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THE FARMER'S ADVOCATE

AND HOME MAGAZINE

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

VOL. XXXII.

LONDON, ONT., AND WINNIPEG, MAN., FEBRUARY 1, 1897.

No. 423.

EDITORIAL.

Reports of the Ontario Dairy and Poultry Associations' annual meetings form an interesting and useful feature of the present number of the FARMER'S ADVOCATE. They will bear careful perusal.

The worst cow in the dairy herd at the Ontario Agricultural College is reported by Prof. Dean to have been fed at a loss of \$26 per year; the best at a profit of \$47.30. The latter produced butter at a cost of 8.8 cents per pound, the herd average being nearly 14 cents (taking account of the time they were dry). Dairy farmers, what are the cows in your herd doing?

All the indications now point to a revival in the live stock interests of the Dominion, and we trust the annual meetings of the various horse and cattle breeders' associations in Toronto this week will be largely attended. These organizations do much to promote the industry, and it is all-important to give it enthusiastic aid and a proper trend at the present time.

Butter from the Ballantyne and Avonbank winter creameries sold recently in England for 105s. per cwt., netting in Canada something over 20 cents per pound. Canadian butter is steadily creeping up on the British quotation lists. Mr. J. B. Muir, whose series of articles on winter buttermaking have been running through the FARMER'S ADVOCATE, is maker at Avonbank. Referring to one of these articles, the buttermaker at the O. A. C. pronounced it the best on the subject he had ever seen in print.

The United States customs regulations require veterinary certificates of the freedom from contagious diseases affecting live stock in the district from which animals are exported. The Dominion Minister of Agriculture some time ago appointed veterinary inspectors in many towns and cities, empowered to grant such certificates for a uniform fee of two dollars for each certificate, to be paid by the exporter. This was felt by shippers to be a heavy tax, especially in the case of shipments of single animals or small numbers. Representations to this effect were made by a number of breeders to Hon. Mr. Fisher, who saw at once the reasonableness of the complaint, and has promptly taken action to grant the relief required. The charge for such certificates will now be for single animals, or for any number up to eight, 25 cents for each certificate, and for that number and upwards, in one shipment, not to exceed \$2. This, we presume, will be satisfactory to shippers, and is a good illustration of the wisdom of having for Minister of Agriculture a practical farmer and one who is in touch with the men engaged in the business.

Transportation of Live Stock.

In these times of prevailing low prices for most of the products of the farm, the question of reducing the cost of production to a minimum is one of special importance to farmers and stock breeders. To secure a living profit on his outlay in money, feed, and labor, the question of reasonable freight rates in the shipment of his stock or crops to market is one which requires close consideration. Farmers in the Northwest particularly, and stock raisers throughout the Dominion generally, have for years been complaining, and not without cause, of the excessive rates charged by the railroad companies for the carriage of breeding animals in less than carloads. About a year ago an attempt was made by the railway managers to impose upon this class of freight terms even more unjust and oppressive than those which had formerly prevailed. This threatened to be the last straw, which breaks the camel's back, and caused a vigorous protest from the stockmen, which had some effect. The matter was at that time freely discussed in

these columns and in other papers of influence, as well as by the stock breeders in their various association meetings, and a committee appointed by the latter made representations to the railway magnates in such an effective manner as to demonstrate that if corporations have no souls they are at least susceptible to public criticism. A compromise was effected and was accepted by the committee as the best terms which could, for the time being, be secured, but which was by no means satisfactory as a settlement of the difficulty, and the agitation for better terms has recently been renewed, with, we believe, the determination to persevere till the needed relief is granted or assured.

The minimum weights for cattle of different ages, singly, as fixed by the general freight agents in the revised schedule last July, are as follows:—

Bulls under one year	1,000 lbs. each.
Bulls one year and under two	3,000 " "
Bulls over two years	4,000 " "
Calves under six months	500 " "

The minimum weights suggested by the Dominion Cattle Breeders' Association and adopted as satisfactory are as follows: Bulls over six months and under one year, 1,000 lbs.; one year and under two, 2,000 lbs., instead of 3,000 lbs.; bulls over two years, 3,000, instead of 4,000 lbs. Calves under six months should read bulls or heifers. Live stock in less than car lots is placed in the first class, while live stock in car lots is in ninth class, which certainly appears to be an excessive difference, and we think that a reasonable classification would place animals in less than car lots at about third class. The excessive rates imposed here, we believe, defeated their own ends by driving shippers in many cases to avail themselves of express rates, which for certain distances are found to be cheaper than freight rates and much more satisfactory in regard to despatch.

The regulation requiring, in the case of animals shipped singly or in small numbers, where the distance is over one hundred miles, that the shipper or his agent shall accompany the shipment and shall pay one half ordinary first-class fare for one trip, is certainly unreasonable and oppressive. Long years of experience has demonstrated that for distances of one hundred to five hundred miles animals singly or in small lots have gone safely without an attendant, and there was no reasonable excuse for imposing this burdensome tax upon shippers.

One of our contributors, Mr. Mackay, Superintendent of the Indian Head Experimental Farm, in our issue for Dec. 15 last, took strong ground in favor of the C. P. R. carrying pure-bred stock free to the Northwest, showing that the increase in the number and quality of stock there which that railroad would in a few years carry back would more than compensate them for the first loss. This is by no means a visionary proposition, though it is, perhaps, more than we may expect to realize; but one thing is certain and must be insisted upon, that is that farmers and stockmen are entitled to better terms and must have them.

Presuming that within a couple of months, at least, Parliament will again be in session, it will be in order for farmers to press their claims for just treatment, and they should not be backward in demanding a redress of their grievances, first from the railway managers, and failing there, to invoke the assistance of the Government in securing their rights. Considering the vast amount of money and lands which the Government has placed in the hands of the great carrying corporations, it certainly seems reasonable that the people engaged in the greatest industry in the country, that on which all others are so largely dependent, should at least be so much under control of Parliament as to be induced to make transportation rates such as the industry can bear without being burdensome, and we submit that farmers everywhere in the Dominion should prompt their representatives to use their influence in as effective a manner as possible in this direction.

The Score Card System of Judging.

At the annual meeting of the Ontario Poultry Association (reported elsewhere in this issue) recently held at Guelph, the question of the usefulness of the score card in judging poultry was freely discussed, and a resolution in favor of discontinuing its use was carried by a large majority. The method was very severely condemned by most of the poultry-men who spoke.

If the system has ever been a success in judging any class of stock it has been in the department of poultry. Here it has had its most careful trial, and we had supposed was tolerably satisfactory. The fact that it has been condemned by the poultry-men probably sounds the death knell of the system in Canada, so far as its practical application in the public show-ring is concerned. The few cases in which it has been used in this country in judging stock other than poultry have served to demonstrate its utter failure to give anything like satisfaction to exhibitors. The latest illustration of its failure we have heard of with other stock was at the Montreal Exhibition last fall, where a judge commenced his duties in the sheep classes by the use of the score card and in the very first section made such an absurd decision as to call out audible dissent from bystanders, which so "rattled" him that he abandoned his card and went on with his work in the usual way. At the same show, the judge of beef cattle started in with the score card, and, we believe, carried it through, with the result, in the Shorthorn class at least, that many decisions made at Toronto Exhibition by first-class judges were reversed, and in the competition for sweepstakes bull the animal which had won this distinction at the former show was beaten by a bull calf which had been placed 4th in his class at Toronto.

We have always contended that judges are likely to differ as widely in their estimate of the relative value of the different points or parts of an animal as they are to differ on the general excellence of the animals judged by the eye and the hand, and the attempt to apply pencil and paper to the judging of live stock is sure to prove a failure, complicating matters, and ending in results that the judge himself would not approve apart from his faith in his figures.

As an illustration of the uncertainty of the scoring process, we give the result of the work at a meeting of Kentucky expert judges, so called. Eight men undertook to score a Berkshire boar, and the totals of their scores varied from 73.5 to 84.7, a difference of 11.2 points. It is probable that if these eight men had consulted, the majority of them at least would have agreed as to the weak and strong points of the animal, but when they undertook to reduce to figures their estimate of these faults or virtues they found themselves nearly a dozen points apart. In the discussion at Guelph, a case was cited where the same judge scored the same bird on two successive days with the result of a difference of eleven points.

The score card may be a very nice plaything in the hands of schoolboys, and it can do little harm, possibly some good, in the class-room, where there is no serious responsibility as to results, but he who carries his card into the show-ring ranks with the Sunday-school teacher who takes his lesson helps into the class. He fails to inspire confidence in himself or his work, to satisfy himself or his critics. Experience has shown that no better work has been done in judging stock than that done by the skilled eye and hand of the careful and honest man who has devoted years to careful observation and comparison of typical specimens of the class of stock he undertakes to pass judgment upon, and there is no better school for the young farmer who wishes to learn the art than the show-ring at our leading exhibitions, where competent men, feeling the responsibility of their position, are doing their work. We think it safe to say that no better opportunity is afforded for such a study than at

Suggestions for Governments.—Some of your readers may be inclined to ask the question, Can these results be made general, and how can it be accomplished? My answer to such a question is that it can be generally practiced, but it takes a long time, large capital, and high skill. The practical method I strongly advise is for the two Governments—Provincial and Federal—to unite and form a scheme to undertake to operate a few farms throughout a small section of the country, supply the capital and skill, and control the workings of these farms (not own them, only direct the work of the owner). If these prove successful, then undertake to control a number more, and so on, until this whole section (say one county) is built up, and sufficient time and experience would be obtained not only as to direct results but as to the ultimate value of the undertaking in regard to the nation's welfare, such as value of land, profits of working land, labor employed, results of such increased labor on trade (export and import), universal profitable exchange of labor products, stocks, bonds, business standing, shipping, and in general increase of wealth, intelligence, contentment, etc. If such would prove satisfactory in a small section, and sufficient to warrant its extension, then a new and larger scheme could be devised, more perfect in every way, as experience would cause the correcting of errors and the upbuilding of sound principles of finance and business execution. It seems to me to be high time for our Governments to turn over a new leaf and stop throwing away many thousands of dollars of the public money on large experimental farms with a large professional staff and other disbursements, which a test of years has given the ordinary Canadian farmer but a very small benefit for such a large outlay. The experiment the Canadian farmer wants to-day to be solved is how can he be put in a position to make his farm pay and increase in value from year to year—he cares not for lavish expenditure on a large experimental farm when his own farm barely pays him for his work a fair day's wage, and he finds such work does him very little good. My own opinion is that ten acres of land is quite sufficient for agricultural experiments, and let the balance of expenditure be directed to demonstrate how the average man owning an ordinary farm can be made to make his farm produce profitable crops and he himself be successful. Let the Government once prove how this can be done practically, and provide ways and means to make it general all over our country, then farmers would believe that the scientist and the Government were some use to him and the country, and good practice would be so general that eventually nearly all would believe and practice; more papers would be read, more books studied, more careful enquiry would follow, until the change would be ranked as a revolution of no mean magnitude. It seems to me that old practices have formed strong habits and the real study of business principles as applied to agriculture has been lost to sight, and it is high time to throw off these bonds of habit and bestir ourselves to the discovery of new principles which will produce progressive, profitable results when applied in the ordinary course of the ordinary Canadian farmer.

D. M. MACPHERSON,
Glengarry Co., Ont.

Toronto Dressed Meat Establishment.

Toronto is to have an abattoir at last. Satisfactory arrangements have been made by the Grand Trunk Railway with Mr. Macdonald, of Galt, for the establishment of an abattoir on the plot of ground near the hog market. Mr. Macdonald will expend from \$15,000 to \$25,000 in buildings, with cold storage. The industry is expected to employ a large number of men. A certain number of dressed carcasses are to be shipped over the Grand Trunk Railway every week for export.

The Best Way to Invest \$21.

Hosea Niece, Monck Co., Ont.:—"Please find enclosed one dollar, being subscription for Vol. No. 32. This makes twenty-one years I have taken the ADVOCATE. I appreciate it more and more each and every year. It should be in the hands of every farmer. I can heartily say it is the best spent twenty-one dollars I ever spent. Will try to send some new subscribers."

STOCK.

Cattle Quarantine Abolished.

We give below a draft of the agreement completed between Hon. Mr. Fisher, Canadian Minister of Agriculture, and the United States Secretary of Agriculture, relating to the quarantine of animals imported from the Republic and the Dominion. It goes into effect to-day (Monday, Feb. 1st).

Following is the agreement in full:—

- (1) Each country shall adopt the veterinary certificates of the other.
 - (2) That the chief of the Bureau of Animal Industry and the chief inspector of stock for Canada will mutually inform one another of contagious animal disease in either country, or of disease in animals imported from either country.
 - (3) A 90 day quarantine shall be enforced by both countries upon all cattle imported from Europe or from any country in which contagious pleuro-pneumonia is known to exist; a fifteen-day quarantine shall be enforced upon all ruminants and swine imported from countries in which foot and mouth disease exists, within six months, and upon all swine imported from all other countries.
- Breeding cattle admitted into this country must be accompanied by a certificate that they have been subjected to the tuberculin test, and found free from tuberculosis; otherwise they shall be detained in quarantine one week and subjected to the tuberculin test. All cattle found affected with tuberculosis must be returned to the country whence shipped, or slaughtered without compensation. Cattle for feeding or stocking ranches must be accompanied by a certificate showing that they are free from any contagious disease, and that (excepting tuberculosis) no such disease exists in the districts whence they came.

one week, at any port of entry, upon permit of the customs officer. Should he observe any evidence of disease he will detain the animals and report to the district inspector, who will decide whether the animals may be admitted; and horses used for driving or riding to or from points in Manitoba, the Northwest Territories or British Columbia, on business connected with stock-raising or mining, and horses belonging to the Indian tribes, may be admitted without inspection, but must report to custom officers both going and coming. Under all other circumstances horses must be inspected at the port of entry.

The Care and Winter Feeding of Cattle.

(Continued from page 29.)

- 1.—Do you prefer to tie yearlings during the winter months or allow them to run loose in pens with a view to economy of labor and well-being of the animals?
- 2.—How long each day do you allow yearlings and two-year-olds to run in the barnyard?
- 3.—What is the character of your coarse fodder, and do you consider it economical to feed hay to young store cattle?
- 4.—Should such animals receive any grain; if so, of what sort and how much daily?
- 5.—Assuming that you feed fodder, roots or ensilage and grain, do you prefer feeding them separately or mixed? If mixed, kindly explain how you prepare and feed it?
- 6.—At what age do you aim to sell your fattened cattle?
- 7.—What ration would you advise for fattening cattle from the beginning of February until shipping time?
- 8.—Do you consider it well to keep fattening cattle continually housed all winter? If not, how often should they be turned out?
- 9.—What plan of watering do you employ?
- 10.—How much importance do you attach to currying fattening cattle?

From a Feeder of Prize-Winning Fat Stock.

In the first place I would advise your readers to raise and feed only good, well-bred cattle. In these times of low prices for thoroughbred sires no one can afford to breed anything but good stock. It is

one of the greatest extravagances on the farm to waste time and feed with scraps.

1.—I prefer to have yearlings to run in box stalls loose, they will grow and develop much better. Not too many in one pen, as you can regulate the feed much better. I consider the labor much the same.

2.—This depends a good deal on the condition of your yard; if facing the sun and having lots of shelter they can be left out from two to four hours, but on cold, stormy days half an hour is enough.

3.—My coarse fodder is cured corn, and housed in the barn, set on end. I run it through the cutting box, and mix it with either chaff or oat straw. I think it is only economical to feed hay when it is low in price; corn is cheaper.

4.—I certainly think it pays to feed oats to young cattle at present prices, say one gallon of chopped oats per day to be given in two feeds.

5.—I find that it is a great advantage to mix fodder, pulped turnips and meal in the morning for evening, and evening for morning.

6.—At twenty-eight months is a very good age; that is, well-bred cattle.

7.—The ration that I would advise is three gallons per day, consisting equally of peas, oats, and barley.

8.—If the water is convenient and at a good sheltered place, cattle are better out for a few minutes every day, it gives them good exercise.

9.—I have a hydraulic ram to force my water in a supply tank, and taps all over the barn and a watering trough in the yard.

10.—I put great value in currying cattle at least three times a week. Treat them quietly and gently, not scaring them into the trough with dog or pitchfork. Keeping them clean, free from lice, is a very important matter.

P. S.—Gem of Athelstane, the first prize heifer at Toronto last fall, has done remarkably well; weight, 1,000 pounds; heart girth, 6 feet 3 inches. Stock all doing fine. I have one young bull that will make a show bull, and a winner, too, if he gets a fair chance.
ISRAEL GROFF,
Wellington Co., Ont.

A Successful Feeder's Testimony -- Cutting and Mixing Foods.

- 1.—By all means tie them up.
- 2.—From twenty minutes to half an hour.
- 3.—Just turnips and clover hay for yearlings, and pulped turnips and straw for two-year-olds. I consider it economical to feed hay to yearlings, but



GROUP OF SWINE BREEDERS AT THE ONTARIO FAT STOCK SHOW.

not two-year-olds, that is when you run them over.

4.—No grain.
5.—If we have plenty of coarse feed, we feed the straw or hay and turnips separate, but if scarce of feed we run the straw and hay through a cutting box, and mix pulped turnips once a day just as we pulp them, so as not to lose any of the juice. Mix enough to feed them three times a day, in the feed room, and carry it to the cattle with a wheelbarrow.

6.—From two to two and one-half years old.
7.—Feed them what turnips are good for them; start with two gallons of meal and increase to three per day; meal to consist of two-thirds oats, one-third peas (by measure); and all the clover hay they will eat up clean.

8.—Turn out once a day about twenty minutes.
9.—By means of a well in a sheltered part of the barnyard.

10.—I attach a good deal of importance to currying; clean them at least once a day.
Ontario Co., Ont. JAMES LEASK.

No Profit Feeding Scrub Cattle.

1.—I tie them up, because the weaker ones do not get a fair chance when running loose. Of course, it costs a little more for labor.

2.—Usually about one hour each day, when they go to water, about one hundred yards distant, and the stables are being cleaned.

3.—Straw and corn cut up and mixed, twenty pounds pulped turnips, and a little salt. Hay has been too scarce for the last two years to feed. After 1st January use ensilage, mixed with the cut straw, instead of the corn saved in the stook.

4.—A little grain mixed with the cut stuff, commencing at a pound a day, increasing gradually; generally peas and oats ground.

5.—Have them mixed together about 24 hours beforehand, and feed them what they will eat up clean.

6.—At twenty-four to thirty months.
7.—All the mixed cut straw and ensilage they can eat, with from six to ten pounds of pea and oat chop per day mixed in with the ensilage and straw.

8.—I like on fine days to turn them out for about an hour; on very cold or stormy days do not turn them out.

9.—The lake being close to the barn, they generally go there for a drink; on stormy days water them from a well under the barn. I think it would be better for them if they had the water in their stalls.

10.—We curry them if we have time, if not they go without. I believe it would be better for them if they were curried every day.

N. B.—One thing I would emphasize is that you can not feed cattle with profit from a scrub bull.
Peterboro Co., Ont. F. BIRDSALL.

The Methods of a Good Feeder.

1.—We would prefer to let the young cattle run loose, providing they are dehorned, as we think it takes less work and the cattle will do better. We would clean the stables out probably once each month by hauling a slight made for the purpose into the stable and then conveying the manure direct to the fields.

2.—Cattle that are running loose will certainly not need as much outdoor exercise as those tied up. We would advise leaving the cattle that are tied up out a couple of hours, while those running loose time enough to water would be sufficient.

3.—Our coarse fodder consists of oat straw, cornstalks, and hay. We feed cornstalks and straw, mixed, twice daily (morning and night), and hay at noon. We run all our straw and cornstalks through the cutter before feeding.

4.—We feed our yearlings about two pounds of mixed chop (consisting of two parts oats and one part corn) twice daily.

5.—We prefer feeding our fodder, roots and grain as a mixed ration. We slightly mix our fodder, pulped roots, and grain; add a couple of pails of water and mix thoroughly. By adding the water the chop adheres to the fodder and none is wasted. We pulp our roots by windmill power. It is not often we have to pulp by hand.

6.—We aim to sell our fatted cattle not older than three years, and as much younger as possible.

8.—It would depend entirely on the surroundings. If the stable was well lighted, well ventilated, and cleaned twice daily, we are of the opinion they would be better kept in; under other circumstances we think they would be better turned out an hour or so every day.

9.—We intend next spring to have water right in the barnyard, where the cattle can have access to it at all times while outside.
Middlesex Co. (North), Ont. ROBT. NICHOLSON.

Fattening Cattle Ration in Feb.—Currying.

1.—Yearlings are just as well tied if they get out every day for an hour for exercise.

2.—Our yearlings and two-year-olds are let out in the yard every day for about an hour if the weather is favorable.

3.—Coarse fodder consists of cornstalks, straw and chaff. I think store cattle should get hay from about the 1st of April until they go on the grass, if hay is plentiful.

4.—We feed our yearlings two quarts of meal a day; meal consists of two-thirds oats and one-third peas. Never feed meal to two-year-olds.

5.—Always feed meal on cut feed and chaff mixed together in mangers; feed roots whole.

6.—We sell our fat cattle at 2½ to 3 years old.

7.—Our ration from the 1st February consists of cut cornstalks and chaff, all they will eat three times a day, with one gallon of meal, equal parts of oats, peas and barley, mixed in cut feed, and about one-third bushel Swedish turnips three times a day; would feed hay twice a day if we had it to spare, and not so much of chaff and corn.

8.—I think they should be turned out every day for about half an hour if it is not too stormy.

9.—By windmill to tank in barnyard.

10.—I think they should be curried at least twice a week, especially when they are casting their hair.
Perth Co., Ont. JAS. A. CREER.

Fattening Cattle.

1.—Prefer to tie in stalls; less trouble to clean out six stalls than a pen that has six cattle running in it.

2.—Turn them out at noon and as soon as they get a drink I get them in again, except on very fine days I leave them out one-half to one hour.

3.—Wheat, barley, and oat straw. It is not economical for me to feed hay, except to calves the first winter. Mine is a first-class grain-growing farm, hence I grow plenty of straw. I let the cattle pick it over; take rest for bedding, and with a few turnips they keep in good healthy condition. I feed hay for about two weeks before they are turned out.

4.—The cattle would certainly be better, but it would not pay me; they would care less for straw; my object is to get the straw into manure.

5.—About the first of January, before my fattening cattle are three years old, I begin to feed them by mixing chaff, grain, turnips, all together. I wet the chaff, then put the grain onto it (a mixture of peas, barley, oats, and corn, if I have corn), mix it well, then add turnips and mix again; a small tablespoonful of salt to each head; mix one meal before feeding.

6.—About three years old.
7.—Answered in five, with the exception of a change of oats and hay for two or three feeds per week for the last month.

8.—Have tried both ways. I have had best results by turning them out at noon about half an hour; they fed better, kept healthier, weighed better, got fatter, looked and felt better.

9.—At noon, from a water tank in a large shed.

10.—The cattle would be better to be curried every day, but it would not pay to curry over three times per week, unless you had nothing else to do.
Brant Co., Ont. J. H. JULL.

A Careful Cattle Feeder's Testimony.

1.—Young stock of any kind are the better for all the liberty they can get, but when loose must be divided into lots, putting those of equal size and strength together, and given plenty of rack space, so that there will be no crowding. We have twenty yearlings in one lot loose, ten in another lot loose, and eighteen of a larger size tied in stalls. We prefer to tie two-year-olds always, as they would abuse one another too much if loose, as we disapprove of taking off the horns. The ones that are loose require less time and labor to attend, but in the long run the best results come from tying. So far as the well-doing of the animals is concerned, much depends on the temperature of the stables. This is a very important point, and one on which many good cattle-men disagree.

2.—The length of time allowed out each day depends altogether on the weather. On a fine day they may be left out from three to five hours, but must have something to pick at in the yard. On cold or stormy days only left out long enough to drink.

3.—Our coarse fodder consists of cornstalks, straw, chaff, and turnips. The turnip tops are carefully saved and fed during November and December, in the pasture or stable as the weather permits. With proper care a great quantity of feed is obtained from twelve acres of turnip tops. Young stock generally get more or less hay in the spring before going to grass. Good hay is not an economical food for young stock. They can be kept growing and in good growing condition with oat straw, oat chaff, wheat chaff, and a few turnips given twice daily. We prefer having the chaff separate from the straw.

4.—Where the above foods are at hand store cattle require no grain.

5.—In fitting for beef we feed grain (mostly oats and peas) mixed with cut feed or chaff, and fed at noon, with plenty of whole roots morning and evening, followed by hay. The quantity of grain fed will depend on circumstances, such as quantity of roots or corn fodder in the ration. Would prefer roots pulped and hay cut and mixed, but it is a lot of labor which I think would not pay.

6.—We aim to sell at from two and one-half to three years.

7.—We feed very little grain before February, but increase it while finishing off to all the animals will stand, provided that does not exceed six to eight pounds, as much grain in the ration runs up the cost of the beef very high, and we aim to keep it as low as possible now in the days of cheap beef.

8, 9, 10.—By all means turn fattening cattle out every day, not leaving out longer than one hour, which will give them ample time to drink and currie themselves on a straw stack, which they really seem to enjoy. A little dry sulphur given in the food once or twice a week, with more dusted on their neck, shoulders and back from time to time will keep vermin off.
Carleton Co., Ont. J. C. H. SPARROW.

Wintering Sheep.

(Continued from page 31.)

QUESTIONS.

1.—Do you believe in keeping lambs, shearlings, and older sheep separate? If so, what are the advantages?

2.—Do you consider it well to confine sheep to pens all the time, or at nights, or do you allow them access to the yards and pens all the time?

3.—What is the character of your coarse fodder for sheep (a) To what extent do you use pea straw? (b) To what extent do you feed hay? (c) How do you feed each or both, cut or uncut, in racks, troughs, or on the floor?

4.—What is your experience with feeding roots or ensilage to young sheep and to breeding ewes?

5.—To what extent do you recommend feeding grain to young or breeding sheep, not fitting for show?

6.—How much importance do you attach to keeping the pens cleaned out down to the floor?

7.—What do you recommend with regard to watering?

Successful Methods in Feeding Sheep.

1.—When it is possible we always prefer to winter lambs and older sheep in separate pens; older sheep are somewhat greedy, and when housed and fed together improve at the expense of the lambs, while the lambs, we think, require more liberal feeding than older sheep to keep them going ahead and in good condition.

2.—We prefer to let sheep have yards in connection with their pens, to which they can have free access at all times, but where this is not practicable they should have the run of the barnyard at nights.

