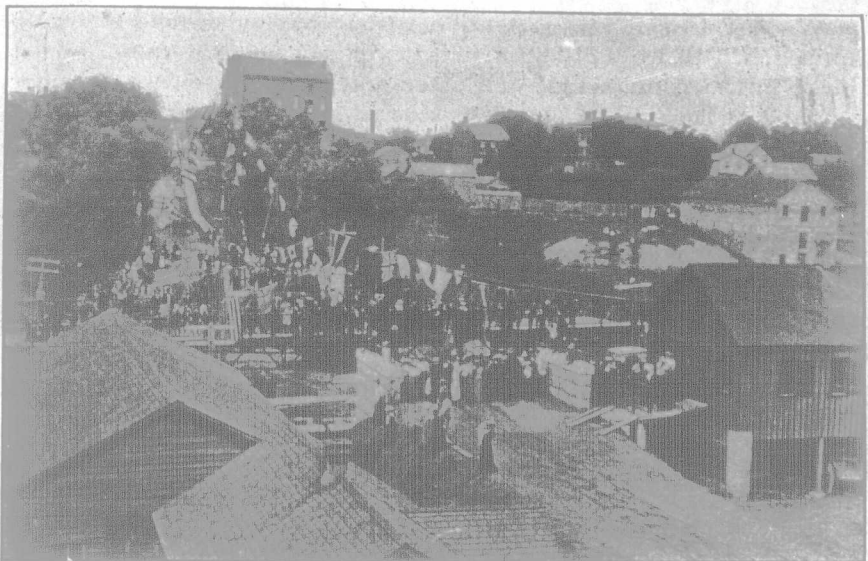
CYCLONE FENCE CO.
From 27 to 60 Inches. From 7 to 11 Cables.
Build Your Fence Cheap. 100 Rods Per Day.
TORONTO, ONT.

Work Done With **THOROLD CEMENT** Speaks for Itself.



NEW WELLAND CANAL, LOCK 24
with Wastewair and Swing Bridge, and Niagara Central Bridge in the distance.
From W. G. Thompson, Esq., Engineer in Charge New Welland Canal and Sault Ste. Marie Canal.

My tests of the Thorold Hydraulic Cement have extended over a period of twenty-eight years, and have been on a large scale, as exemplified in the locks, bridges, culverts, and other masonry on the Welland Canal and Welland Railway, and the record, which has been invariably satisfactory, is to be found in examination of the structures. The necessary tearing down of masonry and concrete during the Welland Canal enlargement has afforded abundant evidence of the reliability of the Thorold Hydraulic Cement, both in masonry and concrete, and above and under water. I desire no better cement for the class of work referred to.
April 17, 1884.



ABERDEEN BRIDGE, OAKVILLE, ONTARIO.
Masonry Work built with Thorold Cement. William Gibson, Esq., M. P., Contractor.
Oakville, January 16th, 1897.

Estate of John Battle, Manufacturers of Thorold Cement, Thorold, Ont.:
Dear Sirs,—Thorold Cement was used in the construction of Aberdeen Swing Bridge, at town of Oakville, and it has given perfect satisfaction.
C. J. MARLATT, Reeve,
Chairman of Bridge Committee, 1894.

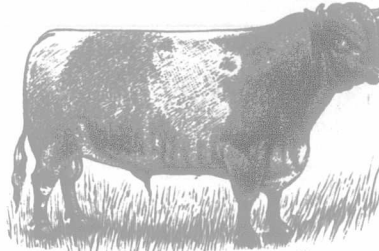
(From the Toronto Globe, September 19th, 1894.)

OAKVILLE'S ENTERPRISE.
An \$11,000 Steel Swing Bridge Formally Opened Yesterday—A Large and Enthusiastic Audience.

OAKVILLE, SEPT. 18.—(Special)—The erection of a fine new steel swing bridge over the river here justified the enthusiasm displayed by the people of Oakville at its opening to-day. The new bridge is a splendid structure, and is undoubtedly a credit to the Town of Oakville and the Council of the County of Halton, who have aided them in erecting it. The bridge has a clear span of 115 feet between the abutments, and is 118 feet over all. It has a 16-foot roadway and two 4-foot sidewalks. It is a deck swing steel bridge with riveted Warren truss girders. It swings in either direction upon a central pier, 17 feet in diameter at the top and 19 feet at the bottom. The central pier and abutments are of solid masonry laid in Thorold Cement. The laying of the central pier was a difficult feat, owing to the depth of the mud. It rests on 66 piles, sunk to a depth of 40 to 50 feet. The masonry cost \$7,300 and the superstructure \$2,400. The approaches, etc., will bring the total cost up to about \$11,000. The masonry work was done by Mr. William Gibson, M. P., Grimsby, and the superstructure put up by the Central Bridge and Engineering Company, of Peterboro'.