3.—Our method of feeding breeding sheep has been as follows, varying of course a little as there is a scarcity of one kind of fodder or a profusion of others: In the morning feed roots, about 2½ or 3 pounds per head (pulped, sliced or whole, it matters little so long as sheep are all strong and healthy), followed by clover hay in racks; about half pound of oats at noon; about the same amount of roots in the evening, with pea straw scattered about the yards and shed for them to pick through, the refuse of which is gathered in the morning and used for bedding. Always endeavor to have sheep go into winter quarters in good thriving condition, and feed them so that they shall not only hold that but improve a little, and when lambing season comes on they will be carrying a good coat of wool and be in good condition for nursing.

4.—Have had no experience in feeding ensilage to sheep; would feed roots much more liberally to young than to breeding sheep.

5.—The amount of grain varies a good deal, according to the quality of the fodder being used. A few years ago, when engaged somewhat largely in feeding lambs during the fall on rape for Xmas markets, after they were shut into yards and pens we fed from eight (8) to ten (10) pounds of pulped turnips, about one pound of mixed peas and oats, and all the clover hay they wanted, with good results.

6.—We do not generally clean our sheep pens out during winter, or, at most, once or twice during that time.

7.—Attach great importance to their having free access to good pure water at all times.
Wellington Co., Ont. JAMES LAIDLAW, JR.

Fodder Corn and Cut Clover Hay in Sheep Feeding.

1.—I do not believe in wintering lambs with older sheep, as the older sheep crowd the lambs from their feeding trough so that they can get but very little feed. The lambs require to be well fed to produce bone and muscle and size, and I think it pays to feed the lambs well, as it is the first winter that makes the sheep.

2.—I allow them free access to pens and yards at all times, except when very stormy, and always close them in at night and give them plenty of ventilation.

3.—I have fed corn fodder cut up for three winters, with good results. I grow the Mammoth Southern Sweet, and sow it very thick. I feed corn fodder night and morning until near lambing time, and then feed clover hay. I give them pea straw in the middle of the day (fed on the ground), not cut. I cut up the clover hay (as I think there is a saving of one-third in doing so) and feed in troughs.

4.—I have never fed ensilage, but I feed the lambs all the roots that they will eat up clean twice a day. I do not feed many roots to breeding ewes until after lambing.

5.—I feed my lambs a pint of oats mixed with bran night and morning. I do not feed my ewes so much until after lambing.

6.—I clean out my sheep pens about every six weeks, and always keep them well bedded.

7.—Sheep should have plenty of water at all times, and free access to salt.
Middlesex (South), Ont. WM. E. WRIGHT.

Sheep Management at "Isleigh Grange."

1.—We do not believe in keeping lambs, shearlings, and older sheep together. The shearlings, being of a more robust nature generally than the lambs, are apt to get the "cream" of their allotted ration and leave the refuse as the weaker ones' share, whereas the case should be vice versa. We find shearlings, as a rule, are more easily kept than lambs, and really do not require food of such a highly concentrated nature as should ordinarily be fed to lambs.

2.—We do not confine our sheep to their pens, only in case of severe, stormy weather. We consider confinement, detrimental to their general health, especially so in the case of breeding ewes.

3.—Our coarse fodder is principally composed of well-cured oat straw. (a) Not having cropped so heavily as we would have liked in peas this past season, our supply of peas and straw is somewhat limited; nevertheless, I am a great believer in this commodity and ready to endorse it as one of the most healthful and economical of all fodders for breeding ewes. (b) Hay crop being light, we are feeding our breeding ewes, shearlings, etc., principally on oat straw, and are agreeably surprised at results attained. Our lambs have a liberal supply of hay. (c) We feed our oat straw cut, fed in racks made for hay, underneath which is placed a trough which catches all that otherwise would drop to the ground and consequently be wasted as food.

4.—In feeding roots we do not think it advisable to feed more than from two to three pounds of turnips per head; in fact, not so large a quantity until the ewes are accustomed to them, and then as the ewes reach the more advanced stage of pregnancy we somewhat modify the quantity and add a little oil meal. Our ewes are doing remarkably well on a ration of one-third pound oats, one-half pound bran, two and a half pounds turnips, with cut oat straw to balance what they will eat up without much or any waste of straw.

5.—We believe in feeding grain to young and breeding sheep, especially in conjunction with roots, and have every reason to believe that fed in very moderate quantities conduces to make fine, sappy, and vigorous specimens.

6.—I do not believe that it is at all necessary that the pens should be kept cleaned to the floor. I have never found any detrimental results to the flock where the manure has remained all winter, provided a little gypsum or land plaster be scattered around in soft, greasy weather. The manure, however, should be removed directly the sheep are taken from the pens, or it will burn and be almost worthless.

7.—It is absolutely necessary that sheep have free admission to pure water at all times, and I would advocate easy reach of same inside of pen.

W. J. CLARK, T. D. McCALLUM,
Shepherd. Manager.

Lessons from the Sheep Fold.

1.—Let lambs run with older sheep and the profit of sheep breeding is almost or altogether lost, for either you will feed the older sheep too high or the lambs will get stunted, not being able to get the proper food needed. Take good care of lambs and feed liberally from birth until they are one year old, then they are able to cope with older sheep. I would also recommend keeping old sheep, such as are past the vigor of life, separate.

2.—Use a large, dry, and well-ventilated pen with wide doorway to yard. Let sheep have free access always, except on stormy days and very cold nights, and if there is an old sod field convenient to pen let sheep into it when not covered with snow. Feed in yard on fine days.

3.—I prefer good pea straw, bean straw and clover hay: (a) pea straw morning and noon, bean straw at night; (b) clover hay at night after ewes have lambed; (c) uncut if I have plenty of feed; cut if scarce of feed, and in either case in trough; do not like racks for sheep with foretop, such as Oxfords or Shropshires.

4.—I have never had any experience with ensilage, but have had good results from feeding roots. I feed from two to three pounds of roots to each ewe before lambing time, according to quality of straw, and one-half to one pound of oats until lambs are one week old; then I increase gradually: oats from two to three pounds; roots to what they will eat up clean.

5.—I prefer oats and bran, equal by measure, with a good sprinkling of nutted oil cake; one to two pounds of this mixture per day to each lamb. Answer for breeding ewes given in No. 4.

6.—The pens should be cleaned out before fermentation begins or any odor arises, and kept well bedded.

7.—Sheep should have free access to clean water and salt at will. Some think if sheep get roots they do not need water; they say if you offer them water they will not drink. I admit that they will hardly ever drink when you offer it them, but they will go and lick snow if there is any; but let them have access to water all the time. They will drink quite a lot, I don't care how many turnips they get. My pen of 32 breeding ewes drink three sixteen-quart pails per day. It is very essential to feed regularly.

Brant Co., Ont.

Wintering Sheep in Manitoba.

My experience teaches me always to keep lambs separate from the older sheep. I feed my shearlings and older ones together, as lambs do not require nearly as much feed as sheep, but need it much better and more nutritious; whereas, if fed together the older ones crowd the lambs back, and therefore they cannot do as well.

I allow my sheep to have access to the pens and yards night and day, and I find they do much better than when closed up at night.

I feed hay and oat sheaves; hay night and morning in racks in the pens; at noon, oat sheaves scattered around through the yards. I fed pea straw one winter. I believe sheep will do well on it, but one has to give them a large quantity, as I found they would only eat the leaves and finest of the vines. I have not as yet fed cut straw or hay. I believe it would be a saving in fodder, but where

a person has to hire his help the expense in cutting would be more than the saving in fodder where hay is as cheap as it is in Manitoba. A few roots are good for any kind of sheep—lambs, breeding ewes, or fattening sheep.

I feed from a quarter to a half pound of grain each per day to lambs and breeding ewes. It is not necessary to clean out their pens until it begins to thaw in the spring. I believe where sheep have access to abundance of clean snow they do as well on it as water. I have answered your questions, but a great deal of the success of winter feeding depends not only on the amount of feed and the quality, but also on the condition the sheep are in in the fall and the way they are attended to. I see by Mr. Bowman's letter that he recommends a run on rape for getting sheep into good condition for going into winter quarters. I have grown a small field of rape every year and find it an excellent thing, but where farmers have some summer-fallow the sheep do equally as well on the fresh weeds as on rape, thereby saving the expense of sowing rape, and the sheep also enrich the land and tramp it firm. When sheep are in good condition to go into winter quarters they can be wintered well with at least one-third less expense. I find sheep will do as well on upland weedy hay, well cured, as they will on red top or other coarse hay and one half pound of grain per day. They should be penned off with about fifty in each pen and a good yard to each pen, although I have one hundred in each pen. I have sufficient racks and troughs combined and still they waste a little hay, but I find they eat more and waste less by feeding carefully and giving them just sufficient to keep them picking until the next feed. Another important thing is to clean out their racks of old feed before every meal. In order to keep the wool clean (while feeding hay and grain) I shut them out in the yard, then the large doors are thrown open, giving them all an equal chance at the grain. If any of the sheep are not doing well I cull them out and put them with the lambs, where they will have a better show.

They should have salt once a week or rock salt where they could have access to it at times. If sheep have access to water one should be sure it is not stagnant water, as it is more injurious to sheep than any other stock.

Emerson, Man.

A Successful Manitoba Sheep Raiser's Experience.

1.—We do not find it necessary to keep the stock ewe lambs separate from the ewes, the wedder lambs having been sold to the butcher partly during summer and the balance at the beginning of winter.

2.—We allow the sheep to go out and in to their sheds at all times, and it is only during very cold or stormy weather that they stay inside.

3.—Straw of all kinds—wheat, barley, oats, and peas. The greener the grain when cut, the better is the fodder. In fine weather the chaffiest of the straw is spread upon the snow, and they eat it up readily. This is supplemented by what hay they can eat fed to them in the sheds. The fodder is all uncut.

4.—Turnips are an excellent feed for sheep, but we have not had so much experience with them in this country as we could wish. We sow from ten to twenty acres each year with rape upon the summer-fallow, and in the fall when the prairie grasses are getting hard and dry, give the flock a daily turn on it, with an outrun on the stubbles, which soon puts them in prime condition. We have had no trouble or loss with them on the rape.

5.—We give the ewes a little oats and bran a week or two before and after lambing, which is discontinued as soon as there is a full bite of grass.

6.—We only put as much bedding in the sheds as keeps them dry and comfortable. It is tramped so firmly that there is no heating or bad smell, and it is only necessary to clean out the sheds once a year, during summer, when it is hauled to the fallow break. It is the best manure that can be made on a farm.

7.—Let them have free access to water at all times.

Niverville, Man.

WM. & J. WALLACE.

Valuable Suggestions on Feeding Lambs and Breeding Ewes.

1.—I should most certainly keep lambs and older sheep apart while in their winter pens, especially in the case of rams, as the older ones knock the smaller ones about, and lambs need a better class of food to keep them growing.

2.—I do not consider it wise to confine any sheep to close pens at any time. Let them have a dry, roomy yard to run, with a comfortable shed to go into when they so desire. They know best when to do that. When the weather is fit at all they are better fed outside.

3.—Clover hay, pea straw, and corn fodder; fed in racks uncut. To breeding ewes hay once a day, pea straw twice; lambs, hay twice, pea straw once; clearing out the racks clean each time before again feeding.

4.—Sliced roots (swede turnips preferred) to breeding ewes, six pounds once per day until after lambing; then after that all they can eat of good clean, wholesome sliced swedes. Lambs from three to four pounds twice each day, with good success after thirty years' experience among sheep every day.

5.—I feed breeding ewes grain once a day during the winter before lambing, one pint each day of a mixture of $\frac{1}{2}$ oats and $\frac{1}{2}$ corn or peas; after lambing I double it, one pint twice a day for lambs. I feed from $\frac{1}{2}$ pint to 1 pint oats twice each day, and to fatten lambs add a little corn or peas, oil cake and bran. I recommend but very little strong grain, such as peas or corn, for lambs.

6.—Keep pens clean and dry, with plenty of bedding. When sheep run out and in at will, "as they ought to," three times will be quite sufficient during the winter to clean out pens. If sheep are confined inside they sweat and do not do well in any way.

7.—Sheep should have plenty of fresh water to get at will, but if they get a fair quantity of roots they will not drink in very cold weather. I am pleased to see you take up this department, for we sheep-men must all benefit by hearing each one's experience in feeding and tending the flock.

HENRY ARKELL,

"Farnham Farm."

Wellington Co., Ont.

Trouble with Rape and Early Frost.

I saw in your issue of January 1st where Mr. Jas. Bowman replied to your questions on wintering sheep. He covers my mode of management, except that I do not put my ewes on rape, as I have lost a number by early frosts while on rape. You will please find enclosed one dollar for my subscription to the ADVOCATE for 1897.

WM. DONALDSON.

Oxford Co., Ont.

FARM.

Handling and Applying Farm Manure.

(Continued from page 34.)

QUESTIONS.

- 1.—Do you use cut or uncut straw or some other material for bedding? Which do you prefer, and why?
- 2.—Do you consider there is any or much advantage in having manure made in box stalls, or sheds, over ordinary stalls where stock is tied?
- 3.—Do you consider it important to mix the manure from the different kinds of stock? If so, why?
- 4.—How do you manage to save the liquid and solid manure without loss?
- 5.—Do you consider it important that manure should ferment before being applied to the land? If so, do you haul it into large piles in the fields or give the pile in the yard any special attention during the winter?
- 6.—Have you tried spreading the fresh manure on the frozen fields as it is made throughout the winter, and what is your opinion of the practice from a labor-saving and manure-economizing standpoint?
- 7.—Assuming that you follow out in a general way a certain rotation of cropping, to which crop or crops do you consider farmyard manure most profitably applied?

Sawdust for Bedding.

1.—Keeping a very large herd of stock on a limited number of acres, I am very economical with bedding and absorbents. I never use any straw for bedding, except what is passed through the manger and the best picked out by the cattle; the balance (very little) is used for bedding. As a substitute, I freely use hardwood sawdust, which not only keeps the cattle cleaner than anything else I can use, but makes an excellent absorbent. It absorbs all the liquid, which is slowly liberated when it comes in contact with the soil and moisture. Have also used forest leaves with grand results as an absorbent and very direct response when applied to crops. When straw is used for bedding, believe it would pay to cut it all.

2.—Never practiced running stock loose in box stalls or sheds, but consider it would make excellent manure.

3.—It is very important to mix the different kinds of manure as much as possible. Horse manure, being very heating, often "fire-fangs" if put in one pile, but when mixed with cattle manure that danger is avoided (when roots or corn ensilage are liberally fed the manure is generally moist), besides it makes a better mixture for all crops. Where possible, there is no better place for hog manure than mixed with the other manures, which warm it up.

4.—The sawdust is all the absorbent I require.

5.—Have paid no special attention to manure in winter besides keeping in a nice even pile and all kinds well mixed.

6.—Never applied fresh manure on frozen fields. Have watched results with others; believe it is good on level land. My farm being somewhat undulating, the danger would be of washing the manure from the higher points to the valleys where it is least needed. Believe it would be great economy in labor.

7.—Always apply manure to root crops, such as turnips, mangels, corn, potatoes, etc.; balance on fall wheat ground. Prefer, when possible, for corn, wheat, or any other grain crop, to apply manure on top and work it in with a disk or spading harrow. I am positive on my soil (sandy loam with some clay loam) the nearer I can keep the manure on top, as long as it is covered, the better and more direct results will be obtained. As described, my manure is always short. I have no trouble in doing this. I believe long manure applied in spring and plowed under, for mellow land like mine, for oats, barley or peas (only in exceptional cases), is worse than useless for the ensuing crop. It may do in a damp season, but in a dry season my experience has been very discouraging.

A. C. HALLMAN.

Waterloo Co., Ont.

A Good System with "Trust in Providence."

1.—I use cut straw for bedding in preference to uncut; have used forest leaves and sawdust, but think cut straw more convenient to handle.

2.—Think there is no advantage in having manure made in box stalls, but rather the contrary, unless there is an abundant supply of bedding to keep the animals clean. If sufficient bedding is used, then portions, especially around the walls, will remain dry and unsuitable to apply to the land. On the other hand, the ordinary cow stall is not always provided with a water-tight gutter to save the liquid manure, and if not, then there would be an advantage in the box stall.

3.—It would largely depend on how the manure was to be disposed of. If drawn directly from the stables and spread on the land at once it would hardly pay for the extra trouble in handling to mix it before applying. If, however, it is drawn to field and placed in large heaps to remain so until spring, or if allowed to accumulate in considerable quantities in the barnyard before being drawn to the field, two advantages would be secured: 1st, uniformity of quality, and, 2nd, more convenience in handling, as the comparatively light horse manure would render the solid and heavy manure from the cow stable more porous and easier to spread evenly.

4.—By the liberal use of absorbents and applying directly to the land, and not allowing the manure to ferment in heaps either in the field or sheds.

5.—I think, as a rule, manure loses in value in proportion to the amount of fermentation that is allowed to take place. Formerly I was in the habit of hauling to the field in winter and piling in large heaps so as to induce fermentation to destroy foul seeds and rot the straw portions, but now think there is loss accompanying the escape into the air of the gases formed as fermentation proceeds; also rains wash in the soil where the heap stands more than its share of fertilizing material, and when the straw used for feed and bedding is cut it will not interfere with the cultivation of the soil. The pile in the yard should be under cover to prevent leaching by rain, as it is a much greater expense to provide a water-tight yard basin large enough to hold the combined accumulation of manure, snow and rain than to have a suitable shed where the cattle can tramp the manure and thus prevent fermentation, and at the same time it will be protected from the elements.

6.—I have adopted the practice of hauling the manure to the fields and spreading it on the surface during winter, regardless of the depth of the snow, and think it the most labor-saving method. Where land is comparatively level, I think there is little loss, but on hilly ground it would be objectionable, as rain would wash a good deal of it away. On hilly ground I would save the manure under cover till the frost was out of the ground in spring, then haul the manure, spread on the surface and plow or cultivate in at once.

7.—To all hoed or cultivated crops, such as corn, potatoes, roots, beans, and rape, and to wheat and barley, unless the land was manured for the previous crop. If manure is free from foul seeds I find it a very successful plan to spread during the winter or spring on fall plowing, cultivate thoroughly into the soil, and seed down to grass, using wheat or barley as a nurse crop. This method almost invariably insures a good "catch." If the manure contains weed seeds I would plant with a hoed crop and thus be able to prevent the growth of weeds by cultivation after the seeds had germinated.

My ideal method is to save manure under cover, prevent fermentation, and spread on land shortly before seed time, cultivate thoroughly, sow good seed in proper season, keep your fences in safe repair, and trust in Providence for the rest.

D. P. L. CAMPBELL.

Prescott Co., Ont.

Advanced Methods of Manure Handling in Quebec.

1.—We use mostly the uncut straw; having fifteen box stalls, then the horse and cow stables accommodating twelve horses and thirty cows tied up, it would take quite a time to cut all the straw used. Otherwise, I prefer all cut, as the manure could be spread easier and go further, as where there are no bad weeds it could be spread on without any heating or fermenting process.

2.—I believe the best manure is made in box stalls.

3.—I consider it is of great importance to mix manure from the different kinds of stock; the horse manure, if alone, is very apt to heat or "fire-fang"—in that case it loses its value; the cow manure, if put alone, will freeze and can't be hauled out during the winter, but when well mixed and

allowed to heat for say eight days, then drawn to the field where to be used, a great deal of labor is saved.

4.—I find no trouble in saving the liquid manure by using enough straw to absorb it, causing little or no loss.

5.—I think it is better that manure should ferment, especially if the bedding used is uncut. Mix all the different kinds together in a pile near the yard and draw to the field direct, say every week. If the snow is not too deep, spread it right on; but if deep, I prefer putting it in a large pile or heap, then it can be drawn and spread early in spring before vegetation commences.

6.—If, as stated above, the bedding is cut, or even uncut, I would spread it right on. Last win-

The liquid manure is most easily saved by the use of absorbents, such as straw, dry muck or sawdust. While cut straw will absorb considerably more liquid than that uncut, I do not think it would pay for the labor. The plan I use myself is to bed my horses heavily and to clean out all soiled straw. The horse manure is then spread in wide, deep gutters behind the cattle, and I find that all the liquid is taken up and at the same time the horse and cow manures are evenly mixed.

Box stalls are very convenient, especially for young cattle, and more straw can be worked up into manure in them than in the ordinary tie stall, but except that the labor of cleaning them daily can be saved, I do not think they offer any advantage, and even with them the manure should

be forked over once or twice before being hauled to the field. In my own case I have them cleaned three or four times during the winter, and mixed with the other manure.

I have never spread fresh manure on frozen ground, but I should think that under certain conditions it would be the best way of using it. If the ground were dry and pretty level, with not much snow, I believe it would be of great advantage and save much labor at a very busy time; but if the ground were wet or hilly, thereby allowing much water to run off upon the surface, most of the manure would be lost. In most cases I think greater benefit would be derived from allowing the manure to heat and ferment and applying it in the spring.

I think manure should be used on a hoed crop, to be followed by a grain crop seeded down to grass. If any special manures are used they should be applied with the last crop. This is my general plan, with many exceptions. Living down by the sea as I do, I am often able to gather large quantities of kelp (sea weeds) in the fall (this year I have about 400 loads), and when I have this I put in my root crop with it, and apply the stable manure to the grain crop following.

JOHN GREGORY.

Antigonish Co., N. S.

"My Way of Handling and Applying Manure."

1.—Uncut straw; it would take too much time to cut. I use abundance of straw for bedding.

2.—Considerable advantage in making manure in box stalls; can make manure faster, with less waste, but must be cleaned out often or it will not be good for the stock running in them.

3.—If manure lies in yard or under shed, horse and cattle manure should be mixed; but if hauled out from stables to field, put horse manure in the hollows or low places of fields and cattle manure on knolls and hills, and put pig manure on the poorest spots; spread evenly.

4.—By using lots of straw and raking all the fine stuff in trenches.

5.—No; I would try to keep it from fermenting.

6.—Generally spread from 12 to 15 acres with fresh manure when ground is frozen; it saves labor in summer, when a farmer is always busy, and no manure is lost.

7.—Peas, corn, and all roots. I sow the field I get covered with manure in winter with peas. In early spring I cover our corn and root ground with manure, and what is left and made after that I put on the summer-fallow.

J. H. JULL.

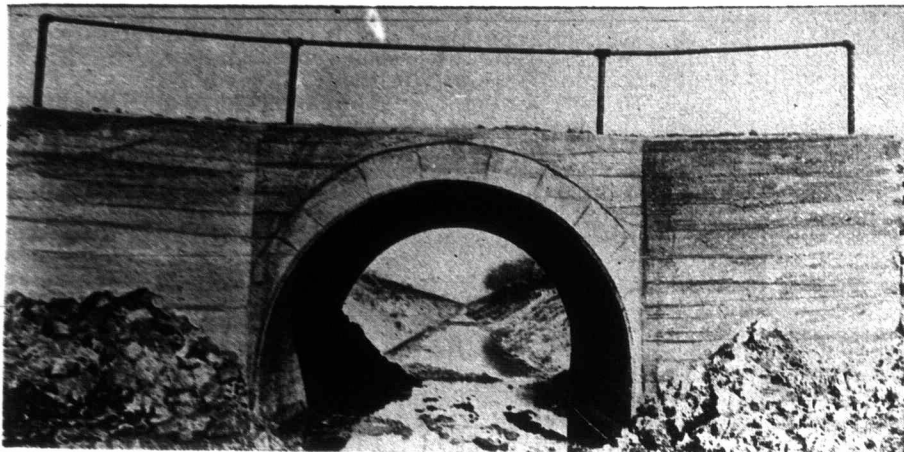
Brant Co., Ont.

Cement Concrete in Road Work.

In many sections cement concrete has largely displaced expensive masonry and revolutionized the construction of barn walls, floors, and other farm structures during late years. With the use of Queenston and other good cements for the above purposes hundreds of farmers are now familiar and thoroughly satisfied. A little has also been done in cheapening the cost of building culverts and other road structures of the sort by municipalities instead of using the more expensive and often unsatisfactory sewer pipes or large tiles. It is a matter that do well to investigate.

The accompanying illustrations give an idea of the plan and appearance of such work. They represent a concrete arch over a small stream in the Township of Gosfield, near Kingsville, Ont. The work was laid out and superintended by Mr. Isaac Usher, of Thorold, Ont., who, we understand, is giving his services freely in that respect. Queenston cement and coarse gravel were used in the proportions of one of the former to four of the latter. Mr. Usher has written us the following description of how the work was done, which will be of service to others:—

"The foundations for bench and wing walls were excavated about three feet below the bed of the stream to very hard, solid clay, so there is no



CEMENT CONCRETE ARCH OVER STREAM, ESSEX COUNTY, ONT.

ter we drew it direct from the box stalls with good results. It is labor-saving; also, manure-economizing.

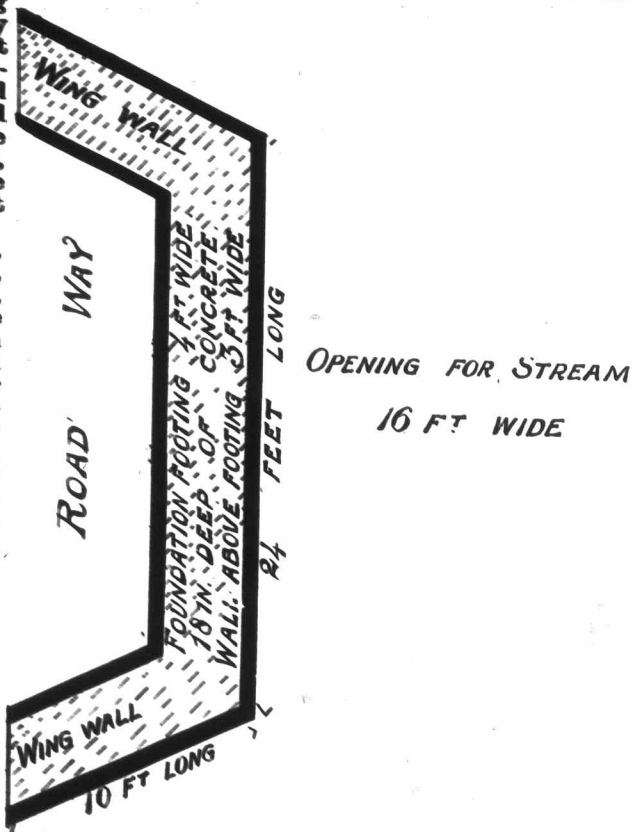
7.—We have had good results from top-dressing pasture in winter or early in spring; it will carry lots of stock, leaving the sod with a close bottom to be plowed under the next fall. Our land so used will grow any kind of crop; ensilage corn does well without any further manuring, in most years averaging ten feet in length and producing in some cases thirty tons per arpent (French term for acre).

ROBERT NESS,

Chateauguay Co., Que. "Woodside Farm."

Nova Scotia Methods of Manuring.

I consider it highly important that manure be kept under cover, so as to protect it from all washing and leaching, and also that the manure from different kinds of stock be mixed together. A



GROUND PLAN CEMENT CONCRETE ARCH.

little consideration will show how important is this last. The manure from different kinds of animals differs greatly in chemical composition, and while that from the cow and hog is of a cold, unheating nature, that from the horse and sheep will rapidly heat and spoil if kept in piles by themselves; but by mixing, the more heating will warm up the colder, decompose the straw and bring about the fermentation necessary to make the plant food in the manure more available to crops. Also, some of the animals, as working horses, fattening stock, and milk cows, are more highly fed than others, and the manure is therefore richer. If the manure then be not all mixed together, we will have several lots each differing from the others both in chemical composition and mechanical texture, instead of one homogeneous pile.

danger of the scour of the stream undermining the foundations. The footings for bench and wing walls are four feet wide and about eighteen inches in thickness, made of coarse lake gravel; mixed four parts gravel and one part cement. This mixture was well mixed before putting in any water, then only enough water used to slightly moisten; then put in layers about six inches thick, and rammed solid with iron rammers. When footings foundations were finished then the walls were laid out three feet wide in the center of footings and built about four and a half feet high to the spring line of half circle arch, then wooden centers were placed in position and covered with two by four inch scantlings, dressed on both sides so as to be even in thickness, edges levelled to fit neatly the radius of circles, so when centers were removed the inside of arch was absolutely smooth, having a finish almost as smooth as a well-plastered wall. The arch and wing walls were all carried up together. The thickness of concrete wing over the arch is fifteen inches, put in sections about fifteen inches wide, on each side of arch; this was done by setting up a fifteen inch plank on edge each side the whole length of the arch. The planks were firmly braced to the wooden centers so the concrete could be firmly rammed. When the planks were filled on each side, then the wing walls were built up to the same height, then planks were moved on the arch another fifteen inches and filled again as before, until the structure was completed, leaving the planks, in all cases, not less than half a day before moving them. When the arch was turned, the wing and parapet walls on the sides were built up about one foot above the arch to retain the earth and gravel over the arch. The earth and gravel was filled up in the center about one foot above the top of wing and parapet walls and sloped neatly to the edge of all walls. All walls were built on the inside next to the earth with a frost batter; that is, sloping about one-quarter of an inch to the foot, raised so that the earth rests on the walls. In no case should back of walls rest on the earth; if so, the frost will surely destroy them, and it is always important that wing walls should be made heavy and strong to protect them against the thrust of the earth when frozen; this is an important matter, and is often lost sight of. Bridges and culverts of all kinds and sizes can be built very cheaply where good coarse gravel can be had; and where such structures are properly built, with good cement, they are the cheapest and best that can be built. They do not require skilled labor, consequently the outlay of money is small."

Timothy Roots.

To the Editor FARMER'S ADVOCATE:

SIR,—Concerning the depth to which timothy roots penetrate, I regret to say that I have no actual data on the subject. I have no doubt that Mr. Thomas Baty found the rootlets at the depth he states, but it seems to me that this must be exceptional, as all the specimens of timothy plants which I have available for examination have abundant roots close to the surface, as generally described in this plant. I do not care to say more than the above just now, but have taken a note to examine into this matter next spring, when I will write to you again.

J. FLETCHER.

DAIRY.

The Export Butter Trade.

To the Editor FARMER'S ADVOCATE:

DEAR SIR,—In reply to your favor of 15th inst., we have only to say that we have been shipping butter for nine or ten creameries of this section on consignment to Manchester. We have been collecting the butter of these creameries at Stratford, making a practice of examining all the butter before it leaves us here, putting it into a car by itself so that it will get quick despatch and then ship it to the Manchester market. This butter we have had made according to our own instructions, with only half an ounce of salt per pound of butter, without any coloring at all and packed in 56 lb. square packages. On arrival in England it has been selling for very good prices; the very first shipment made early in December sold for 106s., the second and third shipments sold for 104s. for all lots that were finest. But it happened that one or two lots were not put up quite as we wished, or were in some way defective, and these lots sold for 100s. to 102s.; but in every case the price was more satisfactory to the consignors than if they had sold the butter on the local market. The lowest price realized was 103.1c. at Stratford, after all charges of commission, freight, etc., had been deducted; the highest price was 20.37c., after the same charges had been deducted, so that, as we have said, the prices were in all cases perfectly satisfactory.

In the early shipments freight rates were extremely high and rates of exchange very low, but in the more recent shipments rates of freight and rates of exchange have been more favorable, and we expect present favorable rates will continue until opening of navigation in the spring. We tried several markets, but have concluded that the Manchester market is more satisfactory; we have been able to get several shillings per cwt. more in Manchester market than in any other market that we have been shipping to, and in fact we find that this also is the experience of some others who have been shipping there.

T. BALLANTYNE & SONS.
Stratford, Jan. 26th.

The Ontario Creameries Association Convention.

The twelfth, and probably the last, annual convention of the Ontario Creameries Association was held in St. Mary's on Jan. 13th, 14th and 15th inst. It was, by all odds, the best-attended convention ever held by this Association, there being at one or two of the sessions some 600 or over in attendance, mostly from the surrounding neighborhood, who took a deep interest in the excellent addresses given, and also took part in discussing the various questions brought up. This Association was organized in 1880, chiefly through the instrumentality of Mr. M. Moyer, now of Toronto, and Mr. John Hannah, of Seaforth, who prevailed upon the Hon. A. M. Ross, Commissioner of Agriculture, in the interest of co-operative buttermaking, to assist the enterprise, which he did by a grant of \$500. At that time our butter was a reproach to the intelligence of Canadians, but through the influence of the Association, directly and indirectly, the creamery business has been fostered until now we are on a fair way to favorable recognition in the best markets of the world by reason of co-operative effort. There are now 100 regular creameries in Ontario, and 150 winter creameries running at present. This interest has been looked after by the Ontario Creameries Association, but from this time forward will be in charge of the amalgamated associations of the Eastern and Western Dairywomen's Associations and the Creameries Association into the Eastern and Western Butter and Cheese Associations, with an executive, composed of three representatives from each association, to act as a central advisory board. This new arrangement was agreed to by the dairy associations, but a number of the Creamery Association members, being somewhat dubious as to their interests being looked after by the amalgamated associations, decided not to disband, and therefore passed the following resolution: "We, representatives of Creamery Association, do hereby express our disapproval of the action of the joint committees, at Toronto, in amalgamating the three dairy associations into two butter and cheese associations, and do hereby protest against the same, and strongly advise election of a board of officers for the Ontario Creameries Association for 1897. We at same time believe that if amalgamation is desirable it would be advisable to form one association only, and put the dairy business into the hands of a dairy commissioner who will be directly under the control of the Minister of Agriculture."

The following officers were elected for the ensuing year: President, A. Wenger, Ayrton; 1st Vice-President, J. Croil, Montreal; 3rd Vice-President, T. J. Millar, Spencerville. Directors—W. D. McCrimmon, Glen Roy; A. Campbell, Ormond; C. R. Touser, Iroquois; John Sprague, Ameliasburg; A. A. Wright, Renfrew; F. L. Green, Greenwood; Jas. Carmichael, Arva; W. G. Walton, Hamilton; A. Q. Bobier, Exeter; Daniel Eckstein, Neustadt; Jas. Struthers, Owen Sound; Wm. Halliday, Chesley, and Wm. H. Snider, St. Jacob's. No doubt if the amalgamated associations do—as we suppose they will—their duty to the buttermaking interest the Creamery Association will disband, leaving the work to those whose duty it shall be to look after it.

The President's address made reference to the wisdom of the Provincial Minister of Agriculture in assisting the dairy associations and in establishing the best dairy schools on the Continent for the proper training of butter and cheese makers. Reference was also made to the excellent work accomplished by Prof. Robertson and by the Hon. Sydney Fisher, the Dominion Minister of Agriculture, who has promised refrigerator cars and apartments on steamships for placing our creamery butter on the British market safely, speedily and cheaply. Our exports of creamery butter have more than doubled again this year over last. Before concluding, Mr. Derbyshire made a strong appeal for the production of more milk of better quality and at less cost. To do this a longer milking period is a necessity. A cow cannot earn a living in six months no more than a man. We must arouse to keep only dairy cows, to grow plenty of corn, to build silos, to feed liberally a balanced ration, and to take all the milk to a creamery or cheese factory; to be energetic and watchful, then our business will flourish.

Food Cost of a Pound of Butter.—Prof. Dean under this heading referred to the necessity of keeping only good dairy cows, comfortably, and feeding them wisely with food adapted to the production of milk. In the College herd an effort has been made to ascertain the food cost of butter. The food used was mixed grass pasture in summer, and silage, mangels, hay, and chop in winter. The cost of feeding the cows of this herd was from \$24 to \$30, an average of \$31 per head for one year. They gave from 120 to 424 pounds or an average of 244 pounds of butter per year. The worst cow was fed at a loss of \$26, and the best at a profit of \$47.30 for the year. The best cow was dry three weeks, but her food during that time was charged against her. She produced butter at 8.8 cents per pound; 13.9 cents was the average cost of the butter from the entire herd. By weeding out poor cows, and by feeding more wisely, Prof. Dean hopes to reduce this cost very materially. In June the butter cost 4 cents per pound, and in December 18.8 cents. The average food cost for the year, not including the time of their being dry, was 12.1 cents per pound of butter. The daily ration fed in winter was 40 pounds of silage, 10 pounds of hay, 25 of mangels, and 10 pounds of a mixture of ground

oats and peas and oil cake. This was considered as much as was profitable to feed.

The Old and the New Methods of Raising Cream was also discussed by Prof. Dean, who has found from investigation in 30 dairies in the vicinity of Guelph that from 1/4 of 1 per cent. to 2 per cent. of fat is being left in the skim milk. That is in many cases 25 per cent. of the entire butter in the new milk. It was here mentioned that the butter that was made on the farms usually sold at a low price. The cream separator was referred to as the most economical means of separating cream. It should be done at a temperature of from 85 to 95 degrees, and 130 degrees was spoken of as better still, because bad odors would then tend to pass off should they be present, as they often are in winter milk.

"Dairy Ideas" was the subject of an address by Hon. W. D. Hoard, of Wisconsin. At the end of forty years' experience with dairying it pained him to realize how shallow and ignorant he was with regard to his business, but it pained him still more to see so many men not pained at all with these things. Many will give a gelding better care and feed than a maternal cow. They will feed a hog to the verge of cholera, while the cow is living at the straw stack.

The value of a well-bred sire was emphasized. Certain breeds of dairy cattle have been bred along certain lines for a long time, so that the rope of prepotency has become stronger and stronger as the strands of pedigree have been woven in. By breeding, weeding, care, and feeding, Mr. Gooderich, a successful Wisconsin dairyman, increased the average annual production of his herd since 1882 from 175 pounds of butter per cow to 353 pounds per cow in 1894. Dairying must be conducted more intelligently if we are to succeed in it. Fine butter and fine cheese are sought by people of refined tastes; there is, therefore, no money in producing an article of ordinary or inferior quality. In grain farming a fool can get as much for his product as the more intelligent, but not so in dairying. Every big market can supply tons of poor butter at from 3 to 5 cents per pound, while the good article brings from 20 to 25 cents per pound. The cow end of the question must be considered. If we have the right sort of cow, feed her properly, and make the butter as it should be, the market will take care of itself. Many cows are running their owners into debt. A little attention to testing the cows will find these out. It is unprofitable to leave cows out in the cold, as they use the fat that should make butter to warm their bodies. We can not afford to warm cows with 20-cent butter. A cow that gives only 150 pounds of butter in a year will owe her owner from 25 to 30 pounds at the end of the year for her board, without considering the labor of caring for her. Usually cows milk too short seasons. From 10 to 11 months is not too long. One Mr. Wright, from Renfrew County, claimed that he never allowed his cows to go dry at all before their calving, but used the last month's milk to feed back to the cows, calves, and pigs. He asked, could we afford to rest our hired men several months in the year while we are paying them? Cows too must work all the time. Where cheese is made in summer, the milk must be made into butter in the winter. He therefore pleaded for winter creameries. He advised that one central factory be fitted up for buttermaking, and surrounding factories be used as separating stations. Better butter will then be made at less cost than if more factories are used. To keep cows milking the heifer should be milked twelve or fourteen months after her first calf. Several members claimed better results from allowing their cows to go dry six weeks of each year. Mr. Hoard advised that cows should come in during September and October, because there is a tendency in every cow to fall away in milk at the end of six months, which comes with the fall cow about the time of spring pasture, which will tend to carry her over that usual shrinking period with an increase in her milk flow.

Cold Storage was discussed by Prof. J. W. Robertson, Dominion Dairy Commissioner, who claimed that the price of our produce in the British market is governed more by its condition in freshness and appearance than by any other factor. We make good produce and can sell it right when it reaches the consumers in first-class condition. Cold storage at the factories, on the railways and on the steamboats is what is needed to gain us the desired end. All civilized countries send their surplus food to Great Britain, and Canadians must either succeed or fail in the competition for that market. Denmark has succeeded with her butter by using cold storage. Canadian wheat, flour, and cheese stand well there because they are not perishable to an extent to be injured in transportation from here to there. We supply them nearly two-thirds of their cheese, but of the \$60,000,000 worth of butter they purchase we send only some \$500,000 worth. We therefore have a great opportunity to swell our share of butter to them by supplying a desirable quality in fine form. Our egg and poultry trade with England would much increase if we had a good system of cold storage. The cold storage system was explained, in which the practical points to dairymen were brought out as set forth in our Jan. 15th issue in an article upon "Storage of Ice."

The Hon. Sydney Fisher claimed that he chose the business of dairying because he considered it the highest branch of agriculture. When we sell butter we sell skill and no fertility. Butter, too, is cheaply transported because it is of little bulk. The speaker claimed that the eastern counties of Quebec, in which his farm is situated, once had the lead in

the production of fine Canadian butter, but since Ontario has introduced the co-operative system she had forged ahead. The Canadian output of butter has for some three or four years been doubling up, and the price is improving with our improved reputation. Mr. Fisher referred to shipments of butter sent from Prince Albert, in the Northwest Territory, by cold storage transportation, bringing in England 114 shillings per cwt. He then outlined his intention, as Minister of Agriculture, to provide a system of cold storage so that all our creamery butter will reach the market in good condition. In order to keep the butter perfect after making, every co-operative creamery that will put up a suitable cold storage building will receive a bonus of \$100, in three payments—\$50 the first year, and \$25 each of the two following years. Weekly trains of insulated cold-storage cars will be run to carry the butter to the steamers, which will also be provided with insulated cold compartments. This is all to be done at the lowest possible cost.

Mr. Fisher interjected a few practical suggestions in dairy management from his own experience. He advised that men milk their cows twelve months of the year if by so doing they can make more money, but he preferred his cows to go dry about two months. He would not have his whole herd dry at the same time, but would have his cows come in at different seasons of the year. He advised that dairy farmers keep dairy-bred cows, and feed them a milk and butter producing food. Mr. Fisher has been feeding corn ensilage for 14 years, and claimed that he could not make a success in winter buttermaking without it. He also feeds bran, oil cake and cotton-seed meal to balance the ration; also clover hay once a day in winter. He has found the "Robertson mixture" of corn, beans and sunflowers a great success for silage. He finds his herd of pure-bred Guernsey cows profitable winter as well as summer butter producers.

Feeding Skim Milk.—Hon. Mr. Hoard referred to an experiment conducted at his creamery in which he fed 36 hogs for 56 days on skim milk alone, in which transaction he made 22½ cents per cwt. of skim milk. He then fed 36 more, of the same age and sort, 56 days with skim milk, oil meal and middlings, and made 27.35 cents per cwt. of skim milk, besides a profit on the other foods. He also found that 100 pounds of skim milk fed alone gave 10 pounds of gain, and a bushel of corn fed alone gave 5 pounds of gain, while the two fed together produced 13 pounds of gain.

The sum of the difference between the profits made by one dairyman and the profits made by another is largely determined by the ability and wisdom of the dairyman. The man who keeps and feeds poor cows puts his nose on the grindstone and bears down. Reference was made to an article on the "Cost of a Pound of Butter," in the FARMER'S ADVOCATE, in which it was estimated that a "200 pounds cow" produced her butter at 15½ cents per pound, while the butter from the "175 pounds cow" cost 18 cents per pound for food alone. We ought to breed, select, feed, and do everything possible to get rid of these costly cows. If half the dairy cows now kept in Canada were gotten rid of, and their feed and care put on the other half, we would make very much more profit. The butter from Mr. Hoard's Guernsey herd cost from 10 to 11 cents per pound.

"Fodder Grasses."—Prof. Fletcher, Dominion Botanist and Entomologist, upon taking up this subject said that he had carried on experiments sufficiently long to determine the best grasses for Canada. Awnless Brome grass he has found to be the best for the Northwest farmers, where corn cannot be successfully grown. It is succulent, hardy, palatable, and produces a liberal quantity. Orchard grass is too little grown in this country. It comes early, and therefore is suitable for mixing with red clover, as they each blossom about the same time. Lucern is not a grass, but it should occupy a larger place in our fodder crops. Prof. Fletcher recommended the following mixture for permanent pasture: Timothy, 6 pounds; meadow fescue, 4 pounds; orchard grass, 2 pounds; June grass, 1 pound; red top, 1 pound; mammoth clover, 2 pounds; lucern, 2 pounds; and white Dutch clover, 2 pounds per acre. This will cost about \$2.50 per acre, but it is worth it.

"Butter Packages."—Prof. Robertson spoke in favor of the square package. They should be made of ¾-inch spruce or basswood by practical box-makers. They should hold 56½ pounds, so that good 56 pounds will come out of them when they reach England. The box should be painted inside with melted paraffine wax, and lined with the best quality of parchment paper. No brine nor salt should be put on the butter after it has been put in the box. The butter should be covered with two ply of heavy parchment paper, and the top should fit down snugly. For the British market no color should be used, and from ½ to ¾ of an ounce of easily dissolved fine salt to each pound of butter.

Dairy Salt.—Visitors had a good opportunity of examining first-class dairy salt exhibited by the Windsor Salt Works Co. It is what is known as the "Diamond Crystal," from the fact that the crystals are of uniform diamond form. It is fine in the grain and easily dissolved.

This Year Better than Ever.

"Your paper has improved very much during the past year," writes Mr. S. E. Parnell, Lincoln Co., Ont., "and this year so far is even better than ever. It should be found in every farmer's home, for it is money well invested."

Western Ontario Dairymen's Convention.

The 20th annual convention of the Western Ontario Dairymen's Association was held in Brantford on Jan. 19, 20 and 21. The attendance was hardly up to that of last year, but that may be accounted for by the fact that Brantford is not situated in a strictly dairy section. The interest from start to finish was well sustained by reason of the excellence of the speakers and the practical character of their addresses and papers.

The President's address referred to the live topics of the Association work. The proposed amalgamation of the three dairy associations into the butter and cheese associations of Eastern and Western Associations was referred to by Mr. McLaren as a step in the right direction, as the united forces will disseminate as much information as heretofore and at much less cost. Reference was made to the influence this Association has had in placing Canadian cheese in the prominent position it now holds in the markets of the world. Inspector Millar's season's work was referred to in the highest terms, as was also that of Mr. Muir in the Middlesex Syndicate formed last spring. A belief was expressed that more syndicates will be formed during the coming spring, as the one operated in the past season has had the effect of improving and bringing about a greater uniformity of cheese than had heretofore been made in the same factories. A regret was expressed that the improvement looked for throughout the western portion of the Province has not been in keeping with the opportunities provided in the dairy schools, travelling instructors, etc. Badly flavored milk, due to the carelessness of patrons and a lack of the best attention to curing the cheese during the fall and winter months, has had much to do in preventing the highest quality of cheese being made. The use of a "starter" was blamed for much poor cheese. The feeding of turnips, rye, rape, apples and the like to milking cows was condemned in strong terms on the ground of its causing a serious present loss, by reason of reducing the selling price of the cheese from ¼ to 2½ cents per pound, and also because of the injury to the reputation of Canadian cheese. A hope was expressed that cheese factories would soon not open before May 1st, and close at the end of October, which would tend to improve the quality, price, and reputation of our whole cheese product. A strong appeal was made for the general introduction of some system of cold storage to be applied to the curing rooms during the hot summer weather, in order to prevent cheese becoming overheated. The same applies to the butter factories. The suggestion was made to have appointed a board of arbitrators in connection with each cheese board, for the purpose of settling disputes when they arise between makers, salesmen and buyers. The following resolution was therefore passed: "That this meeting would recommend to the Board of Directors that competent persons be appointed in the various dairy districts to arbitrate in cases where cheese have been rejected at the factories and to fix the loss sustained, if any, upon the proper parties."

The Secretary's report referred to the work accomplished during the past year as being much greater than that during the previous one. More addresses were given, a cheese and butter convention was held at Guelph College last spring, a number of local conventions were held, a greater number of factories were visited than ever before, correspondence has much increased, etc. A strong appeal was made for a larger membership, which was last year only 453. A regret was expressed that while there is urgent need of more instruction and inspection factorymen are not willing to pay their share of its cost. To make a visit to each factory in Western Ontario (350 in all) during the season, July and August, when instruction is most needed, at least eight instructors would be required, which would require almost three times as much money as the Association now has at its disposal for this purpose. It was recommended that each factory pay \$10.00, or a tax of 15 cents per patron be imposed to pay for sufficient instruction. Eastern Ontario is carrying on this work quite satisfactorily. This inspection is especially needed because of the unsanitary condition of many cheese and butter factories throughout the western portion of the Province. It has been suggested that the inspectors employed by the Associations be made officers of the Provincial Board of Health. The following resolution was therefore passed: "Recognizing the great need of better sanitary conditions in our cheese factories and creameries, this convention would urge this matter upon the attention of the Directors for the coming year, and also upon the attention of the Minister of Agriculture, and in order to bring this about would suggest that each inspector be appointed an officer of the Provincial Board of Health."

The endeavor to organize a number of syndicates, with the success of getting one into operation, was referred to; this one comprising seventeen factories, ranging from one making over 200 tons to some making less than 40 tons of cheese, located in the Ingersoll and London districts. The work of Mr. Muir, who had charge of the Syndicate, proved highly satisfactory and profitable. Letters were read from members of the Syndicate which testified strongly to the advantages of the system and their desire to join it next season, with Mr. Muir in charge. It was pointed out that one instructor could easily look after a larger number of factories than had the Syndicate in question,

which would lessen the cost to each. The financial condition of the Association was shown to be not over flush, there being a slightly heavier liability than the present assets would cover. Were even a small proportion of the dairymen to do their duty in becoming members of the Association, the condition of the treasury would experience no shortage.

Report of Inspector Millar.—One hundred and fifty-six visits were made to 109 cheese factories and 9 butter factories during the season, being the most ever made in one season. In June and July, by reason of much bad milk being sent to the factories, very many inferior cheese were made. This was considerably corrected after Mr. Millar's visits were made. When prices are low Mr. Millar believes in closer inspection, with a view to create a demand for Canadian cheese and therefore a better price. Five hundred and seventy-two samples of milk were tested with the Lactometer and 462 with the Babcock tester. Very few cases of tampering with milk were detected. Mr. Millar regrets that the system of paying for milk according to quality is not gaining much ground, and also that too many still persist in hauling home whey in the milk cans, which undoubtedly causes the loss of thousands of dollars to the dairymen of the Province each season.

Out of 51 factories reported upon in group I., only 2 were in first-class condition, 42 fair, and 7 in bad condition. Thirty-four were classed as clean, 10 as fair, and 7 as dirty. Thirty are tidy in appearance and 19 untidy. As to finish of cheese, 21 are reported as fine, 21 medium, and 9 as rough. In group II., including 52 factories, the average condition was much similar to those of group I., which was visited in December, with a view to giving instruction in curing, when much need was found for such a visit, as in many cases the temperature of the curing room was too low and the atmosphere too dry. The average condition of the Syndicate factories was somewhat better than the other groups, although one or two were classed untidy, dirty and rough, with curing rooms in bad condition during the latter part of the season.

The whey tanks are in too many cases positively dirty and are excellent breeding places for foul bacteria. They should be thoroughly cleaned at least once a week. Too often the floors, gutters, etc. are in bad, leaky condition, causing rotten pools of whey to lie beneath the factory. A strong appeal was made for a means of improving this condition. During the fall season bad flavor in cheese was caused by feeding cows turnips, apples, rape, and other bad food, which seriously lowered the price of such cheese.

Syndicate Instructor's Report.—Work commenced 2nd of June by making a hurried visit to all the factories, when suggestions thought necessary were given. Three factories were found making fine cheese, eight a harsh, gritty cheese, and five making cheese of uneven quality. The cause of the poor cheese was pointed out, with suggestions as to the manner of correcting the faults. Some were not using the hot-iron test, and some of those using it were not doing it properly. Owing to an accident after his second visit Mr. Muir was laid off for a month. As the season advanced a steady improvement was effected in the uniformity, quality, and finish of the cheese throughout the Syndicate factories. It is expected that better work will be accomplished next season, since the makers have learned the advantage of obeying the wishes of the Instructor.

"Care of Milk."—Mr. T. B. Millar, Instructor and Inspector, read the following paper: In the first place I would like to give you a slight idea of how I find the milk as delivered at factories. In the summer when the milk is being poured into the weighing-cans you will quite often find it off flavor—gassy, sour, or "cowy"; these three are very common, but there are innumerable other flavors. In the fall months such flavors as rape and turnip are frequently met with. The first three can be avoided by careful attention. The only remedy for the last two is in not feeding to milch cows rape, turnips or any other food that will produce bad flavored milk. Amongst the weeds that give bad flavors I would mention the leek, the ragweed, and the wild camilla. It is, therefore, the duty of every patron to see that these weeds do not exist in his pasture field. Then again, tainted milk may be caused by cows drinking dirty or stagnant water, lack of cleanliness in milking and in the care of the milk, neglect of straining and airing immediately after milking. But the chief cause of bad milk is dirt—dirty milk pails and cans, dirty milking yards, and dirty hog pens too near the milk stand or the place where the milk is left over night.

A number of the patrons do not strain the milk, and if you take a look at the strainer in the factory while the milk is being delivered you will see a sight that for variety would be hard to equal and harder to enumerate; but all these things tend to give a highly-flavored article. The milk for factory purposes is to be manufactured into food for human consumption, and so should receive the most careful attention. Only the milk from healthy cows and free access to salt every day should be used. The milker must be clean and tidy, using only tin pails, and should immediately after milking strain and thoroughly air the milk, handling it always in as cleanly a manner as possible until delivered at the factory. Milk that is sent to a factory without being strained should be returned to the patron at once, as it is not fit for the making of a first-class article of cheese.