FOR FREE PAMPHLET WITH FULL PARTICULARS, ADDRESS
ESTATE OF JOHN BATTLE,
THOROLD, - ONTARIO.

2 Imported Shorthorn Bulls 2

4  **4**
2 - YEAR - OLD HEIFERS. **1 - YEAR - OLD HEIFERS.**

HEIFERS ALL IN CALF TO IMPORTED BULLS.

Correspondence or a personal visit solicited.
Catalogues on application.

H. CARGILL & SON, CARGILL, ONT.

Cargill Station and Post Office on G. T. R., within half a mile of barns.

GOSSIP.

An extensive draft sale of Hackneys and other horses from Mr. Burdett-Coutts' famous Brookfield stud took place in London last month. The sale attracted a very large attendance, and resulted in some very fine prices being obtained, one pair making 630 gs., another 540 gs., a third 500 gs., and several of the others prices ranging from 100 to 400 guineas. A feature of the sale was the disposal of a chestnut team, consisting of five admirably-matched and grandly-actioned carriage horses; these met with very keen competition, and were finally secured by Capt. Hume for 1,300 guineas. The famous Hackney brood mare, Lady Cadet, failed to fetch her reserve price, and was bought in at 750 gs.

Sixteen Shropshire shearing rams competed at the Bath and West of England Show, at Exeter, first prize and a highly commended going to Mrs. Barrs, 2nd to T. Fenn, 3rd to W. F. Inge, reserve to A. Tanner. Ram lambs (7 entries)—1st and reserve to R. P. Cooper, 2nd to F. L. Mills, 3rd to Denston Gibson. Shearing ewes (11 entries)—1st to F. Fenn, 2nd to Mrs. Barrs, 3rd to P. L. Mills, reserve and highly commended to W. F. Inge. *South-downs*.—Shearing rams—Earl Cadogan, Earl Bathurst, Sir J. Blyth, H. McCalmont. Ram lambs—1st and reserve to H. McCalmont. Shearing ewes—Cadogan, Bathurst, Blyth. *Oxfords*.—Shearing rams—W. S. Tweeke, J. T. Hobbs. Ram lambs—1st and reserve, Tweeke. Shearing ewes—Tweeke. *Cotswolds*.—Shearing rams—Houlton, F. Craddock, R. Swanwick. Ram lambs—Swanwick, 1 and 2; Craddock, 3. Shearing ewes—Houlton, Craddock, Swanwick. *Dorsets*.—All prizes to W. Flower.

Mr. Arthur Johnston, Greenwood, Ontario, writes this office to say:—"The Greenwood Shorthorns are now nearly all on grass, and they are in as nice form as they have ever been at this season of the year. There is not a fat one and not a poor one. The young calves are a very pretty lot, with a great preponderance of heifers. The imported heifers are growing and looking uncommonly well. We have never owned a finer lot of yearlings, imported and home-bred. We still have a very nice lot of young bulls for sale of serviceable ages. Sales have been good, but prices have not ruled as high in this country as in the United States or Scotland. We have sold \$9,150 worth of Shorthorns during the past twelve months, besides a few Clydesdales and other breeds. There is no boom in any kind of pure-bred stock in Canada, but all kinds of improved stock are in demand, and the man who can't sell has himself to blame; either he does not advertise, or he asks too much for his stock. To know values is one of the great features of the stock business, and one that is frequently lacking in local breeders."