All milk should be aerated, the sooner after milking the better. By aeration is meant the thorough exposure of the milk to the air. This may be done by pouring with a dipper or by allowing the milk to run slowly through small holes in a vessel, the milk falling in fine streams through the air into the milk can; or it may be run through one of the many aerators offered for sale by the dairy supply dealers. By aerating the milk animal odors and bad flavors escape, but to be of use the aeration must be performed in a pure atmosphere. Milk that has been aired will keep sweet longer, other conditions being equal, than milk that has not been so treated, but the chief advantage claimed for aeration is that the milk is of a much better flavor. Where patrons of factories have practiced this system they find that it is not necessary to cool milk with water during the hottest weather. Thoroughly air the milk until cooled. Milk keeps better in small quantities, and when two cans are used the evening and the morning milkings should not be mixed.

The milk stands should be constructed so as to protect the milk from sun and rain, and should be in a clean place, away from anything that is likely to give the milk a bad flavor. When the whey is returned in the milk cans it should be at once taken to the hog pen and emptied, and not emptied into a barrel by the milk stand to be used as needed, which is positively a filthy habit and should not be practiced by any patron.

After the pails and cans have been used they should be washed with tepid water and scalded thoroughly, then placed where they will get plenty of sunlight. A cloth should never be used on a vessel in the dairy after it has been scalded, for if the water is as hot as it should be (boiling) the vessel will soon dry off itself. Never use soap on tinware, as it is apt to leave a soapy flavor, but clean occasionally with salt, which is much better and will leave your tinware in a clean, sweet condition.

In conclusion, I would say that pure milk can be obtained only through healthy cows, pure food, pure water, pure air, and cleanly handling.

In the discussion some one recommended salt and sal soda as good to clean milk cans, when a brush is used, followed by thorough rinsing. J. H. Monrad, of Illinois, declared in favor of cooling as well as aerating the milk in order to purify the milk and thus give the maker full control of the acid development. The feeding of turnips was strongly condemned, also pasturing rye after it became rank. There is no occasion for feeding any unsuitable food when corn and mangels can be so profitably grown and fed. A number advocated feeding turnips and rye carefully, as they are cheap food, which was replied to by having instances cited where good markets and customers have been lost by allowing turnips to be fed. We must guard our reputation or cease to develop our industry. Secretary Murphy, of the Eastern Dairymen's Association, claimed factories were unfortunate when turnips were fed, as the price was lower then. He now feeds cut corn and mangels with best results. In fall he cuts corn by horse power, a week's feed at once. He claimed that silage produces more milk than other foods. Mangels can be grown as cheaply as turnips. Corn can be grown on any kind of land with proper cultivation. He has found that patrons feeding silage send more milk than those without silos. Corn must be well matured for silo to give best results in quality and quantity of milk.

Officers of the Cheese and Butter Association of Western Ontario for 1897.—Honorary President, Hon. Thos. Ballantyne; President, A. F. McLaren, M. P., Stratford; 1st Vice-President, John S. Pearce, London; 2nd Vice-President, Harold Eagle, Attercliffe; 3rd Vice-President, Aaron Wenger, Ayton. Directors—John Prain, Harriston; J. N. Paget, Canboro; Andrew Patullo, Woodstock; Jas. Connelly, Porter's Hill; R. M. Ballantyne, Stratford; J. A. James, Nilestown; Jas. Carmichael, Arva. Auditors—John A. Nelles, London; J. C. Hegler, Ingersoll. Representatives: To Industrial—A. F. McLaren; Western—J. S. Pearce, R. Robertson; Ontario Provincial Fat Stock and Dairy Show—H. Eagle and R. M. Ballantyne.

[TO BE CONTINUED.]

Comment on Last Issue.

To the Editor FARMER'S ADVOCATE:

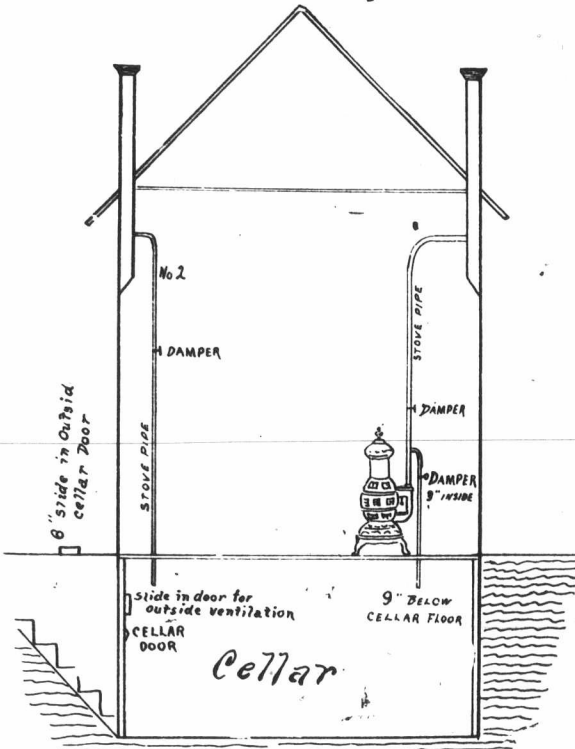
SIR,—Congratulations on your last issue; the best ever published—in practical value—not excepting the Christmas number. The articles on "Fattening Cattle" are alone worth a year's subscription. The writers all representative men, and at the very top as feeders. You then dish up a series of letters on "Wintering Sheep" that every young farmer should read. They ought to be published in the Sheep Breeders' Report and scattered broadcast. When in one issue you can get the knowledge of such men as Messrs. Tolton, Telfer, Jackson, and Hanmer, as to how they winter their flocks—knowledge that has taken them years to learn, yet they freely give it—you are indeed to be commended. Then, not satisfied with that, the articles on manuring are, as it were, thrown in. They alone are worth more than a year's subscription. With best wishes for a prosperous New Year.

Yours truly, RICHARD GIBSON.
"Belvoir Stock Farm," Jan. 26th, '97.

THE HELPING HAND.

[NOTE.—Contributors to this department will please bear in mind that designs of farm contrivances or descriptions of any special methods in farm work must be original—not reproduced from other sources—and also they must either have been actually tested by the writer or seen in use.—ED.]

Cellar Ventilator -- Handy Grab Hook.



VENTILATION PLAN.

J. FIXTER, Carleton Co., Ont.:—"I am sending you plans of very complete ventilators for a house already built that is not sufficiently ventilated. I have used both kinds for years and find them to work satisfactorily. Either can be attached to any stove without effecting the draft of the stove, except to improve it. The one I have in use at present is connected with my coal stove, which sits in the corner of the dining-room, and the ventilator can scarcely be seen, which is connected with the first length of pipe by means of a collar attached to it on the same principle as a T pipe. It is made of the ordinary stovepipe, only three inches inside measurement, and made to fit neatly. The size of the ventilator should be regulated by the size of your cellar. The large ventilator marked No. 2 is the ordinary stovepipe attached to a stovepipe hole that has no stove in use, and is connected directly with the cellar. This one does not work as well in summer as in winter, having no stove connected to start the circulation. Many of the cellars are closed up when the robins leave and never opened until they return. I have also marked openings in outside doors where fresh air can be let in without opening the doors in cold weather. I also send you sketch of

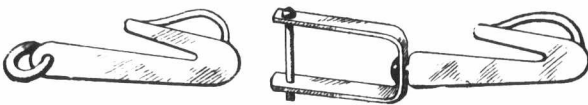
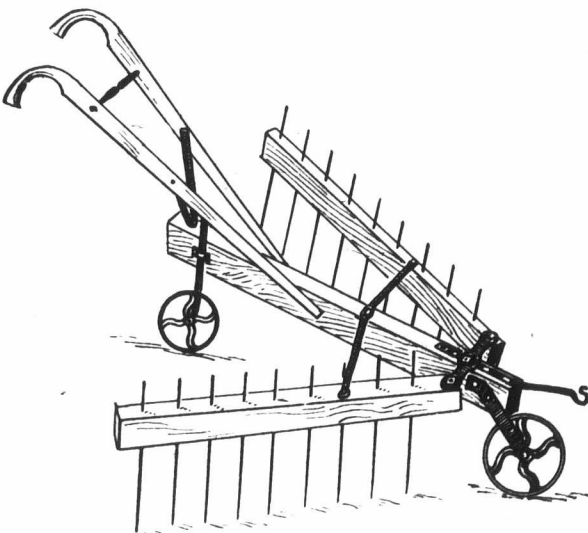


FIG. I. FIG. II.

"Handy grab hooks for chain, which I think an improvement on the one shown in the ADVOCATE, Dec. 1 issue, although it was a good one. It may be made with either ring, as in fig. I., or clevis, fig. II., at the back end. Its advantage over the hook referred to is that it will not pinch the hand so readily, and can be more easily grasped."

A Corn Weeder.

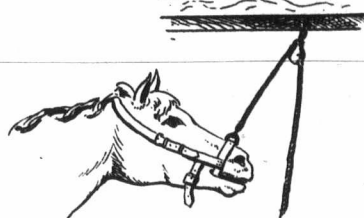


J. FELL, Brant Co., Ont.:—"Where large quantities of corn are grown for the silo, hand hoeing has largely, from necessity, been dispensed with.

The necessity of breaking up the crust and removing grass and weeds that the ordinary cultivator will not reach without injuring the stalk or root of the corn is apparent not only to all corn growers, but the manufacturers have placed upon the market special implements for this purpose. Every farmer who has a wooden-framed cultivator can have, with the outlay of a small sum, an implement that will answer every purpose of these expensive weeders. Outside beams should be 4 1/2 feet long, with eight or nine teeth, made of old sulky horse-rake teeth, placed 4 in. apart in each beam, on line at the bottom and leaning backward slightly, extending through the beams not less than 10 in. The beams at the rear should be spread 5 feet where corn is 3 1/2 feet in row; where corn is wider the spread should be greater. Bolt a plow wheel at the rear on center beam to keep weeder steady and to keep the teeth from going deep enough to injure the corn. The weeder can be used until the corn is seven or eight inches high. The teeth pass through the corn without injury to it, perfectly exterminating grass and weeds, doing superior work to the hoe."

Drenching Bridle.

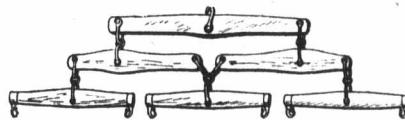
The Veterinary Record describes an ingenious patented English device for holding up the heads of horses and cattle whilst giving drinks, balls, paste, or any kind of medicine.



The holder fits in mouth like a bridle, the flat leather fitting against roof of mouth between incisor teeth and molars, and causing no impediment to bottle, balling gun, or horse. The strap under lower jaw should not be tightly buckled, as freedom of the jaw is necessary.

Three-Horse Whiffletree.

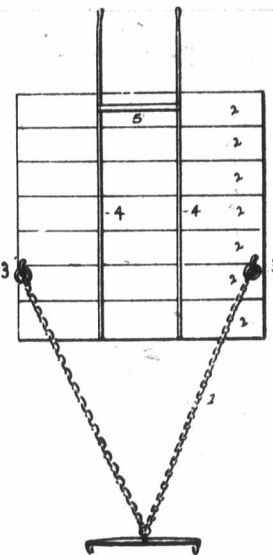
CHRISTIAN SPINLER, Perth Co., Ont.:—"The accompanying illustration needs little explanation.



The longest or upper double-tree must be of tough timber 3 by 8 in. and 42 in. long from end hole to end hole. The second pieces may be a little lighter, 30 inches long between the end clevises, having the inner holes bored 10 inches from the outside end. The whiffletrees are each 30 inches long."

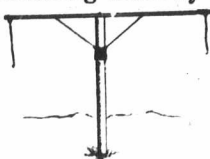
First-Class Snow Scraper.

J. R. HENRY, Chater, Man.:—"This cut represents an easily made snow scraper. Take two poles 2 inches through, 5 feet long, for the outside, and two others (4) 7 feet long for inside and handles. Cut boards (2) 5 feet long and nail on these. Make holes (3) to attach rope or chain. Bevel lower edge of scraper till sharp. Nail a short piece (5) across the two handles, which will aid in pulling scraper into position. This is a first-class article for removing snow, as far as ease and rapidity are concerned. It dumps like a road scraper, and does better service when operated by one horse. If a hard bank is to be removed, it only requires to be cut down from one edge in large pieces which will be speedily removed by the horse and scraper. I made one of these and removed two monstrous banks after a blizzard. I scrape the yard after each snowstorm and in a few minutes have the yard clean and smooth again."



Merry-go-Round for Exercising Bulls.

MANITOBAN:—"The beam swings round, and one or two bulls can be exercised at a time by simply fastening them by the nose-ring to the strap on the end of arm. They will soon get accustomed to it and travel round in a circle."



[No doubt such an arrangement will be of service on farms where the bulls have been continuously tied, and where no better method of exercising presents itself; but why not turn him out in the yard each day along with the cows, or, better still, make him cut feed and pulp roots by tread power, as many are now doing.—EDITOR.]

A Good Judge Notes the Improvements.

Mr. Thos. Moyle, Napier, Middlesex Co., under date of Jan. 21st, 1897, says: "I am well pleased with the improvements lately made, and am in a position to make this statement, as I have every volume and I believe every copy of the paper since the commencement of its publication."

A Good Grab Hook.



S. W. SNIDER, Waterloo Co., Ont.:—"This is a very handy hook for hauling sawlogs. The ring A is to put the whiffletree on by means of a clevis. If you want to carry the whiffletree round you can just take hold at B and lift the whole thing up, chain and all if it is on the hook. When you want to unhook the chain, take hold at B and turn it back and make the horses go.

"AN EASY WAY TO UNLOAD GRAVEL."

"Take a hardwood plank and form it into the shape of A; then make a block of the same thickness as your gravel planks; and another plank of hardwood for B. Then take two strong bolts and bolt the three pieces together, as represented in the picture. A is to be shoved in on top of the gravel plank, under the gravel, so that B will be under the gravel plank; then just lift up the handle and you can very easily turn over all the planks. With this contrivance one man alone can unload a load of gravel easier than two men can by hand."



POULTRY.

Poultry on the Farm.

[Read before the Neepawa Farmers' Institute by A. G. Hopkins, V. S.]

In order to show that the subject is one well worthy of your attention, I will quote the following figures: From St. Mary's, Ont., from the last of August, 1895, to the middle of December same year, there had been shipped to Great Britain 38 carloads of eggs, each car containing 12,000 dozens, valued in all at \$55,000. Again, it is stated that \$135,000,000 by eggs alone is yearly added to the wealth of the U. S., equalling the value of the combined output of iron and wool. I make no apology for championing the cause of one of the most useful and paying adjuncts to a farm, being convinced that with the average farmer this class is neglected; consequently, what might be a source of income is, if not a loss, purely an incumbrance to the farmer. In order to be more easily understood, we will divide the subject into three sections: (1st) "The average poultry stock and how to improve them"; (2nd) "Housing this stock"; and (3rd) "The feeding of poultry with a view to profit."

First.—The average poultry stock of the farm is an aggregation of mongrels, whose feathers are as many hued as the rainbow, and who are also the harborers of those aversions of the up-to-date poultry-man, viz., lice. Given an ordinary flock, we start to improve them, and to do so it is necessary to bring in fresh blood by the use of a pure-bred male. On the selection of the parent of the future chicks depends much of the desired success. As the farm fowl is a general purpose fowl, a selection of a male from the following breeds will likely give the best satisfaction: Plymouth Rocks, Wyandottes, Game (Indian). These are all hardy breeds and good layers. For this country a breed without a superabundance of comb is to be desired. The above mentioned breeds' average standard weight is for the male bird 9 lbs. and for the female 6 5/8 lbs. As can be seen by these weights, there will be a good allowance of meat on the birds, and also that they are of fair size. From the various reports of experimenters these breeds are well thought of, especially for the purpose of crossing. A pure-bred cockerel will cost from \$1 up, and can be secured in the fall, as at that time breeders are generally culling out before making up their breeding pens; sometimes it is possible to obtain an older male who has been used in the breeding pens. If a cockerel is secured, select an early hatched chicken free from roup or any signs of a cold; in fact, as vigorous a bird as you can get, his future duties calling for vigor and a good constitution above any other thing. The idea prevails among thoughtful breeders that the male should be kept separate from the hens, except during the breeding season, for the following reasons: He will monopolize the most of the food; he teaches the hens to break eggs and eat them; besides, the diet necessary to stimulate the laying propensity of the hens would cause the male to lay on too much fat, thus impairing his usefulness; Another good reason for the above is that the unfertilized egg is a better keeper than the fertilized one. Don't use the same male too many seasons or to too many hens. If used to too great a number of hens, a great number of eggs will be infertile or the chicks may be weak. With regard to the hens, don't keep them till old age carries them off; the hen is in her prime as a layer from pullet age till three years old, after that time they will not pay the profit they may have formerly; in fact, it will be better to kill them for eating.

Selection.—Observation is necessary among the

hens just as much as the Babcock tester is a necessity in the selection of dairy cows. In raising chicks two methods are used, the natural and the artificial (incubator method). Unless gone into extensively, the natural way answers for the average farmer. Too many eggs should not be placed under a hen, eleven being sufficient, the eggs being of average size. Several hens should be set at the same time, so that the eggs being tested at the same time, the infertile and rotten ones can be removed and the good ones given to some of the sitters, the others being released, so as to be started laying again. When hatched, the chickens and mother should be placed in a good dry coop and put in a sunny position; the young chicks do not need feed till 24 hours old, after that time hard boiled eggs with dry backed bread crumbs, occasionally oatmeal mixed with milk, and as they grow older give them wheat. Sloppy feed is not desirable for chicks, it induces diarrhoea.

Housing.—We don't need to be verbose in discussing this section, as the necessary condition are light, warmth, cleanliness, and plenty of room. Too often the farm hen roosts on the crows or over the horses, a condition which does not conduce either to the health or cleanliness of the animals mentioned. Light is a great necessity in the living apartments of the fowls; a southern exposure gives the best results; a fair-sized window so placed that the sunlight is thrown on the floor answers well.

Warmth.—To treat on this part of the question would take longer time than we can afford; each must decide for himself, not forgetting that warm quarters do not mean stuffy, ill-ventilated ones.

Cleanliness.—Under this indispensable condition comes the placing of the roosts. The roosts should not be over four feet high; the reason for this is to save the feet of the heavy birds, which I have no doubt are often injured by coming down heavily from too high a perch. Under the roosts should be placed the droppings board; by this method the floor is kept clean, room is economized, as the nest boxes can be put under the board, and the valuable manure is obtained easily and in good condition. To continue with the subject of cleanliness comes the annual cleaning, which should be thorough. Probably the best method is to make a hot lime wash, in which is some strong carbolic acid; apply with a brush and introduce the wash into all crevices, thus minimizing the chances of the flock being infested with vermin. The roosts should be coal oiled several times during the year.

Room.—If you desire plenty of eggs, especially during winter, you need room for the hens, so that they can get plenty of exercise. A good way to keep them working is to scatter their grain feed on the floor, which should be covered a few inches deep with straw or, better, wheat chaff.

Feeding.—To the farmer the feeding of his feathered flock is not usually a hard problem, as on the farm there is much feed useful for poultry that cannot profitably be fed to other stock. In feeding poultry, as other stock, regularity is of great importance; a change of diet occasionally is also good; not too much or too little feed. Never feed more than the hens will clean up. If grain is the feed, throw in among the litter, so that they have to scratch vigorously—industry bringing its own reward in the hen family as well as in the human one. The following makes a good daily ration: Morning, warm mash of wheat, oats, barley (all ground), with bran; noon, a small quantity of grain, thrown in the straw; afternoon, a liberal allowance of wheat. Besides the above, cut green bone or meat should be fed often, say four days a week. Green bone is comparatively a new feed for poultry, but it has a wonderful effect on the egg yield. Bones are obtained fresh from the butcher, and are run through a bone cutter (not a very costly machine); the quantity of cut bone fed at a meal varies from one half to one ounce daily per head. It is eaten with avidity by the hens, and supplies, in a concentrated form, the elements that go to make up the egg, viz., albumen and phosphate of lime, etc. Farmers could club together and get a good bone cutter, and thus have the greatest known help to winter egg production. Green feed, such as cabbage, etc., makes a good variety to the feed. An easy way recommended is to suspend a cabbage from the ceiling of the house just high enough from the floor that the hens have to jump for it. Besides solids, it is necessary that fowls should have liquids; a plentiful supply of pure cold water is indispensable, and will help insure the flock against disease. Milk is also a good food for hens. A box of sharp sand should be on hand to supply grit. A dusting box will also help. The following conditions tend to insure success, viz.: 1. Use of good blood. 2. Good care and good feed.

Sale of Mr. Hobson's Farm.

It will be of interest to many of our readers to learn, in connection with the dispersion sale of Mr. John I. Hobson's stock, that his beautiful farm at Mosboro, Ont., has been sold to Mr. David Birrell, of Greenwood, Ont., the well-known breeder of Shorthorns and other fine pure-bred stock (we understand, for his son, Mr. John E. Birrell). Mr. and Mrs. Hobson will spend next summer traveling in Britain and on the Continent, and then make their home at Guelph. We are glad to know that he is not giving up his association with farming, as he retains yet 150 acres, besides considerable interest in another part of the county.

The Ontario Poultry Association.

The exhibition of the O. P. A. was held in the drill shed, Guelph, on 11th, 12th, 13th, 14th and 15th of January, and was a decided success. Poultry-keeping during recent years has received much more careful attention than formerly. A case is cited of a Western Ontario village where one buyer paid \$24,300 in cash for eggs during 1896, all obtained in the district, while there was shipped from the same station \$2,500 worth of turkeys. The total shipment of poultry and eggs amounted to \$30,000 for the year, or about \$100 a day for every week day in the year. That single instance illustrates what a wealth-producing industry poultry is, and how deserving it is of the very best consideration and care on the part of the farmer. During the convention attention was drawn to the need for directing the expenditure of Association funds in such a way as to promote the breeds of utility rather than the fancy fowls, and to promote the industry on the farm.

THE EXHIBIT.

The entries this year were some 400 more than last. Last year the show was held at Port Hope, where they had over 1,200 entries; this year the number was over 1,600, and the quality of the different specimens was superior to anything ever seen in Canada, so says the veteran poultry breeder, McNeil, of London. On entering the drill shed we were confronted by a grand display of Buff Cochins, exhibited by McCormick, of London—some enormous birds amongst them; he carrying off all the prizes but one; W. Bell, of Toronto, getting that. In Light Brahmas the show was not large, but some magnificent specimens were on exhibition; Messrs. Cole (Hamilton), Cameron (Galt), and Oldrieve (Kingston) carrying off all the prizes. In Dark Brahmas, Saunders (London) and Thorp and Scott carried off the ribbons. In Plymouth Rocks (Barred), E. Dickinson (North Glanford) took first with a beautiful bird; the second prize also fell to this gentleman. Messrs. Bennett carried off first, second and third with three fine hens. The show in this class was very large, and for a general purpose fowl it cannot be beaten. In White Rocks, Messrs. Rice (Whitby), Gallinger Bros., and Bogue (Strathroy) were the prize winners. In Buff Rocks, R. H. Essex (Toronto) was first, second and third with fine specimens. In Games, Messrs. McLeod (London), Oldrieve and Wilkinson, Barber, Crowe and Main were the prize takers. In Langshans, Scott (St. Thomas), Oldrieve and Wilkinson, A. T. Little, and Knight and Smith (Guelph) won all the honors. The Wyandotte is deservedly gaining ground, as it is among the best general purpose fowls we have. Messrs. Myers (Kosuth), Bogue (Grimsby) Wedgery, Magill, and Field are the winners. In Dorkings, Corcoran (Stratford), Laurie, Bogue, and McKee are the winners. This old and valuable breed still holds its own. The Black Spanish was a fine class, and Frazer (New Hamburg), McCormick, and Weir (West Flamboro) were the winners in cocks, Hare and Frazer in hens. In Houdans, Messrs. Bogue and True were the principal winners. In Polands, McNeil (London) and Bogue. In Leghorns, Rice, Frew, Graham, Brown, Horsford, Bell, and Oke are the principal prize takers. Geese, turkeys, and ducks were well represented, and some very fine specimens were shown in turkeys. Messrs. Bell (Angus), Ford (Drumquinn), Beattie (Wilton Grove), and Anderson (Guelph), and Main (Milton) were the prize takers. Mr. Beattie took all the prizes for white turkeys. The gobbler exhibited by Ford weighed 42 pounds, and was the heaviest bird in the show. The geese were very heavy, fine birds. Main (Milton) first for the heaviest goose. Messrs. Bogue, Main, Luxton, O'Brien and Colwell, McCormick and Weir were the prize takers. The display of ducks, especially in Pekins, was immense. Bogue, O'Brien and Colwell, Webber, Coulson, were the lucky ones in this class. In Aylsbury, Bogue, Webber, Reid and O'Brien and Colwell carried off the honors; and in Rouen, the veteran breeder, Mr. Main (of Milton) John Coulson, and O'Brien and Colwell took all the prizes. There were any number of Bantams, and first-class they were; and some beautiful Silver, Golden, and Lady Amherst pheasants, also two pairs of very fine English pheasants, exhibited by Dr. Niven and R. Oke, London. Some very fine specimens of Belgian hares and lop-eared rabbits were also on exhibition; some of their ears measuring nine inches in length.

There was a large turnout of the members in the City Hall on Wednesday, when essays were read and speeches delivered by the following gentlemen:

Rev. Thos. Geoghegan, Hamilton. His subject was

"POULTRY CULTURE AS AN INDUSTRY."

He read a very interesting paper; it dealt with poultry raising as far back as the time of the Egyptians. A large part of the expense entailed by the Franco-Prussian war was paid off by money made in poultry raising. Not only do the French supply their own market, but send to England annually \$5,000,000 worth of this class of food. While the poultry products representing cash value is more than either cotton, hay, or dairy produce, it is the only agricultural product which the Americans do not export, and in which the supply is unequal to the demand. In 1891 Canada exported \$1,160,359 worth, and instead of increasing it has been decreasing. Great Britain imported \$18,931,645 worth of eggs alone; of this only \$524,577 went from

Canada. The decrease of our exports to the United States has been very marked since 1891. In that year it was \$1,074,247, while in 1895 it was only \$275,828. The profit to be made on this industry depends greatly on how it is managed. First-class poultry will pay well if energy, perseverance and common sense are brought to bear upon it, and it can be made more profitable at the present time than any other branch of agriculture upon which the farmer has to depend.

Mr. J. P. Wagner, Toronto, then read a paper on "HOW TO GET FERTILE EGGS AND HOW TO HATCH THEM."

In reference to this he said the nest and hen should by all means be kept clean and free from vermin, the eggs should be tested before being set. He also said sitting hens need plenty of water, and milk was a grand egg producer. He cautioned them not to use double yolked or queer shaped eggs for incubation. A hen should be dusted with insect powder, "also the nest," before she was set. Do not let the hen sit too close, as it was injurious to the eggs; they were the better to be off every day for a short time.

"THE FARMER'S STANDPOINT."

Mr. James Anderson, of "Springfield Farm," Guelph, in an able address, said they had the best poultry show in the Dominion, and he doubted if better birds could be got in America. He doubted, however, if the \$20,000 spent in the interests of poultry had done the good which was intended. The local man, or nonprofessional, had no show with those who made a practice of taking in all the shows. He thought it would be well to devote a portion of the Government's grant to encourage the farmers in raising the best breeds for table purposes. He thought the cold storage was a good plan and would add thousands to the revenue of the farmers. He gave his own experience and liked Black Spanish, Leghorns, and Light Brahmas. The Indian Game crossed with any of the Asiatic breeds produces a fine bird. Wheat at even 80 cents per bushel was the best thing to make birds shell out the eggs in winter. Turkeys, he found, consumed millions of insects, and though delicate when young, were yet very hardy when grown. Wild turkeys when crossed made good birds, but were rather wild and often shot by pot hunters. He used chopped peas, corn and potatoes, with a little cattle spice. He liked the Rouen duck, which was a fine looking bird. He had got as high as \$1.50 for ducks dressed, \$2.50 for geese, and \$1.50 for chickens. What could pay better in these dull times?

Mr. Barber took Mr. Anderson to task for casting reflections on the fanciers.

Mr. Anderson said there was no discredit to the fanciers, but would like to see special classes for the farmers. Several others thought this was about right.

PRACTICAL POINTS.

Mr. L. G. Pequegnat, of New Hamburg, is a well-known and successful poultry breeder. He strongly advised new beginners to select only one pure breed instead of a variety. The winter shows were the best time to choose good fowls, as they were all at their best; take advice from those who had paid dear for their experience.

Mr. Jos. Dilworth, Toronto, devoted a paper to a few general remarks to farmers. Erect your chicken pen always on a dry locality where the birds will be shielded from a north and east wind. Every new beginner should obtain good birds from a reliable poultry breeder, even if you should pay a good price. Never keep your fowls over three years; kill them off, unless they are specially valuable as breeders. Avoid overcrowding; one square yard to each fowl is almost a necessity. Cleanliness is urged to ensure success in poultry raising. To prevent vermin use lime wash with carbolic acid, twice a year, and change the nests often.

Mr. Bell, of Angus, read a paper on the diseases of turkeys. The best remedy he found was the ounce of prevention, as the pound of cure generally failed. For lice, dust well with Persian insect powder. Diarrhoea was brought on by improper food; give tincture of iron to old birds in their drink. Roup was generally caused by overcrowding; the best cure was to chop their heads off. Liver complaint was a very frequent disease in turkeys. He got the disease from an importation from Ohio.

Mr. A. G. Gilbert, from the Experimental Farm, Ottawa, was the next speaker. He said \$35,000,000 can be made annually in Canada out of poultry by the farmers if properly attended to. He had been addressing Institute meetings down East for some time and had added greatly to the wealth of the farmers down there by advising them to go more into poultry raising. He says 35 and 45 cents a dozen can be got for fresh laid eggs in Ottawa at present, and the supply is not equal to the demand. Mr. Gilbert's address was much appreciated by the farmers. He fed 200 fowls with moist feed in morn-

ing, grain at noon, and wheat at night, 20 pounds daily.

Hon. Sydney Fisher, Minister of Agriculture, and Prof. Robertson, also addressed the members on cold storage, etc., and promised to provide cold storage for eggs and poultry, and a committee was appointed, consisting of Dr. Mallory, Bogue, McNeil, Anderson, and Dilworth, to draft a resolution to be laid before the Minister of Agriculture. It referred to the importance of the industry and the amount of eggs and poultry exported; expressed pleasure that the Government were contemplating cold storage, and asked that the Government inform the people as soon as possible on the average requirements of the British markets for these articles, the conditions governing these requirements, the kind and quality of goods needed, when the demand was greatest, and the best way of preparing goods for shipment to that market.

Moved by R. H. Essex, seconded by Jas. Anderson, that the directors of this Association take into their consideration to increase the value of the prizes in the utility classes, so that the farmers may be encouraged to breed them to a greater extent. Carried.

Dr. Mills, of the Ontario Agricultural College, gave an excellent address, congratulating the poultry kings of Ontario who had done so well across the line in Uncle Sam's dominions. He asked if the largest prizes should not be given to the classes of poultry which possessed the greatest value viewed from the standpoint of egg production and table use. Should they give prizes for the general utility of the fowl or its appearance? Should buyers not be encouraged to buy eggs by

GARDEN AND ORCHARD.

Plan for the Grounds of a Homestead.

BY H. C. ROBNEY, EXP. FARM, BRANDON.

In making a tour of the prairies, it is surprising to the most casual observer the small number of farmers who have endeavored to surround themselves with the beauties of nature by improving the external appearance of their home, by the systematic laying out of its grounds, and the planting of hedges and ornamental trees and shrubs, and arranging flower borders and lawns. It has been wisely said, that a man's thriftiness can be deduced by the appearance of his farm. We can go further and say it is by the appearance of his farm that his moral, his intellectual, and we may almost say his religious character can be inferred.

The love of the beauties of nature we can affirm is the inheritance of the *genus homo*, and there is no doubt the chief cause that deters the settlers of Manitoba from this beautiful work is not the want of intellectuality, but the fear of nonsuccess, caused largely by the planting of tender trees and fruit bushes introduced in the early days by unscrupulous agents, who after capturing their commission had no further thought of the trees they had misrepresented, nor of the harm they were doing the future of arboriculture in this Province. But this state of affairs underwent a change by the advent of the Experimental Farms, for one of the duties of these institutions is to test the hardiness and adaptability of all trees, shrubs, and fruits which have any possibility of withstanding our climate and becoming beneficial. There is for Manitoba a very large list to choose from.

At various times lists have been given in the ADVOCATE of hardy and desirable trees useful for shelter and ornamentation, as well as small fruits which have proved useful for general cultivation.

At this time I would like to give a few suggestions upon laying out a plot of ground surrounding the buildings of the homestead. The performance of this work should not only be a pleasure but it is positively a duty and will contribute to make us a contented, happy and prosperous people. It cannot be all achieved in one season, but it is surprising how quickly the appearance of a place changes—a hedge this year, a few trees another, an avenue now, a fruit plot some other time—the result a charming rural scene, which is a pride to its owner and is also envied and imitated by the neighborhood, hence increasing the value of the land in the district. Besides, the planner and planter of a really pretty place is handing down to posterity something for which his name will always be respected and revered.

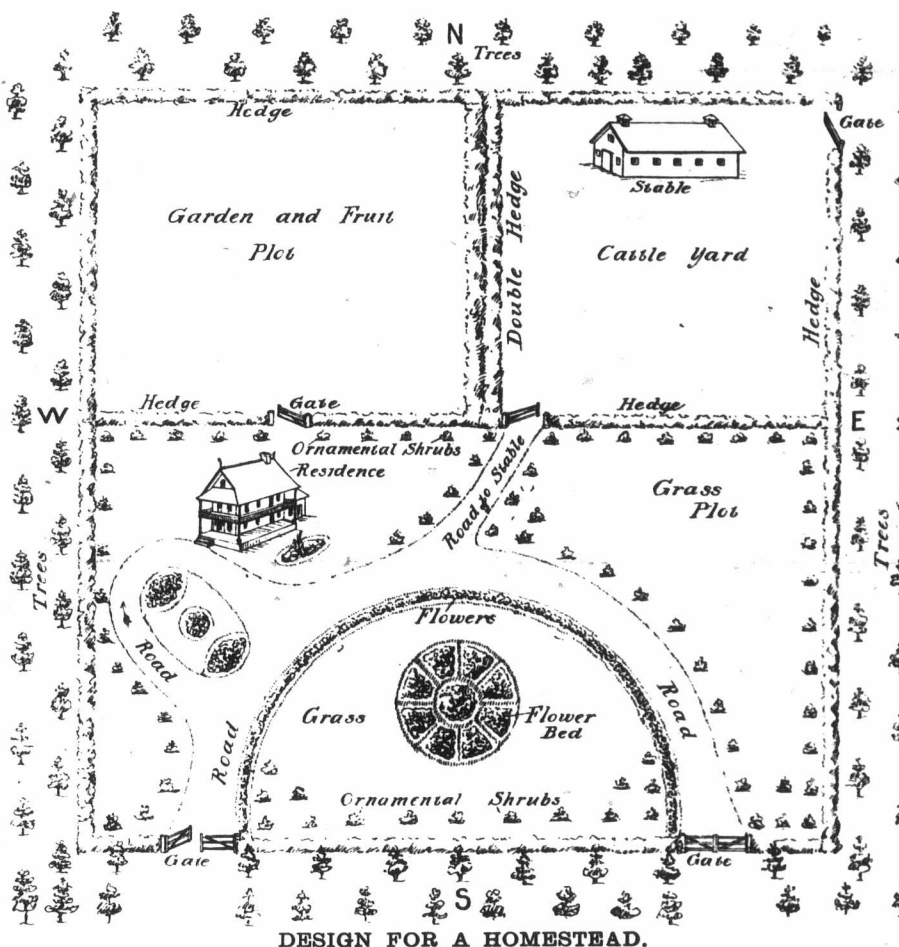
The annexed sketch is a plan of how ten acres of a farm may be laid out. Of course, it is open to modifications; it can be enlarged or curtailed, or the situation altered to suit buildings that are at present on the farm. But in many districts permanent buildings and locations have not been decided on, or in cases of settlement on new farms everything should be mapped out from the start with a view to the future.

It will be seen by the plan that the block is square, and I think ten acres is little enough to be given to this purpose where land is, comparatively speaking, so cheap. Part of it is occupied by residence, trees, shrubs, grass plot, and flower borders. Part is taken up by outbuildings, with a yard for cattle, poultry, etc., and behind the house a considerable portion is appropriated for the fruit and vegetable garden. It is imperative that the hedge surrounding the cattle yard should be pig and poultry proof. This can be done by means of wire and a quick-growing hedge, such as caragana, keeping it well cut back from the first. It is well, when practicable, to have the cattle yard opening into a pasture field.

All outside hedges should be of maples, Russian poplars, or cottonwood, and where low ornamental hedges are desired, lilac, spiraea or caragana should be used. For avenues and surrounding windbreaks, spruce, elms, maples, and poplars will be found useful.

Ten acres I know of laid out in this way five years ago on the open prairie was last summer, although not completed, a most beautiful spot, and in the spring when the snow has disappeared and the trees are sending out their delightful foliage, each variety having some different tinge of coloring, coupled with their odoriferous efflorescence, one cannot help but send up praise to the magnanimity of the great Creator who has ordained that our lives should be spent in pleasant places.

[NOTE.—While the foregoing article and the illustration are specially intended for a prairie home, the general idea is equally applicable to thousands of older farm homesteads which are greatly in need of beautifying.—EDITOR.]



weight? Would it be wise to amalgamate the two poultry associations?

Rev. W. F. Clark and others favored the selling of eggs by weight. A suggestion was made to offer next year prizes for good essays on poultry culture.

ABOLITION OF SCORING.

The score card system of judging was severely "scored," being in many cases denounced as a failure. It was stated that birds judged by the same men scored 95 one day and 81 the next. It was also a waste of time. Moved by W. J. Crouse, of Guelph, seconded by Mr. J. Barber, of Toronto, that the scoring system for future exhibitions be abolished. The only objection raised was that the change would be very radical. It was carried by a large majority; also that if the exhibitors so desired judges would score their birds for an additional fee of ten cents.

It was decided, by a vote of 42 to 37, to hold the next show in London instead of Toronto. Mr. R. H. Essex made a strong plea for Toronto, and Mr. Allan Bogue for London. On motion, it was made unanimous.

In the evening a grand supper was given by the local poultry-men to their friends: 200 sat down and enjoyed themselves; Mr. Goudie, President, in the chair. Mr. Bogue said the Royal City was the birthplace of the O. P. A. 23 years ago, and they were always delighted to return here, as they were always hospitably entertained.

The Canadian Horse Show.

The dates of the Canadian Horse Show of 1897 have been fixed for April 29th and 30th and May 1st, but this is subject to the opinions of the breeders' association meetings this week.

Small Fruit Growing on the Farm.

BY B. GOTT.
(Continued from page 38.)
RASPBERRIES.

Raspberries, viewed as a market fruit, are today perhaps the most popular of all the berries; they have so many fine qualities that exactly suit the public taste. Their growth is now very much stimulated and their production has reached enormous quantities. The most remarkable development in this line is, perhaps, in the noted fruit-growing region around Arkona, in the County of Lambton, Ont. There the acreage employed for its use is very large and the annual product surprising. It is estimated that in a radius of a few miles around that center there is annually produced and marketed some 165,000 quarts of this fruit, equal to a valuation \$13,200.00, and this has all grown up within the last few years. The region seems especially adapted to the growth and maturity of small fruits. The soil best suited for its growth is a rich, deep, dry sandy loam that has previously been thoroughly and deeply worked and so made clean from weeds, and of a fine tilth. For home garden purpose, select the plot as before for strawberries, and indeed it may be a part of the same plot. The planting is best done in spring, as early as the ground readily works well, but it can be done also at any time during the summer. For the first plantings in the spring use well-rooted young plants in a dormant state, one year old, and cut the wood back to one foot. For later planting use spring shoots about one foot high, dug freshly from a root-bed, for the purpose. Either of these plantings will make a nice growth by the end of the season if proper attention is given them, and the next year they will show you some of their beautiful luscious fruits. The young plants should be procured from a good and reliable nurseryman who can vouch for quality and truthness to name. The cost is but little and is no consideration compared to quality of product. In growth, raspberries are divided into two classes—(1) offsets, (2) tips—and these require different treatment and culture. The offset class are mostly those having their fruit either red or white, and may be planted in rows 4 feet apart and 3 feet in the rows. The stocks should be kept distinct and separate, never allowing the young suckers to fill up the spaces between them. The ground must be kept clean and thoroughly worked; and if you can throw in some old barnyard scrapings among them it would greatly help them in growth and fruitfulness. The tips are mostly black, called *Black Caps*, and must have more room in planting, say 6 feet by 4 feet, and one-year tips must be used. They should make a large, strong growth the first year and give you considerable fruit the second.

Pruning Raspberries.—This may consist in pinching off the leaders as the young growth rises 2 or 3 feet high. This has the effect of stopping the growth in that direction, and the side buds will start and form fine strong laterals, and so greatly multiply your buds and product of fruit. Late in fall these growths may be pruned away for winter. It is simply to shorten in all the classes in their growth to about 3½ or 4 feet high, so as to make them strong and able to withstand the winter and the heavy snowfalls on them. Some growers, however, do not do this, but prefer to leave all pruning to be done in the spring only. But the former method is greatly preferred. If the ground is all right and the attention good, the plants should make a strong, vigorous growth, perfectly healthy and free from all insect pests or fungus of any description to trouble you or them. After the fruit-picking is over, the old canes must be carefully cut out and gathered out of the way to allow strong, healthy, vigorous growth on the young canes for next year's cropping. In their fruiting, raspberries are divided into three classes, according to color.

Varieties.—1. Red: *Turner*—Size medium, firm, juicy and sweet, very prolific. *Herstine*—Fruit large, oblong; quality best; plant very vigorous. *Marlboro*—Best early sort; fruit large and good; plant good cropper. *Cuthbert*—The most profitable berry grown; fruit large and good. *Fontenay*—A strong-growing everbearer; fruit large and good. *Superlative*—New, large and handsome; plant strong and vigorous.

2. White: *Brinkle's Orange*—Quality the best; plant not hardy, but prolific. *Champlain*—New, quality good or best; plant vigorous and hardy. *Golden Queen*—Large and good; plant hardy and strong. *Caroline*—Fruit medium to large; plant very prolific.

3. Black: *Hilborn*—Early, medium, good, very prolific and hardy. *Palmer*—New, fine and good; very hardy and promising. *Mammoth Cluster*—A good old serviceable sort, very prolific. *Gregg*—One of the best offered; firm and good. *Otter*—New and exceedingly promising; fruit firm and good. *Smith's Giant*—New, very strong grower and great bearer.

I am sure this fine, excellent assortment of our best raspberries ought to please every variety of soil and every taste and requirement of grower. Perhaps the half dozen best from all these might be *Herstine*, *Cuthbert*, *Champlain*, *Golden Queen*, *Hilborn*, and *Gregg*. There is also a fine old *purple-black* that I ought not to overlook; it is called *Shaffer*, and has very good qualities, especially for home or family use. It will do well on almost any soil. Try it.

[TO BE CONTINUED.]

APIARY.

More Bees Needed in Manitoba.

To the Editor FARMER'S ADVOCATE:

SIR,—In looking over some of your former issues (something I can always do with both pleasure and profit), I notice in one of your issues of May last "T. A. M.," Carman, asks the reason why his tomatoes, citrons, cucumber and other vines, although they blossom freely and fruit appears, do not mature. The reason assigned by H. Brown no doubt is the correct one, viz., imperfect fertilization of the flowers, and the remedy given, the inoculation of the pistillate with the staminate flowers, would be effective and practicable where only a few were grown, but where a quantity were raised it would be rather tedious. Nature has provided against this apparent defect by the existence of certain insects, and it is generally only in such countries as Manitoba, where those insects are comparatively scarce, that any difficulty arises as in the above case. Let the honey-bee be more generally introduced and the fertilization question will be solved, as also the difficulty of raising clover seed to perfection, as represented by Mr. Davis in one of your issues, of April, 1896, will be a thing of the past, and thousands of dollars' worth of the most delicious and healthful food will be collected in the shape of nectar from the vast flora of our country which is now going to waste. I would suggest that "T. A. M." and Mr. Davis and others of like experience each invest in a hive or two of bees and mark the result. If my memory serves me right, I have seen it reported that clover seed could not be successfully raised in Australia before the introduction of the honey-bee. But one thing I do know, that alsike and white Dutch clover seed fully matures convenient to my apiary. The honey-bee performs a great part in the economy of nature in the vegetable kingdom; while in the act of collecting the sweets from the blossoms they distribute the pollen among the flowers, something they are specially adapted to perform; hence, we have perfect fertilization of the flowers and the result, fully matured fruit and seeds, something which does not always occur when the wind is the only agent for distributing the pollen, especially when an excess of moisture prevails during the time the flower dust is present. Our climate does not debar us from keeping bees, as many believe; it has been fully demonstrated that they will not only live here, but do well.

I believe that Manitoba is more congenial to the honey-bee than many countries where the winters are shorter and more temperate, from the fact that we have less mortality in winter, less "spring dwindling," and are almost entirely exempt from disease, at least so far. To the east and south of us, even in Europe, there exists a disease, apparently very infectious, generally known as foul brood. The Ontario Foul Brood Inspector, Mr. McEvoy, tells us he has met with hives actually rotten with it, which he consumed by fire. This disease, if allowed to exist, will despoil whole apiaries. Caution should be used in purchasing hives and queens from a distance, that the disease may not be introduced here. There are also moths which are troublesome in many places, which we know nothing of. The quality and quantity of honey per hive will also compare favorably with most countries. But to produce honey successfully requires money, time, and experience. Perhaps the better way for one without experience to engage in bee-keeping is to become the possessor of one or more works upon apiculture, where at least the theoretical part of the business may be acquired; subscribe for a bee journal, where the experience of other bee-keepers may be obtained; purchase one or not more than two hives (with movable frames), study their habits closely, and experience will be gained as the colonies increase. But I would venture to say that real practical experience will be gained just in proportion to the amount of interest aroused in the individual in these wonderful, may I say intelligent, little insects. Some people don't like them because they sting. Well, yes, they will occasionally sting. Certain races, such as the *Cyprian*, are represented as using their stings freely. I find that hybrids are crosser than pure-bred bees; even smoke at times seems only to irritate them. The pure Italian are generally quite gentle, and seldom sting unless disturbed at improper times; that is, immediately after heavy rains, in cloudy, chilly weather, before they fly in the morning, after they quit flying at night, or when there is no honey coming in. I use no gloves, very seldom a veil or smoke, but it is well to have the smoker conveniently near when handling the hives. All sudden, jerky motions are to be avoided in the apiary, for most assuredly the bees will resent such. Improper handling is always accompanied with stings, but an experience is gained, confidence is also acquired, and stings become a thing of the past.

Southern Manitoba.

JAMES DUNCAN.

MR. J. G. DAVIDSON (of Hay & Paton), Simcoe Co., Ont., writes:—"Please find inclosed \$1 to renew my subscription to your admirable journal. I am sure you deserve the grateful thanks of farmers in general for your spirit and enterprise in giving us twice a month such a budget of excellent matter. Your Xmas number needs no word of praise from anyone. With my best wishes for your continued success and welfare."

QUESTIONS AND ANSWERS.

[In order to make this department as useful as possible, parties enclosing stamped envelopes will receive answers by mail, in cases where early replies appear to us advisable; all enquiries, when of general interest, will be published in next succeeding issue, if received at this office in sufficient time. Enquirers must in all cases attach their name and address in full, though not necessarily for publication.]

Veterinary.

HEAVES IN HORSES.

JAMES B. MILLIMAN, Erie Co., N. Y.:—"Could you give me any advice as to what would cure a horse that has the heaves? I have a small Indian pony which is troubled."

[Feeding on laxative food will relieve and even cure mild and recent cases of "heaves." Feeding on dry grain, with carrots, turnips, beets or potatoes, and a limited supply of water, will enable many wind-broken horses to do a fair amount of work in comfort. Hay should never be allowed except at night and then only a small amount, clean and sweet. The bowels may be kept laxative by sulphate of soda, two or three ounces. Keep stable well aired and give sedatives such as digitalis, opium, belladonna or lobelia to relieve the oppression. Nerve tonics such as arsenic, in five-grain doses daily, and continued for a month or two, are especially valuable. A permanent cure is difficult to obtain, especially in the climate in which the disease was contracted. Another medicine suggested consists of the following mixture: Ground gum camphor, powdered nux vomica, common soda, and saltpetre, ½ lb. each. Mix well and give a teaspoonful three times per day in feed.]

Miscellaneous.

RATION FOR COWS.

W. W. BROWN, Elgin Co., Ont.:—"Would you kindly inform me through the columns of the *beloved* ADVOCATE, (1) what is considered to be the value of one bushel of either oats or corn, in pounds of butter, fed ground to an ordinary cow in full milk? 2. What proportion of each of the following foods should be used to produce the best results at the churn, and would any essential ingredient be lacking to make a balanced ration: Coarse fodder (corn stover and oat straw), grain (corn and oats), roots (mangels)?"

[1. There are so many conditions and circumstances which enter into the feeding of cows, such as their capacity, influencing the return from the food consumed, that it is impossible to answer definitely the question as asked. Oats are the better milk food. As part of a balanced ration the return might be put approximately at about two pounds for a bushel of oats. 2. As all the foods mentioned are rather low in protein, it would be difficult to make a nearly balanced ration out of it. The oats contain the highest proportion, but even with a liberal amount of this grain the nutritive ratio could hardly be made narrow enough. We would suggest that either pea meal or oil cake be added to the ration. The following proportions should make up a good day's ration for a vigorous 1,000-pound dairy cow: 15 pounds of corn fodder, 5 of oat straw, 3 of oat chop, 2 of corn meal, and 3 of pea chop or 2 of oil cake, and 25 pounds of mangels.

Prof. G. E. Day, Agriculturist of the Ontario Agricultural College, writes regarding the first question as follows: "In asking the value of a bushel of oats or corn in pounds of butter, your correspondent has asked a very difficult question indeed, for it is impossible to say what constitutes an average cow, and, besides, the other fodders fed with the oats and corn will have a marked influence upon the results. Comparing the digestible nutrients in these fodders we find that

	Protein.	Carbohydrates.	Fat.
100 lbs. oats contain . . .	9.1 lbs.	47.7 lbs.	4.1 lbs.
and 100 " corn " . . .	7.1 " "	62.7 " "	4.2 " "

"Thus, oats are richer in protein than corn, and protein plays a very important part in the production of milk, while corn is much richer in carbohydrates, which are chiefly concerned in the production of heat and fat. The proportions of digestible nutrients, therefore, in these two fodders indicate that oats would be a more satisfactory milk-producing fodder than would corn, and experience goes to prove the correctness of this assumption, for corn is generally regarded as a fat producer. But oats do not constitute a well-balanced meal ration for dairy cows, though at present low prices they may be used profitably in considerable quantity, and some excellent dairymen feed an exclusive meal ration of oats. The ration would be improved by the addition of bran, oil meal, pea meal, or cotton-seed meal, which are rich in protein."

CORN AND COB MEAL.

S. E. W. Wentworth Co., Ont.:—"Is it more profitable to grind corn and cobs together for cattle, sheep, and horses, or to shell the corn and feed pure corn meal?"

[A number of experiments have been made regarding the relative feeding value of corn and cob meal and corn meal, and in some cases the corn and cob meal has given nearly as good results, pound for pound, as the corn meal. However, corn cob has a feeding value about equal to that of straw, and owing to the difficulty of grinding the cob finely, it is very doubtful whether it would pay for the cost of grinding, especially at the present prices of grain. When bulky fodders are scarce it may be profitable to grind the cobs, but when chaff, cut straw, and hay are plentiful the corn cob is hardly necessary. Corn and cob meal is unsuit-

able for hogs. Some complaints have been made regarding evil effects from corn and cob meal, but it is quite possible that the difficulty arose from injudicious feeding. Will not some other feeder give his experience with corn and-cob meal?

G. E. DAY, Agriculturist. Ontario Agricultural College.]

YOUNG PIGS LOSING USE OF LEGS.

"READER," Glengarry, Ont.:—"I desire to ask a question through your paper in regard to what is the cause of young pigs losing the use of their hind limbs when about two to three months old, which are kept in a dry, warm place, well fed on skim milk and shorts, and well bedded with dry straw? I have had considerable trouble this winter from effects of this kind. Would like to know the likely cause, and prevention, as well as remedy?"

[This is a common complaint in the winter months. We believe it is largely the result of want of sufficient exercise and access to "mother earth." There is something in the nature of the young pig which craves clay and gravel and grass, and it is next thing to a crime to deny him these condiments. Exercise is all-important to the growing pig, to give strength and stamina to his bone and to lay the foundation of a robust constitution. Prevention is always better than cure, but if the former has not been used, or the circumstances are such that they cannot well be secured, the next best thing is to feed pulped roots and bran, with a little sulphur and salt, and to place wood ashes within reach; also a basket of earth occasionally, gathered from the root cellar, and by all means, if possible, let the pigs run out for a few minutes on fine days, and, if practicable, let them have the run of the barnyard at will until fully recovered from their lameness.]

CREAM WON'T CHURN.

J. G. ARMSTRONG, Wentworth Co., Ont., on Jan. 4th writes:—"Please let me know what is the cause of cream not churning at this season of year? Last year, and also this, we are having trouble getting butter from the cream. We are feeding straw, cornstalks, sugar beets, corn and oats chopped; water once a day. The cream turns bitter at times."