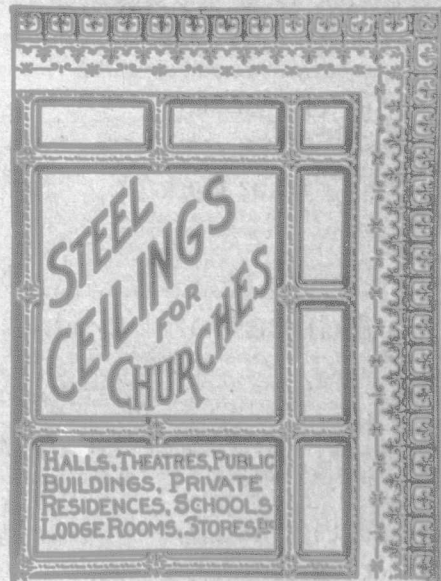
The sixth annual sale of harness horses belonging to Mr. Burdett-Coutts, M. P., took place May 18th, at the Brookfield Stud Grounds, St. Albans Road, Highgate, in the presence of a large and distinguished gathering of breeders and others. The interest of the sale chiefly centred in the admirable chestnut team called "The Great Copper Combine," which included an extra horse, the whole five, viz., Anaconda, Rio Tinto, Mason, Barry, and Namaqua, being admirably matched and distinguished by brilliant action. There was a spirited competition for this combination, and it was eventually purchased by Captain Hume for 1,500 gs. A Hackney brood mare, Lady Cadet, by the well-known sire Cadet, was bought in at 550 gs., but some pairs fetched exceedingly remunerative prices. Mainstay and Mainspring, for example, two browns, were taken by Mr. Greenwehl at 630 gs., and Galors and The Abbot were bought by Mr. Charles Sheather for a client for 500 gs., he also taking Bay Rhum and Bay Tree for 540 gs. Mr. Watney bought Tipper and Topper, two handsome browns, for 320 guineas. Mr. Wicke gave 410 gs. for March Hare and War Hare; Quirinal and Capitol went for 370 gs. A pair of chestnut roans, the only pair of this color in the sale, and distinguished by fine quality and richness of hue, fell to Mr. Rucker's bid of 300 gs. Only one hack was offered, and this, a chestnut named Apricot, was purchased by Mr. Ash for 235 gs. Out of sixty-one animals that were offered, forty-eight were sold for a total of \$2,888, making an average of \$59.38, 5d.

FITZGERALD BROS.' SHORTHORNS.
In a splendid grazing section of Simcoe County, Ont., some fifteen miles north-west of the town of Barrie, Messrs. Fitzgerald Bros.' extensive farming and breeding operations are conducted. Their 400 or more fertile acres are peculiarly adapted for the purposes to which they are devoting them, and here and there are to be seen evidence of active breeding operations in the extensive herds and flocks of pure-bred and high-grade animals. Some 25 matured Shorthorn females are at present enjoying their liberty in the luxuriant and well-watered pastures, and showing evidences of the richness of its produce. A few heifers of last year's produce were also retained, making a very attractive herd. In running over their pedigrees we noticed that many of the more matured matrons trace their origin to Roan Lilly and Village Rose parentage; while the employment of such sires as Ingram's Victor and Marquis of Lansdowne have produced the younger stock worthy of their retention in the herd. Since our visit a year ago there have been added to the herd a representative of the noted Nonpareil family—a straight roan cow tracing to Scarlet Velvet, and the imported sire, British Statesman, purchased at Messrs. S. J. Pearson & Son's dispersion sale last spring; and in their purchase, the Messrs. Fitzgerald Bros. have wisely consulted their own interests and acted upon their best judgment. Although we have seen British Statesman from time to time, we never saw him in better stock form than at our recent visit, enjoying his freedom in a shaded grass plot adjoining the barn. Coming as he has from one of the best herds in Scotland, and being got by a sire of noted bulls, he cannot fail to make an impression upon this herd such as few have the privilege of in this country. His owners report him as proving very sure, and he retains his activity equal to many of much younger age. A few (some half dozen) young bulls were on hand at the time of our visit, most of which are at a serviceable age; chiefly sired by the Morton-bred bull, St. Louis. They are all reds and roans and worthy of the attention of those seeking such stock.

The grade Cotswolds are up to their former mark, and a splendid, well-covered lot of lambs are to be found at Mount St. Louis.

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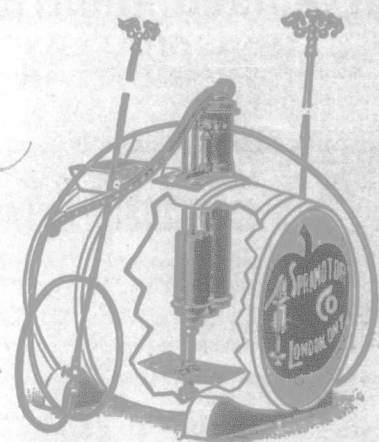
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Write us for samples and prices.
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PLEASE MENTION FARMER'S ADVOCATE.