[When this letter was received we at once wrote Mr. Armstrong for more information regarding his cows and the care of the cream, and suggested a few probable causes of the trouble. His reply was to the effect that our suggestion that the trouble probably came from some of the cows having milked a long time was the cause. We would take this opportunity of saying to our readers that in asking questions like the above, as much as possible of detail should be given, so that we may know at once what is the cause, and point it out without going over a long series of probable causes and remedies. Mr. Armstrong's second letter read as follows: "The cows have been milking eight months, and one of them over eleven, which I found caused the trouble. The cream is raised in creamer cans at 50 degrees. We churn once a week at about 60 degrees. We keep the cream at about 50 degrees between skimming and churning. Since I have let the cow go dry that had been milking so long we have had no trouble."

This question of long churning was very fully dealt with in the ADVOCATE of Jan. 15th, 1896, page 31, by T. C. Rodgers, of the Guelph Dairy School. Unfortunately, too few of our readers keep the back numbers of the ADVOCATE, which very often contain the best information procurable on these knotty problems, and which are as applicable this year as last. We would advise any who have trouble with long churning, and have the number of the ADVOCATE referred to, to turn it up and read Mr. Rodgers' article. The long-milked cow often gives trouble at this season in the churning of the cream of the entire herd. The keeping of the cream for a week no doubt had much to do with the bitterness of the cream, as at cold temperatures bitter-producing bacteria seem to develop rapidly.]

OIL MEAL TO SPRING CALF.

JAMES RIDDLE, Norfolk Co., Ont.:—"How can I get the best results from feeding oil meal to a spring calf this winter? How to feed it—raw, scalded or cooked? If the calf is getting plenty of straw and turnips twice a day, how often should it be fed, and how much at a meal? Please mention in your next issue and oblige."

[We have found excellent results from feeding oil cake meal gruel to calves coming a year old. Our practice is to boil the gruel well, making it the consistency of thin porridge. Each morning and evening we add about one quart to enough water, or preferably skim milk, to make it thin enough to drink.]

MARKETS.

Toronto Markets.

There was a firmer feeling in the local market. Dealers say that the cattle lack finish, and regard the outlook as promising for this year's export business. There is an enquiry for Canadian lambs to feed in the State of Iowa. Mr. Kinnear says that we cannot spare many, as there is a shortage of yearlings fit for feeding. There were not quite so many cattle in as on last market day. Buying for Montreal was steady, about as on last market day. Buying for Montreal was steady, about as on last market day. Buying for Montreal was steady, about as on last market day.

Export Cattle.—A number of good cattle taken for export. Trade quite brisk for this season of the year. There was a fair demand, and several carloads at prices ranging from \$3.50 to \$4.10 per cwt.; several of the better class of butchers' cattle being taken for export. Prices ruled from 3c. to 4c. per lb. Butchers.—This market quite active, outside markets calling for supplies. Prices held better; sales at 3c. per lb.; one

or two choice loads a fraction better. The ruling prices were: Butchers' out, from 3c. to 3 1/2c. per lb. for good to choice; medium, 2 1/2c. to 2 3/4c. per lb. Common cattle sold down to 2c.; prospects are brighter for next week.

Bulls.—Very few on hand; enquiry fair for export; some few sold at 3c. to 3 1/2c. per lb. Two bulls, 1,500 lbs. each, realized top price—3 1/2c. per lb.

Stockers and Feeders.—A few choice feeders wanted at from 2 1/2c. to 3c. per lb.; no demand for light stockers. Price ruled from 2 1/2c. to 2 3/4c. per lb.; only a few changing hands.

Sheep and Lambs.—In fair supply; trade moving, shipping sheep, 2 1/2c. to 3c. per lb.; butcks, 2 1/2c. per lb.; butchers' sheep, \$2.50 to \$3 per head. Lambs sold at \$3.90 to \$4.25 per cwt.

Calves.—In short supply; prices firm. Choice veals sell at \$6 to \$7 per head; the ruling figure from \$3 1/2 to \$5 per head, according to size and quality; a few wanted.

Milk Cows.—About 30 on offer; all sold. Good cows wanted, and easily disposed of; poor cows hard to sell. Prices rule all through from \$15 to \$40.

Hogs.—Market firmer, a slight advance over my last quotation; full supply; all cleared; 1,500 on offer. For choice hogs the market is very firm; 4 1/2c. per lb.; prospects good for advance. Thick fat, \$3.50 to \$3.60 per cwt.

Dressed Hogs.—The offerings of large dressed hogs have been very liberal. Packers are not very anxious for this class, as the demand for heavy fat bacon is limited. Heavy hogs are difficult to sell; \$4.25 to \$4.35 is the outside being paid for car lots delivered; light lean, in farmers' loads, \$5.10 to \$5.20; even a little higher for choice; about \$4.60 for heavy.

Hides and Skins.—Market steady. Some sales during the week have been made at these quotations: No. 1 green, 6 1/2c.; steer hides at 7c. per lb.; No. 2, 5 1/2c.; No. 3, 4 1/2c.

Skins.—Calfskins, No. 1 green, 6c. to 7c.; sheepskins at 90c. Wool.—Fleece combings, 2 1/2c. to 2 3/4c.; tub washed fleeces, 20c. to 2 1/2c.; pulled supers, 20c. to 2 1/2c.; extras, 22c. to 25c.

Grain Markets.—On the street to-day 100 bushels of white wheat, sold at 87c. to 88c.; 200 bushels of red at 87c.; 200 bushels of good red, 87c.; 500 bushels of oats at 21c.

Milled.—Car lots of bran dull; middle freights are quoted at 8 1/2c.; shorts, \$3 to \$10, according to quality.

Hay.—About 25 loads of hay sold at \$12 to \$13 per ton. Straw.—Eight loads of straw, at \$7 to \$9 per ton.

Butter.—Market is very low on all dairy butter; an increase in demand for creamery; values in all lines remained unchanged; small dairy rolls, 12c. to 14c.; creamery, 18c. to 20c. per pound.

Cheese continues firm and local stocks are very light. Export advices report six pence higher. Local trade firm at the advance, dealers asking 10c. for summer make; late makes at 11c. to 12c. per lb.

The improved attendance of farmers on this market is due to the abolition of the toll gates entering the city and remission of market fees.

Eggs.—Easy, and supplies increasing all round. New laid eggs are more plentiful. Dealers are selling fresh at 14c. to 16c.; new laid at 18c. to 20c. per doz.

Poultry.—Good enquiry for choice dry-picked stock; receipts light. We quote turkeys at 9c. per lb.; chickens, 30c. to 40c. per pair; young chickens, 75c.

Table with 2 columns: Item and Price. Includes Export cattle, Butchers' cattle, Bulls, Stockers and feeders, Sheep, Lambs, Cows per head, Milk cows per head, Hogs, choice, Thick fat, Light, S. w's, Stags.

Toronto, Jan. 26th.

Montreal Markets.

Cattle.—Very little change in the beef cattle trade since last report, weekly offering being always more than is required to supply buyers. This keeps the market in an unsatisfactory condition. During the week just ended there was some demand from exporters to fill space, but very few were taken, owing to the poor quality of cattle to be had. The top price paid for this purpose was 3 1/2c. per lb., and they had to be priced very fair made 3 1/2c. while good butchers' could be had from 2 1/2c. to 3c. per lb.; medium and inferior stock, 2 1/2c. and down to 1 1/2c. per lb.

Sheep and Lambs.—The demand for sheep and lambs has been active and well maintained right up to the end of the present week, when a trifle easier feeling prevailed, owing to the heavier receipts of dressed carcasses in the dead meat market, and prices sagged a little. For choice lambs about the best that can be realized is 4 1/2c. per lb., a decline of about 1c. per lb.; sheep, 3c.; mixed lots of sheep and lambs, 3 1/2c. to 4c. per lb.

Calves.—Offerings continue very light, with but very little sale; \$3 to \$7 each.

Hides and Skins.—The hide and skin markets have been very even and uniform since the last decline in beef hides, and the business done has kept the "take" from butchers, moving freely into tanners' hands. Lamb skins are active and wanted by dealers, and the result has been an upward movement of 15c. per skin to 90c. each, at which they are held firmly. Calf skins have also been in better demand, and have been advanced one cent per lb., No. 1 now selling for 7c. per lb. and No. 2 for 5c. Green salted hides, heavy and light, to butchers now make for Nos. 1, 2, and 3, respectively, 7, 6, and 5 cents per lb.

DRESSED MEATS.

The cold weather has had a good effect in stimulating a demand in all dressed meat lines.

Hogs.—The very light run of light bacon hogs offering has forced prices up steadily until \$5.40 per cwt. in car lots has been paid this week for nice light bacon grades to average 170 lbs. to 180 lbs. even at this figure it is rather difficult to obtain the quality desired by packers. On the other hand, heavy hogs have been abundant, receipts for this week, all told, reaching 6,000, a gain of about 4,500 over the previous week. Heavy hogs have not kept pace with the light weights and it is rather difficult to cash car lots of the former for anything more than \$4.75 to \$4.80 per cwt.

Beef.—Beef has been sent in freely to commission houses in the city and of rather better quality, but the demand is hardly equal to the supply and it is difficult to obtain anything over 3c. to 3 1/2c. and 4 1/2c. to 5c. for choice fore and hind quarters. Shipments are mostly coming from points West and are landed in capital condition.

Lambs.—This market has kept pace with the hog market, and a good active enquiry prevails for choice young lambs, car lots of this quality netting back 6c., and in some cases a shade over. In round lots and single carcasses 7c. to 7 1/2c. has been paid.

Buffalo Markets.

Cattle.—Receipts, 125 cars. Prime heavy grades were in light supply and sold steady to strong; one load \$5.15, and a small bunch \$5.20. The shipping and butcher steers, however, sold a shade lower. There were very few outside buyers here for them. Those weighing from 1,200 to 1,400 lbs. were the ones that suffered the most, and values all around were called 10c. to 15c. under last week. Cows and heifers generally also sold about 10c. lower; the same with stockers and feeders. Good veal calves sold from \$6.50 to \$7. Milch cows sold generally about \$2 per head lower. Springers, if not close up, were almost impossible to sell. The decline which we had in the cattle market to-day is, to our notion, only temporary, and simply due to a lack of buyers, and also to very unfavorable weather. Prime to fancy steers, \$5 to \$5.25; good to choice, \$4.50 to \$4.85; good, ripe, 1,100 to 1,250 lb. steers, \$4.35 to \$4.50;

good, ripe, \$5.00 to 1,150 lb. steers, \$4.15 to \$4.30; good fat steers, plain, 1,500 to 1,800 lbs., \$4 to \$4.25; fair to good steers, plain, 1,000 to 1,500 lbs., \$3.70 to \$3.90; common to fair, \$3.25 to \$3.50. Feeders, fair flesh, good quality, \$3.60 to \$3.75; fair, \$3.25 to \$3.50. Stockers, good quality, \$3 to \$3.25; common to fair, \$2.50 to \$2.75. Prime to fancy heifers, \$4.25 to \$4.75; good to choice heifers, \$3.75 to \$4; good to choice cows and heifers, \$3.40 to \$3.65; light, fair fleshed heifers, \$2.90 to \$3.20. Prime heavy fat cows, \$3.25 to \$3.50; fair to good cows, \$2.70 to \$3. Bulls, prime to fancy, \$3.40 to \$3.75; bulls, good, \$3 to \$3.25; good heavy bologna bulls, \$2.75 to \$2.90; good, well-bred stock bulls, \$2.75 to \$3; common and light bulls, \$2 to \$2.25. Milkers and springers, fancy, \$4.50 to \$5; choice, \$3.90 to \$3.35; good, \$2.95 to \$3.25; fair, \$2.50 to \$2.75. Veal calves, extra fancy, \$6.75 to \$7; good to choice, \$6 to \$6.50; common to fair, \$4 to \$4.75; heavy fat calves, \$3 to \$3.50.

Lambs in fairly good demand, active, and stronger, with the prime grades, 80 lbs. and upwards, \$5.30 to \$5.40, with only a few at the latter price, and they were strictly fancy and selected. Fair to good, 70 to 80 lbs., from \$5 to \$5.25; and the culls and common, from \$3.75 to \$4.50. The market closed about steady. The few late arrivals went at about morning prices.

Sheep in good demand and sold strong, excepting those suitable for export, which were in light request to-day. Shippers of this article will further their own interests by wiring us before loading. It is not policy to make shipments unless there are buyers. Butcher sheep were wanted, and prime heavy grades sold from \$1 to \$4.25; fair to good, \$3.40 to \$3.75; and culls and common, from \$3.25 to \$3. This commodity closed up strong, with everything disposed of.

Hogs.—Receipts, 75 cars. The market opened with a good demand both from the local packers and from the out of town buyers. Mediums and heavy grades sold mostly at \$3.70 to \$3.75; and Yorkers and pigs, from \$3.80 to \$3.90, with some fancy light stuff as high as \$3.95. The market closed about 10 lower, with about 20 cars going over unsold. EIRICK BROS. Jan. 25th.

Chatty Stock Letter from Chicago.

(BY OUR SPECIAL CORRESPONDENT.) Following are the current and comparative prices for the various grades of live stock:—

Table with columns: CATTLE, Range of Prices, Present, Two weeks ago, 1896, 1895. Lists prices for 1500 lbs. up, 1350 @ 1500, 1200 @ 1350, 1050 @ 1200, 900 @ 1050, Stillers, Fat cows and heifers, Canning cows, Bulls, Calves, Texas steers, Texas C. & H., Hogs, Mixed, Heavy, Light, Pigs, SHEEP, Natives, Western, Lambs.

Strictly choice ripe cattle are hard to get. The quality of the hogs was never better.

The majority of the cattle coming are being handled in the feed lots on the "ship soon as they'll do" style, and as a result the markets are supplied with half-finished cattle. Prospects are not so bright withstanding the great abundance of corn, this will not be a year for a large share of fat cattle. Coughlin, the Canadian exporter, bought a good many cattle here lately, including 1,382 lb. cattle at \$4.40 and some weighing 1,300 lbs. at \$4.75, with some up to \$5.00.

Twenty-six head of 1,639-lb. Shorthorn cattle sold at \$5.30. For the week ended January 13th, exporters forwarded 5,542 cattle from Chicago, against 5,953 the corresponding week last year. Individual shipments were as follows: C. F. Reeder, 351; Brown & Snell, 91; Hathaway, 179; Lehman, 656; Sherman, 390; Epstein, 174; Elliott, 442; Blackshear, 70; Shamberg, 439; Morris, 242; Swift, 632; Coughlin, 820; Curran & K., 200; Schwarzschild, 262.

While the Iowa hog crop has been largely decimated, a trader thinks the fact that Iowa packing points killed 25,000 more hogs since November than during the corresponding time a year ago makes it look as if the hog cholera talk had been exaggerated.

Secretary W. G. Preuit, writing from Helena, Montana, says the weather has been more like spring than winter, with most of the streams open and cattle doing well.

Swift & Company, the big Chicago packers, have secured a controlling interest in the St. Joseph (Missouri) Stock Yards. Armour is largely interested in the Kansas City and Omaha Yards, and Morris practically owns the St. Louis Yards. Morris owns an immense stock ranch in Texas, a great farm in Nebraska, and about 12,000 acres of farm land in Indiana which he has never seen, but leaves entirely to the judgment of trusted men.

The new belt line railway about Chicago, the Chicago, Hammond & Western, is practically owned and controlled by the officers and directors of the G. H. Hammond Co.

Swift owns a vast stock ranch in Colorado, and Nelsons, the big Chicago packers, are by no means confining themselves to the meat business. They nearly all make butterine, commercial fertilizers, and glue. Some of them are heavily engaged in making soaps and chewing gum, and all of them have numerous other by-products which yield them handsome profits, even when they sell beef and other meats at what would be losing prices to small butchers.

A report from Oregon says: "The stock interests have been especially favored. The range food is fairly good, and though a large supply of hay is on hand, yet no feeding to any amount has yet had to be done, and the stock bids fair to go through the winter in excellent condition."

The latest dispatches from South Dakota are to the effect that live stock of all kinds is wintering the best so far in about seventeen years. The early fears of an exceptionally hard winter bids fair to prove entirely groundless.

The supply of domestic wool in the United States January shows an increase of 20,923,580 pounds, and the supply of foreign a decrease of 4,689,300 pounds, the total supply on hand showing an increase of 16,234,280 pounds.

Coughlin bought 606 export sheep at \$3.75. Doud & K. bought 788, 132 lbs., at \$3.70 to \$3.75.

A Scotch writer thinks the United States will never make very serious competition in the world's mutton markets, but the rapid growth of the home demand for mutton would seem to indicate the raising of a surplus before very long.

Some Texas ranchmen have contracted for their two-year-old steers for spring delivery at \$25. Cattle-men say this is the best price for 2s since the boom in the early '80s.

Very few cattle are being fed in Texas this year owing to the scarcity of cotton-seed meal and corn in that State. A stockman's wife bought an Astrakhan cloak recently which cost her \$80. He went in to coin the price of it on the Board of Trade, and says the cloak has now cost about \$917.00.

Montreal Horse Market.

There has been quite a free movement in horses for export, and what is more to the point, the quality on the whole has been good, for which there has been a good demand; for poor quality no enquiry. Good drafts readily make from \$80 to \$105 and \$110 each.



THE HOUSE ON THE MARSH.

A Romance.

BY FLORENCE WARDEN.

(Continued from page 41.)

The only thing left for me was to go down the passage, which led past Mr. Rayner's study, and so into the hall, where I knew the exact position of the match-box which stood on the hall table.

My only fear now was that I might meet Mr. Rayner, in the event of his not having left the house yet to go to his room. If I met him, I should have to account for wandering about the house at this time of the night, and tell him what I had seen, and there would be a search, and I should get some one into trouble. For my fears had not gone beyond thinking that it was Sarah or one of the other servants who, perhaps wishing to give me a fright, had blown out my candle, hoping to slip out in the dark unobserved.

I got back safely to the bottom of the staircase, and was creeping along the passage when I caught the first faint sound of voices. I stopped, then went on again softly, while the sounds became plainer, and I found that they proceeded from Mr. Rayner's study, the door of which I had to pass. I discovered by the thin thread of light it let out upon the passage that this door was ajar, at the same moment that I recognized Sarah's voice. She was arrested half against my will by words which seemed to apply to myself. "Against the stupid baby-face of a chit hardly out of the nursery herself. Governess indeed!"

"Is that all you have to say?" said Mr. Rayner very low, but in his coldest, most cutting tone.

"That's—that's all I have to say," said Sarah, with a choking sound in her voice.

"Then the matter is easily settled. You can go."

"Can go! I go! Do you know what you are saying? Do you think you could replace me as easily as you can such as her?"

"That is my affair. You wished me to choose between the services of an underpaid governess and those of an overpaid servant. I have chosen."

"Overpaid! My services can't be overpaid!" she hissed out.

"As long as you joined discretion to your other undoubted good qualities I paid you according to that estimate. If you cannot accept the changes quietly, you had better go."

"And you would let me go—for a new-comer?" said the woman passionately.

"I cannot think of sending away any member of my household for the caprice of any other member of it, however valuable a servant she may have been."

"May have been—may have been! My work is not over yet, and if I don't work for you, I'll work against you," she broke out in a fury. "I'll—"

"Not so fast, not so fast," said he slowly. "You will find that up hill work when you have to deal with me, Sarah Gooch."

"Why are you so hard? How can you have the heart to talk like that about my services, as if I was too old for anything but money-bargains? That chit, that Christie girl, that you put before me, will never serve you like I've done."

"The services of a governess are not the same as those of a servant. That is enough about Miss Christie, Sarah."

"Enough and welcome about the little flit—a creature that keeps diamonds from one man in her desk, and wears round her neck a letter from another which she kisses on the sly! Oh, I've seen her, the little—"

"Nonsense!" said Mr. Rayner, sharply. "And what if she does? It is no business of mine."

I heard him rise hastily from his chair and walk across the room; and I fled past like a hare. Trembling and panting, I found my way to the hall table, took out of the box there half a dozen matches, and crept guiltily, miserably up-stairs. I had listened, as if chained to the spot, and it was only now that I reflected on what a dishonorable thing I had done.

I cried with shame and remorse as I stumbled up the turret stairs, shut myself in my room, and lighted my candle. I did not feel a bit frightened now; I forgot even to turn the key in the lock; this last adventure had swept away all remembrance of the previous one. When at last I began to think collectedly of what I had heard, I felt no longer any doubt, from what Sarah had said about the nature and extent of her services, that she was in reality the responsible guardian of Mrs. Rayner, and that, when she spoke of working against her master if he sent her away, she meant to publish far and wide what he had so long and so carefully kept secret—the fact that he had a wife tottering on the verge of insanity. I did not wonder now so much as I had before at the depth of her jealousy of me.

As I rose, I caught sight of my desk, which I suddenly saw had been moved. I opened it and looked into the top compartment, where I kept Mr. Rayner's present. There it was in its case, looking just as usual. Then I opened the lower compartment, with the intention of reading through just once more those two notes that I had had from Mr. Reade, one on that day and one on the day before, about the cigar-box on And the last one, the one that had come with the church-work. That day, was not there! A suspicion flashed through my mind which made my breath come fast—Sarah had taken it!

It was Sarah then whom I had surprised in my room that evening! She had managed by some means to open my desk. I was annoyed and disgusted beyond measure; I could have forgiven her anything, even her meanness in playing spy while I looked at the note which I wore round my neck, but stealing my precious letter!

Then I went to bed, very tired and very unhappy; and at last I fell asleep, with my hands clasping the note that Sarah could not get at, which I wore in the case round my neck.

I was awakened by a very slight noise indeed, so slight that I thought it must have been the work of my nervous fancy; and my sleepy eyes were closing again, when I suddenly became conscious that there was a light in the room not that of the rising sun.

Fully awake now, and cold all over with this new fright, I saw by the flickering on the ceiling the light must come from a candle behind the screen; I saw that it was being carried forward into the room, and then I closed my eyes and pretended to be asleep. My fingers were still clinging to the little case; but they were wet and clammy with horror. Was it Sarah? What was she going to do now? To put back my letter? I did not dare to look.

I lay there listening so intently that I could hear, or fancy I heard, each soft step taken by the intruder. Then they stopped; and from the effect of the flickering light through my closed eyelids I guessed that the candle was being raised to throw its light on my face. Still I had self-command enough to lie quite still and to imitate the long-drawn breathing of a sleeping person. But then my heart seemed to stand still, for I felt the light coming nearer, and I heard the faint sound of a moving figure growing plainer, until the light was flashed within a foot of my face. I could not have moved then. I was half paralyzed. Then I noticed a faint sickly smell that I did not know, and a hand was laid very softly upon the bed-clothes.

Still I did not move. I had formed a sort of plan in those deadly two minutes, which seemed like two hours, when the light was coming nearer and nearer to my face. The hand crept till it touched my fingers clutching the little leather case. It tried to disengage them; but my clasp of my treasure was like grim death. Then the hand was softly withdrawn. I heard the drawing of a cork. I felt the faint smell more strongly, and a handkerchief wet with some sickening, suffocating stuff was thrown lightly over my face.

Then I started up with a shriek as loud and piercing as my lungs could give, tore the handkerchief from my face, and confronted Sarah, who drew back, her dark face livid with anger, but without uttering a sound. In her hand she held a little bottle. I tried with a spring to dash it from her grasp; but she was too quick for me, and, with a step back against the screen, she held it out of my reach. Then the screen fell down with a loud crash. My attention was distracted from the woman to it for one moment, and in that moment she made another spring at my neck. But then there was a sound outside which had as many terrors for her as her own hard voice had for me. It was Mr. Rayner, calling sharply and sternly.

"Sarah, come out here!"

She started; then her face grew sullen and defiant, and she stood like a rock before me. As she saw Mr. Rayner called:

"Sarah, do you hear me? Come here!"

And as if a spell had been cast upon her which it was vain for her to fight against, she went slowly out of the room, and I was left alone.

I sprang from the bed, locked the door, and fell down against it, in the dark and cold, in a passion of hysterical sobs that I could not restrain. Then they died away, and I felt my limbs grow numb and stiff; but I had not power to move, and I thought I must be dying.

Then I heard a fall at the bottom of the stairs, and a woman's cry, and immediately after a voice outside roused me.

CHAPTER XIII.

"Miss Christie!"

It was Mr. Rayner calling softly through the door. I did not answer or move.

"Miss Christie, my dear child are you there? Are you conscious? Are you ill?"

And I heard the handle of the door turn; but it was locked. I raised my head from the ground, and said, in a weak, quavering voice:

"I am not ill, thank you, and I am quite conscious."

"But your voice is weak. Are you hurt? Did that woman hurt you?" he asked, anxiously.

"No, no; I am only frightened; I am not hurt. I will tell you all about it to-morrow, Mr. Rayner."

"I will fetch you some brandy and water, and put it here for you, outside the door."

"No, please don't; I should not dare to take it in. I feel that, if I opened the door, she might get in. If I saw her again to-night, it would kill me!" I sobbed. "Oh, please keep her away!"

I was getting hysterical again.

"She shall not come near you, child; I swear it! You are quite safe. I will lock the door at the bottom of the stairs, and come, and let you out myself in the morning," he said, in a low voice.

The thought of being locked in did not reassure me much; but I thanked him and wished him good-night, with a last piteous appeal to him to keep Sarah away. Then I rose from the floor, stumbled to the table, struck a match and lighted my candle, and put it by my bedside. For the first time I was afraid of the dark. And I lay awake listening, and starting at the tiny cracks the wood made, until at last, worn out, I fell asleep.

The next morning I heard Mr. Rayner unlock the door at the foot of the staircase when I had just opened mine, ready to be smothered by his appearance.

"Take my arm, child; you can scarcely walk. Come to breakfast, a cup of hot coffee will do you good. And, after that, go into the study, and we will talk."

At breakfast Mr. Rayner said:

"I have the penny-bank accounts to do, and I want you to help me with them, Miss Christie, if you will be so kind as to spare me a couple of hours. I won't keep you longer."

I assented rather nervously.

"An hour's time I shall expect you in the study, then."

After breakfast I went up-stairs, where I found Jane doing my room. She left the room as I entered.

"Never mind, Jane; don't go. You have nearly finished, I see. So you are doing the room, is that right?"

"Yes, miss; I've got to get into this morning!"

She gave a gasp, as if to continue, but stopped.

"Well," said I, smiling, to encourage her to talk.

"You shall know Sarah's going away, miss."

"Is she going away, I am unable to keep my face from brightening at the welcome word."

"Yes, miss. Oh, there has been a rumour, and no mistake!"

"What is she going away for?" said I.

"Oh, it's all along of you, miss! She burst in to cook and me this morning, and said she wasn't going to stay in a house where there was such goings on. She said Mr. Rayner let her fall down-stairs in the dark, and went on up without taking her notice—and she really is a good deal bruised."

Sarah would probably not go at once, and I felt that I could not sleep another night in the same house with her. So I packed my boxes, and then went down-stairs rather nervous as a proof that my adventure was no fancy, as I guessed that Mr. Rayner would try to make me believe.

Mr. Rayner said "Come in" when I knocked, got up, placed me in an arm-chair by the fire, and asked me to wait while he spoke to Sam. He left the room, and I cautiously made friends with his big dog, who shared the hearthrug with me. I had progressed so far as to slide down from my seat to caress him better, when I looked up and saw Sarah.

I sprang to my feet with a scream that I could not repress, and darted to the bell.

"Don't!" said she sharply. "At least, wait for one moment—give me a hearing. I'll stay here—so. I didn't mean to hurt you last night; and I didn't want to steal your letter either. I only wanted to read it. I'm sorry I frightened you, I've come to ask you to forgive me."

"No, no; I can't forgive you—at least not yet," I said, incoherently. "It wasn't only wanting to steal my letter and to if—as if you would have liked to kill me," I said, growing more excited as I remembered the terrible glare of her eyes when she sprang at me the second time. "I can't forget it—oh, I can't forget it!"

"You're very hard upon a poor servant, Miss Christie, and it isn't generous of you. I don't deny that I was jealous of his well for high seven years, should have to go just at the word of a young lady who hasn't been here two months!"

"It isn't at my word, Sarah; I have had nothing to do with it."

"Then you don't want me to go away?"

"It doesn't matter to me whether you go or stay, as I am going back to London myself this very afternoon."

Sarah stared.

"Have you spoken to Mr. Rayner about it yet, may I ask, miss?" said she dryly.

"Not yet; but I am going to tell him this morning."

"Then would you mind, before you go, miss"—she laid a peculiar emphasis on these words—"asking Mr. Rayner to let me stay? It won't matter to you, you see; but it's more to me than I can tell."

"But what I might say wouldn't make any difference Sarah."

"Then, as you won't be afraid of your words having any effect, miss, perhaps you will let me ask Mr. Rayner to let me stay."

"Very well; I will ask him."

"You promise, miss?" said she, with a strange light in her eyes.

"I promise," said I.

She drew herself up from her imploring attitude triumphantly, and, with a cold "Thank you, miss," left the room. Before long Mr. Rayner returned.

"Have you quite got over your cruel fright now, little woman?" said he kindly.

"As much as one can get over a thing like that," I said, in a low voice, my fingers shaking.

"One can't forget it at once, of course; but I hope that a little care and a little kindness will soon drive that unpleasant adventure right out of your head."

"If you mean your care and your kindness," said I, looking up gratefully, "why, you can't give me more than you have given me already, Mr. Rayner. But there are some experiences which one can never forget, and I want you to release afternoon's train! For if I had to sleep in that room another night, I should go mad!"

"My dear child," he said gravely, "you can't do that—for our sakes."

"But I must—I must indeed!" I cried piteously. "You don't know, you can't tell what I suffered when I felt her hand creeping up to my throat, and thought I was going to be killed—I did indeed! And then I thought the stuff on the handkerchief was poison. She says it is only something to make you sleep. Is it true, Mr. Rayner, here is the handkerchief." And I pulled it from my pocket and gave it to him.

"Quite true," said he; but I saw him frown. "It is chloroform, which she got out of my medicine-chest; I missed the bottle this morning. No, that wouldn't have hurt you, child; I don't suppose for a moment she meant to hurt you. But it was a cruel trick, all the same. Do you know"—and he looked at me searchingly—"what she did it for?"

"Oh, yes, she told me! She wanted to get at a letter—from a friend, which I wore round my neck. She wanted to read it, and she couldn't get it without stupefying me, because I was holding it. But I have forgiven her, and promised I would ask you to let her stay. Mr. Rayner, you must let me go!"

"I will let you go if you wish it, though the Alders would seem more like a tomb than ever without you, child," said he sadly, almost tenderly; and the tears came to my eyes. "But you cannot go to-day. Think what people would say of us if if got rumoured about that our child's governess was so cruelly treated under our roof that she went away without a day's warning; for every one counts upon you at the school-treat, and I believe our young friend Laurence—don't blush, child—would go off his head, and accuse us of murdering you outright, if he were to hear you were gone. And you would find it difficult, believe me, child, to get another situation, if you left your first so quickly, no matter for what reason. No; you shall have a different room, or Jane shall sleep in yours for a week or so, until your very natural nervousness has gone off; and then, if at the end of the three months, you still wish to go, why we won't keep you."

He spoke so kindly, and yet with such authority of superior wisdom, that I had to give way. Then, bound by my promise, I had even to ask again that Sarah should stay, and let Jane do as much as possible for me just at first.

But later in the day I was not pleasant to see Sarah's acid smile when I said to her, "I kept my promise, and asked Mr. Rayner for you to stay, Sarah."

And, as I looked at her face, which could never seem to me again to look anything but evil, a sudden horror seized me at the thought that I had pledged myself to stay for five whole weeks more in the same house with this woman.

CHAPTER XIV.

The next day, which was Thursday, when lessons were over, I sauntered out into the garden, with a book in my hand, and found Mona sitting among the reeds close to the pond, not far from my "nest," crooning to herself and playing with some sticks and bits of paper.

"Come, come," crooning to herself and playing with some sticks and bits of paper. At sight of me she slid along the reedy swamp which was her favorite haunt, and looked over two little sticks, the bits of paper she had been playing with; and, when I bent down to speak to her, she threw herself up, and screamed and kicked. I stooped and picked up one or two of them in a hand I knew, and I had not made out a dozen words before I was sure that Mona had somehow got hold of a note from Mr. Laurence Reade to me.

Down I jumped in a moment, caring no more now for the mud than Mona herself. I dug up the bits she had buried, and took from her very gently those she was still clutching, though my fingers tingled to slap her. I hope it was not revenge that made me carry her indoors to be washed. Then I searched the ground where I had found her, and discovered more little bits, and a torn envelope directed to "Miss Christie." I ran in, and up to my room, and my mangled treasure, carefully cleaned the fragments, and, after much labor, as well as I could make out—

"DEAR MISS CHRISTIE,—I am so anxious about you that I must write, if it true that"—here there was a piece missing—"an accident, that you are ill, hurt? If you are safe and well, will you pass the park in your walk to-morrow, that I may see you and know that you're another piece missing. I shall put this on the seat near the pond, where I know you go every evening. Yours very sincerely, LAURENCE READE."

It was dated "Wednesday," and this was Thursday afternoon; so that it was this morning's walk that he had meant. Oh, if I had only come out here last night and found the letter! I would go past the park to-morrow; but perhaps it would be too late, and he would not expect me then—he would think I was too ill to come out.

So the next morning in our walk, I took care to pass Gold-ham Hall, both going and returning; but the first time I saw Mr. Rayner and Mrs. Reade sauntering along together under the trees in a very friendly manner.

The next evening I had to go to tea at Mrs. Manners', to take part in a final discussion of the arrangements for the school-treat on the following day. Mrs. Manners, who was a very simple, kindly lady, greeted me with rather a perturbed manner, and introduced me half apologetically to the Misses Reade, the elder of whom was stiffer and the younger more awkward than ever, as they just touched my hand, and they talked about village matters to Mrs. Manners, ignoring me altogether, until two little middle-aged ladies came in who, Reade were very kind to them in a patronizing way; and a shy girl came in, who was better dressed, more accomplished, they evidently looked down upon her from a very great height. I afterward found that she was the daughter of an attorney, and could not expect to be so fortunate as to meet neutral ground.

Then we had tea, and Mr. Manners made me sit by him. He went out as soon as it was over, and we all went back into the drawing-room. Mrs. Manners asked me if I should like to come up-stairs and see the things for sale, all the rest of the ladies having seen them many times already. So we went up only.

"You have never been in a situation before, have you?"

"No, never before."

"A governess's position has many trials and difficulties."

[TO BE CONTINUED.]

THE CHILDREN'S CORNER.

Princess Fairise of the White Heart.

BY A. G. B.
(Continued from page 43.)

CHAPTER II.

But alas! The gift had already been bestowed upon their daughter. Little did they (the King and Queen) think that at the time of the fete, when the cloud had come over the sky, that it was the wicked fairy Offell. But as Princess Fairise grew older and older and yet did not utter a word, it began to dawn on them their child was dumb. The King and Queen were heartbroken, of course, and indeed so were the whole court; but in the midst of their grief help came. There had been a certain fairy who everybody thought was dead, and who had not been asked to the christening on that account. But in spite of all this, as soon as she heard of Fairise's misfortune, she came to the rescue. This fairy's name was Fairise, also, and she was as sweet as Offell was horrid. Princess Fairise at this time was fifteen years of age, and when the fairy came she said that in three years Fairise would have the spell which was thrown over her broken. Besides this, she said as a christening gift she would bestow on Fairise such a sweet disposition that though she was dumb everybody would love her. These words were no sooner spoken than the charm began to work. The people were so charmed with her (the Princess) that they called her Princess Fairise of the White or Good Heart. It was a year since the fairy had come and the Princess was now sixteen. One evening (it was the summer), the Princess, who had retired earlier than usual, heard a noise. She asked the ladies who were with her if they heard it, but they said they had not heard any sound, so the Princess thought she must have imagined it, so she dismissed her attendants and went to bed. She lay there musing for quite a time and then fell asleep. After sleeping for quite a long time she woke up, and, lo! who should she see standing before her but the fairy Fairise. The fairy smiled at her bewildered look, and said: "You wonder what has brought me here at this time of night; but I have come to tell you something you have to do." She (the fairy) asked Fairise if she had heard a noise, and Fairise by signs told her she had, and how she had questioned her attendants about it, and they had said no. The fairy then told the Princess that her brother the Prince had run away, and the noise she had heard was the noise he had made when he was getting ready. She also said that the Princess would have to get up and dress and go after him without letting anybody know or hear, and as soon as she found him she would recover her speech. She gave the Princess three pieces of glass and a pair of shoes, and she then told her that when in great need of anything to take a piece of glass and hold it in her hand and to wish for whatever she needed, and to be careful to hold it in her right hand, and as soon as the thing she wished for came in sight to throw the glass away, but not a minute before. The shoes, she said, would carry her over land and sea. As soon as she told her this she disappeared. The Princess got up, dressed herself, tied up some clothes, put her purse in her pocket, and, with the things the fairy had left, and some provisions, set out. She walked till she was out of sight of the palace and then she sat down and had something to eat. Then she set off again, and soon she came to a large forest; she tried and tried to get through the trees, but she could not. Then she thought of the shoes, and she had no sooner put them on than she felt herself rise in the air, and before she knew

where she was she was on the other side of the forest. She sat down again to rest, but fell asleep. When she awoke she looked around and in the distance she saw her brother; she again put on her shoes and was close beside him when he looked around and saw her; he then started forward, she following. All of a sudden they came in sight of a castle, into which he vanished; she followed, and was just opening the door when she fell in a swoon on the steps. When she came to, she found herself in a large hall and a young man bending over her; he asked her how she had happened to come there, and she tried to explain to him, but he could not understand, but one of his servants who could understand signs told him all her history, and that she was a Princess. He then told her that he was a Prince and that his name was Albertus, and that her brother was hiding in a cave about two miles away. She immediately started up, but was detained by the Prince, who asked her if she would not have a carriage; she shook her head. She then started off, and after she had gone about a mile, she drew from her bag one piece of glass; she then wished for an army of soldiers. Soon they arrived at the cave where the Prince was sitting all alone. As soon as he saw his sister he tried to escape, but could not. The minute the Princess saw her brother she ran to him and they embraced each other. The Princess felt a strange feeling come over her; she then remembered the fairy's

The Intruder.

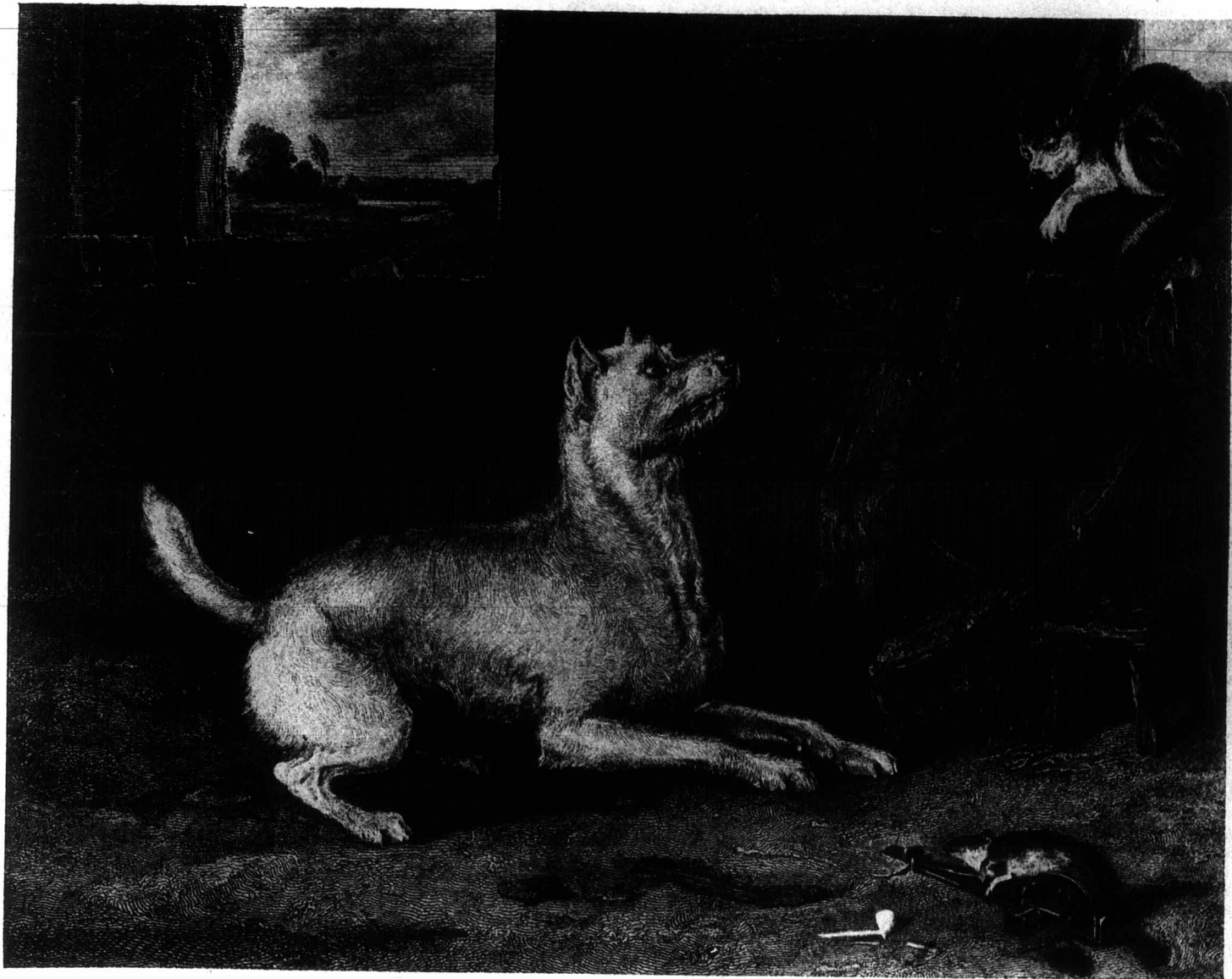
BY EDWIN LANDSEER.

It is amusing to read the old style of criticism with which Landseer's pictures were greeted fifty years ago. In those days "high art" was a sort of religious prejudice amongst connoisseurs, and to "seek companionship with art in its higher paths, to let the aim keep pace with the on-march of intellect, and by the selection of worthy themes to become a great teacher" was inculcated in the artist as his duty and calling. There is, therefore, throughout much of the comment on Landseer's work in those days a half deprecatory tone. The genius displayed, the skill of handling, the vigor of expression, is admitted, but it was contended that the subjects on which he employed his eminent powers were unworthy of them, or that at most they did but "verge upon the better order."

Of "The Intruder" the leading art journal of the first half of the present century remarks: "It would better please us to see the genius of the artist exercised on worthier themes—themes to which his large mind and deep knowledge of art could render ample justice, and which might be so many lessons to mankind."

Whether the communication of the enjoyment of the life and humor of nature may not be as worthy an employment of large powers in art as well as in literature may well admit of question.

The stimulation of a quick perception of the flashes of drollery that mingle in the varied action of daily occurrences is in itself a good gift, and he is no small benefactor to his kind who makes a contribution of that "one touch of nature" appealing to all except the unob-servant dullard with some bright gleam of the innocent fun of life. We feel this in "The Intruder," and enjoy it; in the vigorous attitudes of the two irreconcilable enemies, whose conflicting antipathies and interests are too strong for any hope of a peaceable settlement. The situation gives us no anxiety for the safety of either. We see puss with all the concentrated energy ready for a necessary lightning spring from pursuit, if called for, and at liberty to send out all



THE INTRUDER.

her heart in anathemas on the truculent invader on property hers by right of first discovery. The intruder, on his part incapable of making any distinction between a commendable aversion to rats and a prejudiced antipathy to cats, is obviously well-prepared to assert the rights of the strongest.

Landseer painted this picture at the age of sixteen. The composition is excellent of its kind, and the picture is painted with a force wonderful for so young a hand. It illustrates in a striking degree how close must have been his companionship with animal life—how keen his observation of their forms and habits and qualities of instinct. The creatures of his pencil exhibit in a vivid manner the feelings that move them in the diversified phases of action; and amongst the few great animal painters Landseer's claim to the first place offers strong pleas hard to controvert.

word that she would recover her speech, and the first words she said were "My brother." Then she took another piece of glass and wished for a carriage and horses. No sooner had she uttered the words than a beautiful carriage came in sight, and in it was sitting Prince Albertus; he then assisted Fairise to get in, and soon all three were on the way to the castle belonging to King Loyal Heart.

The King and Queen, who had long supposed their children to be dead, were, as you may suppose, nearly wild with delight, and willingly gave their daughter to Prince Albertus, who had asked for her hand. And three weeks after, if you had come to the city where King Loyal Heart lives, you would have heard the wedding bells ringing for the marriage of Prince Albertus and the Princess Fairise of the White Heart.

The "Fin-de-siecle" Baby.

Our dear little baby-man, now only three,
Was naughty one day as naughty could be;
Some rules he had broken right wilfully,
And mamma perforce must chide.

Then up spoke the father, his voice was stern,
"This thing must be ended, a new leaf we'll turn,
For mamma's too easy, and baby must learn
That laws cannot lightly be broken."

The little man turned, and a calm surprise
Looked out from the depths of his bonny brown eyes,
Then with desperate earnestness he replies,
"Papa, you are not in this fuss." —Bessie B. Pierce.

Recipe for Brown Bread Pudding.

Take six ounces of stale brown bread crumbs, six ounces of fresh butter, four eggs (the yolks and whites beaten separately), half a pound of brown sugar and a very little cinnamon; cream the butter, then mix well with sugar till quite smooth, add the beaten eggs and stir in gradually the other ingredients. Steam the pudding for three hours; when turned out, pour melted cherry jam over it and serve hot.

GOSSIP.

In writing to advertisers please mention the Farmer's Advocate.

Miss J. D. Thompson, Ontario County, Ont., under date of January 21st, 1897, writes: "I am very much pleased with the improvements in the ADVOCATE."

W. C. Edwards & Co., Pine Grove Stock Farm, Rockland, Ont., per J. W. Barnett, Manager, write: "We are having a very cold wave just now, but nevertheless the Shorthorns and Shropshires are doing well. Our young bulls this year are the best we ever had, and are in good growing condition. The young calves are coming fine. Bessie of Rockland has given us another roan bull, a full brother to Banker, and quite a good one. Rosebloom (imp), has given us a red heifer. By the way, I might just say that Rosebloom is a full sister to Blue Ribbon, the bull that Mr. Simmons, of Ivan, Ont., has just put at the head of his herd. We have a yearling bull out of her, and got by the Knight of St. John. He is fit to head any herd, and will be sold right. The demand for bulls is good, but so far the sales are slow. We are looking for an improvement towards spring."

EXPERIENCE WITH TWO JERSEYS.

To the Editor FARMER'S ADVOCATE: SIR, Have been interested in the performances of the queens of the dairy herd reported in your journal of the past year. Let me give you my experience with two Jerseys purchased from Messrs. Reburn. My first purchase was Eva of Ste. Anne. She calved December 4th, 1895. In the month of February she gave 934 pounds of milk, yielding 394 pounds of butter after taking all the cream and milk wanted for a household of six. Her daily feed was 10 pounds of bran and 5 pounds ground peas and oats, with cut cornstalks and clover hay. At their dispersion sale I bought Hugo's Pet of Ste. Anne; dropped July, 1893. She is now keeping a family of six in all the butter, cream and milk wanted, on a ration of 3 gallons bran, 11 gallons ground oats, 3 pounds oil cake, and 1 bushel carrots ground with hay, Timothy and clover mixed, for her coarse feed. Pet had been very badly wintered, and even when purchased was in very poor condition. Now, I admit that, compared with the published records, these performances are poor, but you will bear in mind that these cows are kept simply for family purposes, in which cream and milk are the primary objects in view, and butter only secondary. They are not in charge of a skilled dairyman, fed on a carefully balanced ration and treated with a view to obtain the greatest possible results. Were they, I am confident, that their production of both milk and butter would be considerably increased. I. MAXWELL, Prescott Co., Ont., Jan. 20, 1897.

BOOK TABLE.

The "Farming World" Year Book for 1897 comes to us from the publishers, 56 George street, Edinburgh, Scotland. After the calendar comes a few ruled pages for memoranda, followed by a number of practical and instructive articles—many of them illustrated—on live agricultural subjects. Various breeds of sheep, horses and cattle are given attention, as well as fruit-growing, dairying, and other topics. The book is in the usual neat form, well bound in pamphlet covers and clearly printed, reflecting credit on its publishers.

On the occasion of the recent successful convention of the Eastern Ontario Dairy-men's Association, in Brockville, the Recorder, James H. C. P. Graham is the enterprising manager, issued a fine souvenir number containing a great deal of interesting historical and other matter, adorned with a colored cover and embellished with portraits of the Eastern Association officers, leading dairymen and others, together with a neat map of Ontario Province. In Eastern Ontario, with its many splendid dairy herds, fine factories and creameries and intelligent dairymen, the industry holds an impregnable position.

James J. H. Gregory & Sons, Marblehead, Mass., indicate by their extensive and splendidly gotten up catalogue of home-grown farm and garden, vegetable and flower seeds that they are a reliable firm. The descriptions and illustrations of the various varieties of vegetables, etc., are not overdrawn, as is often the case in such catalogues, but such as indicate the real merits of what is described. Among the novelties are the Gregory's Surprise Pea, Hollander Cabbage, Luban Ensilage and Giant Ensilage Corn, Honor Bright Tomato, Early Roberts Potato, besides cucumbers, egg plant, squashes, etc., and many beautiful flowers.

That old and popular firm, the Steele, Briggs Seed Co., have issued for 1897 one of the most interesting and beautiful catalogues we have yet seen. On the front cover is a rare bouquet of aquilegia, perennials phlox, coreopsis lanceolata and achillea alba. There are five pages of flower novelties and specialties, besides the following: Rogers' Lima Wax Bean, Lupton Cabbage, Mammoth Warty Hubbard Squash, Oliver Scarlet Short-leaf Forcing Radish, and New Columbus Gooseberry. The list of general farm seeds is long and attractive. Send for a copy of this catalogue.

We have received from Mr. F. L. Houghton, Brattleboro, Vt., a copy of Herd Book, Volume No. 14, of the Holstein-Friesian Association of America, beautifully printed and substantially bound, containing the entries of bulls from 21,695 to 22,586, and cows from 37,979 to 40,516. Besides other information usually given in such works, we find included Vol. VII. of the Advanced Register, containing milk and butter records made in what might be called the "aristocracy" of the "black and whites." There is also an official authentic schedule of weekly butter records, the tests of which were carried on under the personal direction of officers of various experiment stations, such as those at Cornell University (Ithaca, N. Y.), New Jersey, Wisconsin, Michigan, and others. Some sixty records are given in this unimpeachable list, varying from about 250 pounds of milk and 8 pounds butter-fat per week to 524 pounds milk and 18 pounds butter-fat, the latter equaling about 22 pounds butter containing eighty per cent. fat. The percentages of fat range from about 2 to 5.8, the average being from 2.70 to 4.27. The latter feature of the Association's work is greatly to be commended.

Dispersion Sale!

Over 50 Shorthorns and a lot of exceptionally

Fine Heavy Draft Mares.

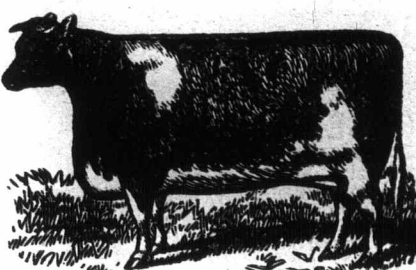
Everything offered REALLY GOOD. Fuller particulars later.

JOHN I. HOBSON, Mosboro, Ont.

THE BEST AT ALL TIMES! Trees, Vines, Roses, etc., etc., for Orchard and Lawn. Our new priced catalogue is free to buyers, showing that money is saved when ordering at the CENTRAL NURSERY. Try it! Nut Trees, Columbian Raspberry Plants; also Seed Potatoes. A discount on early orders. We employ no agents. A. G. HULL & SON, St. Catharines, Ont.

GEO. KEITH'S SEED Catalogue Now Ready. 124 King St. E., - Toronto. SEND FOR ONE.

Arthur Johnston, Greenwood P. O. and Telegraph Office,



HAS FOR SALE AT EXCEEDINGLY LOW PRICES

17 EXTRA GOOD SHORTHORN BULLS 17 fit for service; also an equally good lot of Cows and Heifers, the best we ever offered.

Send for Catalogue and prices. Enquiries answered promptly. Claremont Stn. C.P.R. or Pickering Stn. Q.T.R. Our motto: "No business, no harm." 5-1-y-om

February Offering: Improved Yorkshire Swine, Shropshire Ewes in lamb, Shetland Pony.

RICHARD GIBSON, DELAWARE, ONT.

CARGILL HERD OF SHORTHORNS.

We still have 3 extra good young bulls for sale, and a beautiful lot of 13 heifers, all last season's crop. We will be glad to answer any inquiries regarding them, or to show them to any one who wishes to purchase anything of their kind, and can guarantee them good enough to suit. 11-y-om H. CARGILL & SON, Station on the farm. Cargill Stn. & P. O.