GOSSIP.

Copies of the Winnipeg Industrial Exhibition Prize List may be had on application to the General Manager, F. W. Heubach, Winnipeg, Man.

At the Shorthorn sale of Benjamin Whitsett, Pre-emption, Ill., June 1st, 38 head sold for \$4,196, an average of \$110.38. The highest price for a bull was \$250, and for a cow, \$255.

W. & H. Jones, breeders of Poland-China hogs, Mt. Elgin, Ont., in remitting for their advertising account, write:—"Our stock is doing well. We have received many enquiries from our advertisement and have made good sales, in number quite beyond our expectations.

At the sale of a draft of young Jerseys from the herd of Capt. M. C. Campbell, at Spring Hill, Tenn., June 1st, 27 head, only one of which was over two years old, sold for an average of \$81.20. Ten of these brought from \$100 to \$160, and the majority were sired by the Imp. Island-bred Golden Lad bull, Mona's Glory, or by Matilda's Duke.

The Shorthorn sale of Mr. John Morris, Chillicothe, Mo., May 24th, was quite successful. Forty-six head averaged \$131.75. The yearling bull Red Cup 2nd brought \$315, and Phyllis Cup, another yearling bull, sold for \$250. The 8-year-old cow, Caroline 2nd, was taken by Geo. Bothwell, Nettleton, Mo., at \$350. Pansy Blossom went to H. C. Duncan, Osborne, Mo., at \$260, and Fannie Cook to Rob McGuire, Chillicothe, at \$270. These were the highest figures reached.

At the annual meeting of the American Southdown Breeders' Association, held May 31st, at Springfield, Illinois, the following officers were elected: President—J. H. Pickrell, Springfield, Ill.; Secretary—Jno. G. Springer, Springfield, Ill.; Treasurer—D. W. Smith, Springfield, Ill.; Board of Directors: For two years—C. M. Clay, White Hall, Ky.; John Jackson, Abingdon, Ont., Can.; Jerome A. Leland, Springfield, Ill. For three years—Geo. McKerrow, Sussex, Wis.; L. M. Crothers, Crothers, Pa.; John Robert Warren, Hoosick Falls, N. Y. For one year—S. E. Prather, Springfield, Ill.

Mr. A. G. Hopkins, V. S., who is well known in Manitoba (particularly at Hartney and Neopawa) as a successful veterinary practitioner, left here two years ago to take a course at the Ontario Agricultural College. After spending one year there, and passing his examination with honors, he took up a post-graduate course at the McKillip Veterinary College, Chicago, and has just completed a course at the Iowa Agricultural College. We just learn from him that he has received the appointment of Assistant Instructor in Animal Husbandry and Veterinary Science at the Wisconsin Agricultural College. Dr. Hopkins is to lecture at a number of Farmers' Institutes throughout Manitoba this month.

SWINE AT THE BATH AND WEST—ORDER OF PRIZES.

Berkshires.—Boars born in 1896-7-8—Hayter's Highclere, Topper, Jefferson's Peel Swansea, J. P. King's Oxford Champion, G. T. Tomkin's Peel Victor. Boars born 1899—J. A. Fricker, E. Burbridge, J. Lee, G. F. Tomkin. Sows born before 1899—A. Hiscox, Jr. (May Burton 3rd); J. Jefferson, 2 and 3 (Peel Daisy and Peel Jessie). Sows born in 1899—Fricker, Burbridge, Parsons. Mr. Hiscox's May Burton 3rd was accorded the championship as best Berkshire. **Large Whites.**—Boar of 1896-98—Sir G. Greenall (Walton Eclipse 2nd), S. Spencer (Hollywell Gigas), A. Hiscock (Duke of Lancaster 3rd). Boars of 1899—Hiscock, Manuel, Spencer. Sows born before 1899—Sir G. Greenall, 1 and 3 (Walton Lady) and 3 (Peel Daisy and Peel Eclipse), 2 S. Spencer (Hollywell Model), 4 F. Allmand. **Manuel's Tamworths.**—Boars of 1896—Hon. D. P. Bouverie, Sir G. Greenall. Boars of '99—Bouverie. Sows before '99—D. W. Phillip, 2 and 3 R. Ibbotson, E. de Hamel. Sows of 1899—Phillip, Ibbotson.

A GREAT SALE OF JERSEYS.

The dispersion sale of Mr. T. S. Cooper's great herd of Jersey cattle, at Linden Grove, Coopersburg, Pa., on May 30th, was a magnificent success, and the result of this butler breed has a strong hold on the confidence of dairymen in America. It was a remarkable herd, inasmuch as that nearly the whole number were bred on the farm, and the majority of them sired by the famous old bull, Pedro 3170, winner of the championship at the World's Fair, and by his son Pedro Royal Marjoram 28560, out of Marjoram 2nd, by Stoke Pogis 848, Pedro Royal Marjoram, eight years old, the first bull in the catalogue, sold for \$1,100, to A. B. Darling, Ramsey, N. J.; Peter Cooper's Pedro 33524, two-year-old son of Pedro, and of Wardalia 2nd, 24 lbs. 6 ozs., sold for \$800, to Henry Pierce, of San Francisco, Cal., and General Marifold, a three-year-old son of Major Polo and Mary Idagold, 23 lbs. 9 ozs. (daughter of Ida Marifold, champion at World's Fair, 23 lbs. 24 ozs.), brought \$800, being purchased by Geo. F. Weston, representing G. W. Vanderbilt, Biltmore, N. C. Major Polo was a son of the great cow Massey Polo, 22 lbs. 6 ozs. The highest-priced female was the two-year-old Pedro's Handsome Dolly, with a record of 15 lbs. 4 ozs. in her two-year-old form, who sold for \$825, to Mr. E. A. Darling, New York, President of the American Jersey Cattle Club. Three other females were sold for \$505 to \$650. The ten best females averaged \$473. Eleven daughters and two sons of Pedro averaged \$425. Ten cows and heifers by Pedro Royal Marjoram averaged \$343, six of them being under two years old. Five heifer calves and one bull calf by Pedro Royal Marjoram averaged \$217, nearly all of them under six months old. The five bull calves by General Marifold averaged \$200. Unfortunately the two grand show cows, Wardalia 2nd, with a record of 24 lbs. 6 ozs., dam of Peter Cooper's Pedro, and Queen of Cows, 18 lbs. 3 ozs., died of milk fever a week before sale, which no doubt affected the result unfavorably. The average price made by the 93 head sold, including calves, was \$217, total \$20,181, a remarkable record for so large a number in one herd, and all but eight bred at "Linden Grove." We congratulate Mr. Cooper on the well-deserved success of his sale. At the close of the sale Mr. Cooper said:—"Don't let anyone get the idea that I am going out of Jerseys. My work in this line is not done, but I am tired and need a rest. It is my intention to visit the Island, and if I can get the best at a fair price I may buy a few."

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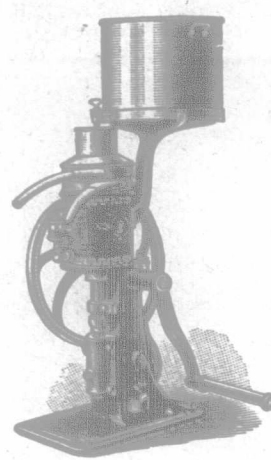
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TO DAIRYMEN OF MANITOBA AND N.-W. T. DISTRICTS:

We beg to call your attention to our having opened a Branch at Winnipeg, where we will endeavor to carry a complete line of all articles required in the manufacture of Butter or Cheese, for either Creamery or Dairy, and at such prices as will enable us to save you money.


Heading lists of goods stands the full line of "DE LAVAL" "ALPHA" Power and Hand SEPARATORS, which are conceded by our leading experiment stations and dairy schools, as well as advanced creamery and dairy men, to be the Best Cream Separator on the market today, and other goods of the same standard of merit, which will appeal to our dairymen as worthy of their consideration before purchasing elsewhere.



One object in opening this Branch is to be near the dairymen of Manitoba and the Northwest, so as to better serve those who have favored us with their patronage in the past, either direct or through local agents, and to acquaint ourselves with new customers. All of which will result to our mutual interests.

Users of any style of "DE LAVAL" SEPARATORS who are not fully posted in operating to best advantage, or those desiring any manner of information on the separator question, we shall be pleased to hear from, assuring them that such inquiries will have prompt and satisfactory attention. Any who contemplate the purchase of a Cream Separator this spring we should be pleased to hear from, so as to send them reading matter that will prove of much interest and benefit to them, giving the result of years of experience of dairy authorities on Cream Separators. Showing first cost is not the only consideration in a Separator purchase. If what facts we produce are not convincing enough to any intending buyer that the "DE LAVAL" "ALPHA" SEPARATORS are the best, we will be pleased to place one of such separators in any dairy on a 15 or 30 day competition trial against any cheap infringing Separator, to prove by practical results that the "DE LAVAL" is not only the best but also the cheapest. Let us hear from those in any way interested. Address—

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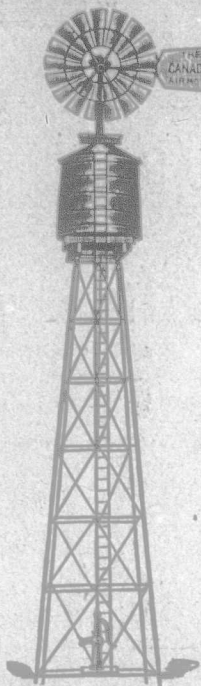


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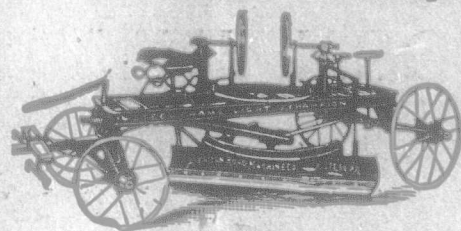
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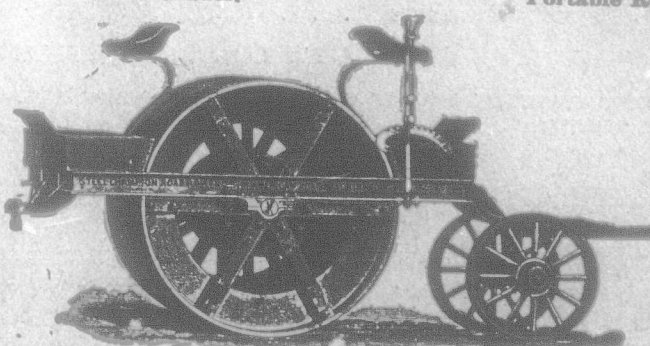


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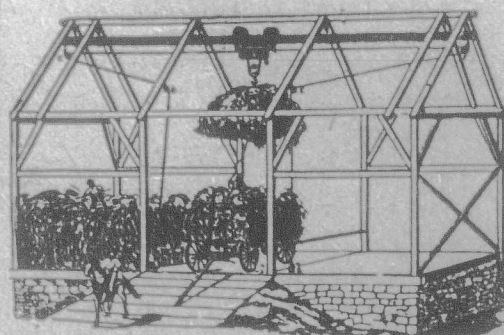
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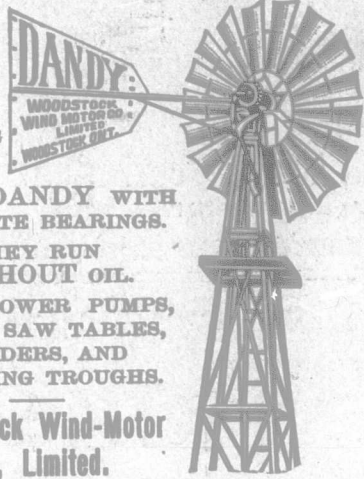
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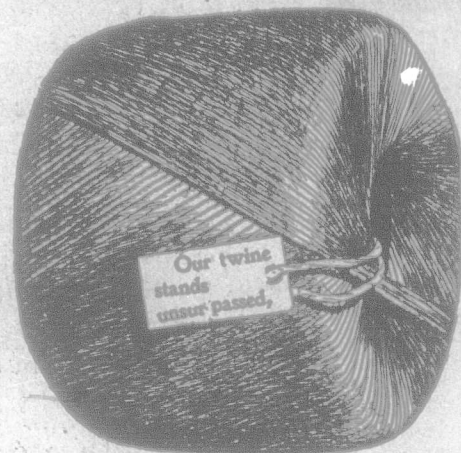
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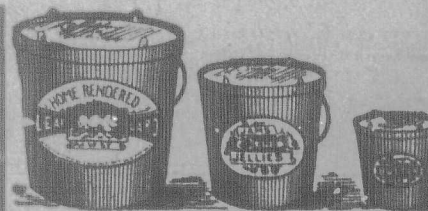
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