MAPLE LODGE STOCK FARM. Fifteen splendid young Shorthorn Bulls for sale, and a few Leicesters. JAMES S. SMITH, Maple Lodge P.O., Ontario. 9-1-y-om

FOUR AYRSHIRE BULLS FOR SALE..... Two one year old, and two two years old. Good pedigrees. M. BALLANTYN, Box 28, St. Mary's P. O.

100 BEST EVERGREEN SEEDLINGS

delivered free by mail, only \$1. 100 best evergreens 2 to 5 ft. delivered east of Rocky Mt., only \$10. Write for free catalogue and price list & 50 big bargains, selections from complete nursery stock. Cash paid for getting up clubs or to salesmen with or without experience. Address

D. HILL EVERGREEN SPECIALIST, DUNDEE, ILL.

SHORTHORNS FOR SALE

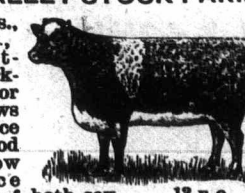
18 Young bulls (12 red and 6 roan), also 20 red heifers, bred from the best Booth, Campbell, and Cruickshank cattle. Awarded first for best herd of Shorthorns at Toronto, Ottawa, and Montreal, 1896. In Chicago, 1895, three first herds out of five; also sweepstakes for bull, heifer, and herd, under two years old, all beef breeds competing; winning more money and first prizes than any herd shown in Chicago. Price from \$50 to \$100 each. An electric car on the Yonge Street Road, from Toronto, passes the farm three times a day. J. & W. RUSSELL, RICHMOND HILL, ONT. 1-0-om

5 YOUNG SHORTHORN BULLS

Good enough to head breeders' herds, got by the show bull, Earl of Moray, and from a herd of cows the equal of any in the Province for flesh and substance. Also Mam. Bronze turkeys—fine birds. Write now, or come and see— E. Gaunt & Sons, ST. HELEN'S, ONT. Lucknow Station, G. T. R., 3 miles from farm. 13-1-y-om

THE GRAND VALLEY STOCK FARM

G. & W. GIER, Props., Grand Valley, Ont., Breeders of Short-horns and Imp. Yorkshires. We offer for sale young bulls, cows and heifers of choice breeding and good quality at very low prices; also choice young Yorkshires of both sex. 13-y-0



W. G. PETTIT, FREEMAN, ONTARIO,

BREEDER Shorthorns, Shropshires, and Berkshires Offers for sale a choice lot, consisting of eight young bulls, 40 one-, two- and three-year-old ewes, sixteen yearling rams, and twenty ram lambs, and a choice lot of Berkshires. Big bargains will be given for the next thirty days, as I want to reduce stock before winter. 15-y-om

FOR SALE!

One yearling SHORTHORN BULL, two BERKSHIRE BOARS fit for service, and a fine lot of fall PIGS. All at very moderate prices. JOHN RACEY, Jr., - Lennoxville, Que. 17-1-y-0

SHORTHORN BULLS

I have six young bulls, got by Aberdeen (imp); good ones. One is a full brother to the champion heifer at Toronto and Ottawa fairs this fall; also some fine young heifers. Write for prices, or, better, come and see them. JOHN MILLER, Markham, Ontario. Stations—Locust Hill, C.P.R. Markham, G. T. R.

SHORTHORNS!

I have four beautiful young Shorthorns due to calve in Jan. to Perfection's Hero—20881—also three grand red heifer calves, which I will sell at the very lowest possible living price. Also an A 1 Berkshire boar, ten months old. See stock notes. Wm. Rivers, 13-1-y-om Springhill Farm, WALKERTON, ONT.

Willow Bank Stock Farm

1855 to 1896. One of the oldest established herds in the Province, heavy milking qualities being a special feature of the herd. A number of choice young bulls and heifers for sale at reasonable prices. Address. 21-1-y-om JAS. DOUGLAS, Galedonia, Ont.

SIMMONS & QUIRIE.

Shorthorn Cattle, Berkshire Swine—Money-making Sorts. The imported bull, BLUE RIBBON—17095—(63736), by ROYAL JAMES (54972); dam ROSE-LINTY, by GRAVESEND (46461), heads the herd. Female representatives of the celebrated Mina, Strathallan, Golden Drop and Mysie families. The Berkshires are choice prize-winning stock. Easy to feed, quick to sell. Stock for Sale. C. M. SIMMONS, Ivan P.O., Ont. 1-1-y-om JAMES QUIRIE, Delaware, Ont.

W. H. & J. O. FIELD, VANESSA, ONTARIO, Breeders of Shorthorn Cattle, have for sale a fine two-year-old bull at \$60.00; also a choice eight months' old bull calf at \$50.00 winner of eight firsts. These bulls are of choice quality and breeding. 23-1-f-0

MAMMOTH BRONZE TURKEYS, SILVER-GRAY DORKINGS, BLACK MINORCAS, BROWN LEIGHORNS, AND PLYMOUTH ROCKS, All winning strains. Pairs mated not akin. T. H. H. SHORE, White Oak, Ont. 3-b-0

A Notable Clydesdale Importation.

Mr. O. Sorby, of the firm of D. & O. Sorby, Guelph, Ont., recently spent a week at Meadow Lawn Stock farm, of Mr. N. P. Clarke, St. Clair, Minnesota, selecting a shipment of mares from that world-famed Clydesdale stud which swept almost everything before it at the World's Columbian Exposition. The visit resulted in the securing of six of the best females in the stud. The selections were made from the standpoint of quality in general, but more particularly in limbs, feet, and action. Better pasterns we never saw than these mares possess. Another point observed was the excellence of the dams, which will be seen below are among the best Scotland has ever produced. We took occasion to visit Messrs. Sorby's stud since the arrival of the new importation, and have no hesitation in stating that a better lot of mares never entered Canada from any source. We were first shown the six-year-old, Miss Stanley 6877; bay in color with white face and hind legs. She is a daughter of Lillie Macgregor 3937, the sweepstakes female at the World's Fair in 1893. Miss Stanley was sired by Stanley Prince (6315), a winner of many prizes in Scotland. Miss Stanley was awarded first prize as a three-year-old at the World's Fair. She is now in foal to Prince Patrick (8933), the sweepstakes Clydesdale stallion at the World's Columbian. Princess Patricia, by Prince Patrick, is another member of the new lot. She is out of Dora Macgregor 3951 (who was a successful competitor in Scotland and America), by Macgregor (1487) by Darnley (222). Princess Patricia was foaled in 1894, and is in foal to Stanley Prince. Princess Alexandria, a foal of 1896, is perhaps the "star" of the company, being from the World's Columbian sweepstakes, Prince Patrick and the sweepstakes Lillie Macgregor. She was chosen from among some 70 foals as by far the best of the lot. She will be watched with interest as maturity advances. Diana MacKay 6947, foaled in 1892, was our choice in the mature mares; she is by MacKay (5194) by Macgregor (1487). Her dam was Jane Myrie 5278, imported from Scotland by Messrs. Sorby some years ago and sold to Mr. Clarke at a long price. Sonie Lass 7660 (a good mate for Diana MacKay) is by Second Choice 5566 by Chastler (4291) by Darnley 26 (222), and out of Sonie 5287 by Baron O'Threeave (8403). Diana MacKay and Sonie Lass are both in foal to Prince Patrick. The yearling, Mae Margaret by Stanley Prince, and out of Sude Macgregor 6196 by Macgregor, is a big filly of true Scottish character. Mr. Sorby while in the West visited the noted stud of Col. Holloway, Alexis, Ill., and secured what he considered an ideal Clydesdale stallion in Lord Charming, by Prince Patrick, the yearling, Mac Margaret 5647, by Cedric He is sired by Prince Charming 5647, by Cedric Guthbert's Lady 3426, by St. Cuthbert by Prince of Wales (673), which makes Lord Charming of inbred Prince of Wales breeding. He is a very handsome horse, full of quality in body, limbs, and feet, and his action is superb before and behind. Messrs. Sorby have secured him to cross with their Grandeur fillies, which he should do to perfection. During our visit we saw some half dozen excellent mares in foal to Grandeur, a number of which will be disposed of to make room for the new arrivals, which fill the stables too full. The young fillies by Grandeur testify to their sire's propensity by their resemblance to him in general excellence. Some of them too are for sale.

We would not forget to mention the handsome Hackney yearling son of Miss Baker, which promises well for the future. The herd of 25 Ayrshire cows and heifers, too, must not be forgotten. The foundation stock was purchased from herds of Messrs. Morton, of Hamilton; Guy, of Oshawa; and Kaine, of Byron. At the head of the herd stands an excellent young bull from the herd of Hon. Thos. Ballantyne & Sons, Stratford. The Ayrshires are kept entirely for the milk they give, and not at all for the show-rig.

GOSSIP.

Mr. Joseph Cairns, Camlachie, Ont., writes that he has sold all his bronze turkeys through advertisement in the ADVOCATE, but is still receiving numerous enquiries for birds. He now offers eggs. See his change in advertisement.

The dairy school at Sussex, N. B., will be opened on February 23rd. Mr. John Robertson, Dairy Superintendent of New Brunswick, and Mr. Harvey Mitchell, Instructor in Cheesemaking in New Brunswick, will be at the school to give instruction to the pupils in the several branches. Mr. C. Daigle will also be in attendance in the milk-testing department. He is competent to speak French, and will be useful in the case of students from the French-speaking districts of New Brunswick.

Southdown sheep breeders in the United States and Canada will be pleased to learn that the Southdown breeders in England, that have heretofore had two organizations, the "Southdown Sheep Breeders' Association" and the "Southdown Club," have united into one association, the "Southdown Sheep Society." The new society will doubtless have the hearty support of the American Southdown Association, and importers of sheep from England will have little difficulty in recording their importations.

The following are the returns from the first five cows (out of thirty-one entered) for the milking contest held at the Ballarat (Australia) Agricultural and Pastoral Society's Show on November 19 and 20, in competition for the gold medal presented by His Excellency the Governor. The cows were milked dry in the evening of the 18th inst., the tests being taken from two milkings on the 19th inst. and one on the 20th inst.:

Table with 4 columns: Name, Milk, Test, Butter. Rows include J. G. Bjorksten (Myrntong) 763 44 3.75, J. G. Affleck (Ballarat) 68 44 3.35, Wm. Clark (Warrenheip) 981 30 3.20, J. S. Douglas & Sons (Ballarat) 743 38 3.12, D. James (Kooroocheang) 812 29 3.9.

The first prize cow was a cross between a Shorthorn and an Ayrshire; the second prize-taker was a three-quarter-bred Alderney; the third prize cow was a Shorthorn, which gave the largest quantity of milk; and the fourth prize-taker was a cross-bred showing Ayrshire blood.

GOSSIP.

In writing to advertisers, please mention the Farmer's Advocate.

A shipment of Clydesdale stallions was recently shipped from Scotland to Russia.

An exceptional opportunity to obtain two choice Ayrshire bulls, one a well-tryed and splendid stock getter, the other a yearling, is announced by Mr. J. A. Carrick, Kinross, Ont., as per advertisement elsewhere. Read it.

Mr. W. C. Shearer, "Sprucedale Dairy Farm," Bright, Ont., writes that he has sold about all the Barred Plymouth Rocks he can spare, but is making some special offerings in Jersey calves. Our readers will take note of his change in advertisement.

Mr. John I. Hobson, of Mosborough, Ont., makes a preliminary announcement in another column of a dispersion sale of his fine large herd of Shorthorn cattle and a lot of exceptionally good draft mares. The date will probably be April 5th. Further particulars later.

F. Birdsall & Son, Birdsall, Ont., report the following recent sales: 1 Jersey bull to F. J. Macklem, Fenella P. O.; 1 Shorthorn bull to W. Taylor, Peterboro, Ont.; 1 Shorthorn bull to James Lancaster, Birdsall, Ont.; 1 Oxford ram to H. T. Free, Campbellford, Ont.; 5 Oxford ram lambs to Henry Arkell, Arkell, Ont. Our cattle are doing nicely, and our sheep never came into the yard in better trim. There is a good demand for both Shorthorn and Jersey bulls at moderate prices.

A notable horse sale was recently completed between His Grace the Duke of Marlborough and Mr. Adam Beck, of London, Ont., viz. the sale to the former of the hunter gelding, "Long Shot," a first premium winner at the last New York Horse Show. "Long Shot" is a bay gelding, up to carrying a heavy weight. He is practically a Thoroughbred, being sired by a son of Longfellow. His dam is by Baron Rothschild, 2nd dam by Lord Byron, 3rd by Beacon, and 4th was imported Alice Gordon. We understand the price was \$1,500.

Mr. J. C. Snell, Snelgrove, Ont., writes:—"The demand for Jersey cows and heifers since the advent of the New Year has been brisk, and a number of very satisfactory sales have been effected. Enquiries for young bulls are also increasing. Dairy farmers are learning from experience and observation that the best way to improve the quality of the milk in a herd is by the use of pure-bred bulls of rich breeding. I have a few very promising young cows and heifers for sale, coming due to calve in March, April, and May. These are in calf to Massena's Duke, whose dam gave 46 lbs. milk daily, and made 17 lbs. butter in seven days. Also a couple of very fine young bulls fit for service."

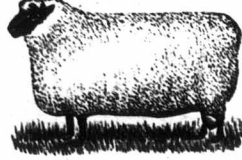
Owing to the continued development of dairying, particularly buttermaking, the demand for dairy-bred cattle continues strong throughout Canada. New blood is continually required. Dairy farmers and breeders will, therefore, be specially interested in the announcement elsewhere of the "Brighton Place Herd of Jerseys" (Rochester, N. Y.), owned by Mr. P. J. Cogswell, who is offering a few descendants of the famous old Exile of St. Lambert 13657, who has 53 daughters and over 100 granddaughters in the 14 lb. (butter per week) and over 1st, one of the Exile Belle having made 52 lbs. 7 oz. in seven days. Mr. Cogswell's herd is well known to several Canadian Jersey breeders, and is one of the best in the United States. Our readers would do well to communicate with him at once.

Mr. Arthur Johnston, of Greenwood, Ont., writes of his herd of Shorthorn cattle as follows: "They are now all in the very best possible form to do ourselves or our customers most good—none fat and none poor, but all in the healthiest thriving condition. The young bulls, of which we have a big lot, are a very handsome and promising lot—big and sappy. Our yearling heifers are unquestionably the very best we have ever bred or imported. We are now fitting up for exhibition four of the lot of 13 yearlings; also a few two-year-old heifers, as well as a two-year-old bull. The magnificent white twenty months' old Duchess of Gloster bull (imported) 34th Duchess of Gloster cow. There are undoubted signs of improvement in the Shorthorn trade. The demand is good, but prices are still very low."

There are three sorts of horses which farmers can breed for which good prices can be obtained: the heavy draft, the high-class saddle horse, and the now popular high stepper, having intelligence and beauty of form. To get these one must use suitable sires, because ever so good a mare cannot produce a good foal from an indifferent sire. As the breeding season will soon be here, horsemen will require to look about them at once for the stallions to be used this spring. Mr. H. N. Crossley, the noted Shire and Hackney breeder, of Sandy Bay Farm, places at the disposal of horsemen a number of his Hackney stallions, which have, in competition with the best horses of the world, brought credit to themselves and owner. Not only are they themselves winning horses, but the stallion Fireworks has proved himself a getter of the highest type of cob and carriage stock. Rosseau Performer is just at the age to commence heavy stud duties, and cannot fail to impress himself on his offspring, so pronounced is his beauty as well as his high and graceful natural gait. These horses are bred from best English stock, a knowledge of which fact explains their superiority. Mr. Crossley is conferring a very great privilege and benefit on the horse breeding interests of the country in offering these noble horses so liberally. The Hackney mares offered are in keeping in breeding and quality with the two stallions mentioned. With regard to the Shire fillies offered, we have only to refer to the handsome colored inset of the Christmas number of the FARMER'S ADVOCATE to indicate their excellence. These mares have each in turn taken sweepstake premiums at the Toronto Industrial, which alone decides them to be the best in Canada. Notice Mr. Crossley's advertisement in this issue.

TO FLOCKMASTERS AND OTHERS!

Hobbs' Sheep Dip



Cold Water. Non-Poisonous.

AGENTS WANTED in every township. Good commissions can be made by live young men in selling this Dip. DISEASES of all kinds prevented by regular use of HOBBS' DIP.

SIMPLE IN APPLICATION.—It mixes at once with cold or warm water and becomes instantly white like milk. N.B.—Beware of spurious imitations. EFFICACY.—It is certain and speedy destruction to Ticks, Fly, Maggot, Lice, and all insects and parasites. It is as efficacious as any of the poisonous Dips in the market. It forms an Emulsion with water (not a solution), and this insures a more lasting effect of the Dip than can be the case when a solution is used.

WOOL IMPROVED.—Its effect on the wool is natural. It promotes its growth without injury to the yolk and fiber of the wool. It feeds and nourishes the fleece by keeping the sheep healthy. HEALING PROPERTIES.—It heals wounds and sores and insect bites in a marvellous manner. Where the wool has fallen off it restores the growth speedily. Sold in Medium-sized Tins, 40c. Sold in Large-sized Tins, 75c.

HOBBS MANUFACTURING CO., London, Ont.

Sample bottles free.

HAWTHORN HERD

of DEEP MILKING SHORTHORNS.

FOR SALE—Four young Bulls, three reds and one roan; also Heifers, all got by Golden Nugget—17548—, and from AI dairy cows. WILLIAM GRAINGER & SON, 15-y-om Londesboro, Ont.

FOR SALE!

A choice lot of Jersey Heifer Calves (pure bred and high grades); good colors, and from rich, heavy milkers. Their dams have averaged the past year 330 pounds of butter each, and all sired by "Canada's Hero," whose dam gave 19 lbs. 5 oz. in seven days. For prices, write to

W. C. SHEARER, o Bright, Ontario.

Price. JEREYS FOR SALE!

\$30 Bull, two years old next June; solid color; a fine animal, of good milking strain.

\$65 Heifer expected to calve in a day or so; grand old full sister to above.

\$70 Heifer, two years old in May, due to calve early in March; granddam tested seven per cent. butter-fat and 42 lbs. milk a day.

All above are registered. Five per cent. taking two, seven per cent. for three.

G. A. DEADMAN, Druggist, Brussels, Ont.

The Don Herd of Jerseys

Comprise the choicest strains obtainable, including St. Lambert, Tennessee and combination blood. A new offering a few very choice bull calves from imp. and home-bred dams, and sires of best breeding obtainable.

Address: DAVID DUNCAN, 9-1-y-om DON P. O., ONT.

Exile of St. Lambert 13657

Founder of the great EXILE family of large milk and butter producers. Fifty-three tested daughters—more than any other bull, living or dead. A few choice descendants for sale. Heifers bred to EXILE'S SUCCESSOR 42716.

P. J. COGSWELL, 3-1-y-om ROCHESTER, N. Y.

BRAMPTON JERSEY HERD.

FOR SALE—A grand reg. Bull, two years old, bred direct from imp. stock. Three reg. Bull Calves; a number of high-grade heifers, bred to Sir Ollie; also Berkshire Pigs and Barred Plymouth Rocks. Prices low. Write us. B. H. BULL & SON, BRAMPTON, ONT.

MAPLE CITY HERD OF JERSEYS.

FOR SALE—That grand stock and show bull, Massena's Son (7608); also two very fine young bulls fit for service, of the very best breeding. Some choice Black Minorcas, Bronz Turkey, and Toulouse Geese. Correspondence solicited, and any information given. Prices right. WM. W. EVERETT, Box 552, Chatham, Ont.

SPECIAL OFFER FOR DECEMBER.

LEE FARM REGISTERED JERSEYS.

4 young Cows and Bull, - \$300
4 2-year-old Heifers and Bull, 250
4 1-year-old Heifers and Bull, 150
4 Heifer Calves and Bull, 150
Well-bred, good colors. Short of feed. Must reduce stock. Address—

E. PHELPS BALL, 17-y-o Lee Farm, Rock Island, P. Q.

A. J. C. C. JERSEYS FOR SALE.

Young cows and heifers in calf, heifer calves, bull calves, from rich and deep milking ancestry. Testing from 5.60 to 9%, official test. Prices to suit the times.

H. E. WILLIAMS, Sunny Lea Farm, 17-1-y-om KNOWLTON, P. Q.

W. F. BACON, - Orillia, Ontario,

-BREEDER OF- CHOICE REGISTERED JERSEYS

Young bulls and heifers of the best blood for sale. Write me for prices and particulars. 19-1-y-o

GLEN ROUGE JERSEYS.

WILLIAM ROLPH, Markham, Ont., offers twelve Jersey Bulls and Heifers (pure St. Lamberts), out of tested cows. Grand individuals. Prices right. 22-y-om

GOSSIP.

As foreshadowed in the ADVOCATE some time ago, Chicago is to have a live stock show about next November.

The Royal Dublin Society give \$5,000 annually for improving the breeds of horses and cattle in the Green Isle. This is a good idea, but you have got to have the money first.

Messrs. John I. Hobson and F. W. Hodson, of Guelph, who were appointed by the Board of the Provincial Fat Stock and Dairy Show to visit the cities and towns desiring to have the show in 1897, visited London on Jan. 23rd and found a very suitable building for accommodating the stock in the new cattle, sheep, and hog barn erected last summer by the Western Fair Association. At Brantford fairly suitable accommodation was also found. Other points had not then been visited.

While attending the Dairymen's Convention at Brantford Ont., Mr. J. H. Monrad, of Illinois, extended an invitation to Canadian creamery-men to attend the 5th annual meeting of the National Creamery Butter Makers' Association, to be held at Owatonna, Minnesota, on Feb. 15th to 20th, 1897, in which Canadians may become members and compete in creamery butter for the following prizes: For the best package of creamery butter, a gold medal; for the next best package, a silver medal. A diploma will be given to all exhibitors whose butter scores over 90 points; also \$2,000 will be divided pro rata among all exhibitors of butter scoring over 95. No exhibitor will be allowed to enter more than one lot of butter. The President of the Association is J. W. Seger, Pocantonica, and Secretary, E. Sudendorf, Elgin, Ill.

NOTICES.

Do not decide on your selection of flour, vegetable, and farm seeds without seeing Geo. Keith's catalogue, now ready. Drop a card for one to-day to 124 King St., Toronto.

That old reliable firm, A. G. Bull & Son, St. Catharines, Ont., make an announcement elsewhere in this issue respecting fruit trees, vines, roses, etc., that every one should read. A discount on early orders is offered. Write for their catalogue.

Mr. R. J. Shrimpton, of Winnipeg, reports that the sales of farm lands in Manitoba during the year 1896 have been very satisfactory, the company which he represents having disposed of property to the extent of more than \$70,000. It is anticipated that even a better result will take place in the year 1897, because the higher price of wheat and the increased prosperity of farmers in Manitoba will likely attract a large number of new settlers to the Province next spring. We would recommend any of our readers who contemplate settling in Manitoba to write to Mr. Shrimpton for his lists of farm lands for sale.

There is such a vast difference between the crops produced from good and bad seed, and between improved and inferior varieties of vegetables and flowers, that no one can afford to risk sowing risky seed. We therefore feel that the large, reliable seed firms confer a great benefit in sending out their illustrated descriptive catalogues free to those who ask for them. Not only do they describe the different good sorts in such a manner as to assist one in choosing what will best suit his particular tastes, but many valuable hints and the best methods of growing and cultivating are also thrown in free. The catalogue now open before us is that of the firm of D. M. Ferry & Co., of Windsor, Ont., who e seeds are grown on Oakview Seed Farm, devoted to the production of pedigree stock seed, where the best seeds are sown, and also in large consignments to the United States as well. They claim to be the only firm in the world which exports saws to the United States in large quantities, and this trade is not the result of the lower prices quoted, but rather of the superior quality, especially in temper, which commands a ready sale for them despite the fact that when freights and duties are added their cost to the purchaser is higher than that of the highest grade of American goods. For quality, finish and durability their hand saws, crosscut saws, and band saws are equal to the best in the world. Competing at the World's Fair at Chicago against the three largest and oldest American firms, the Galt firm received the highest award. Canada has held a high position in these lines at the great International exhibitions, the R. H. Smith Co. Ltd., of St. Catharines, Ont., having been awarded the gold medal at the Centennial Exposition at Philadelphia in 1876 for the best collection of saws. This firm especially excels in the manufacture of shingle saws and circular saws, which are tempered under the Siemens process, which for this class of goods is considered quite in advance of any other known process. In the extent of their business, the size of their works, and the magnitude of their output the Maple Leaf Saw Works, of Galt, are probably the largest and most complete in Canada, and the R. H. Smith Co., Ltd., of St. Catharines, are a close second. The latter is the oldest establishment of the kind in the Dominion, having been established by the celebrated J. Flint, one of the oldest and most reliable makers of high-grade saws in the U. S. and Canada. Messrs. Shurly & Dietrich were both associated with him as partners in his business at Rochester, N. Y., as was also Mr. R. H. Smith, president of the company at St. Catharines; and this association with Mr. Flint has doubtless contributed in no small measure to their success in their special lines. We can confidently recommend these firms as straightforward and honorable business men, who may safely be trusted to fill orders according to representation.

A FLOURISHING ESTABLISHMENT.

Messrs. Shurly & Dietrich, Galt, Ont., proprietors of the Maple Leaf Saw Works, have, we learn, experienced since the commencement of the new year a distinct improvement in their business, which has at no time been lagging, but has recently taken on a more buoyant aspect, and their shipments are being made not only to all the Provinces of the Dominion, but also in large consignments to the United States as well. They claim to be the only firm in the world which exports saws to the United States in large quantities, and this trade is not the result of the lower prices quoted, but rather of the superior quality, especially in temper, which commands a ready sale for them despite the fact that when freights and duties are added their cost to the purchaser is higher than that of the highest grade of American goods. For quality, finish and durability their hand saws, crosscut saws, and band saws are equal to the best in the world. Competing at the World's Fair at Chicago against the three largest and oldest American firms, the Galt firm received the highest award. Canada has held a high position in these lines at the great International exhibitions, the R. H. Smith Co. Ltd., of St. Catharines, Ont., having been awarded the gold medal at the Centennial Exposition at Philadelphia in 1876 for the best collection of saws. This firm especially excels in the manufacture of shingle saws and circular saws, which are tempered under the Siemens process, which for this class of goods is considered quite in advance of any other known process. In the extent of their business, the size of their works, and the magnitude of their output the Maple Leaf Saw Works, of Galt, are probably the largest and most complete in Canada, and the R. H. Smith Co., Ltd., of St. Catharines, are a close second. The latter is the oldest establishment of the kind in the Dominion, having been established by the celebrated J. Flint, one of the oldest and most reliable makers of high-grade saws in the U. S. and Canada. Messrs. Shurly & Dietrich were both associated with him as partners in his business at Rochester, N. Y., as was also Mr. R. H. Smith, president of the company at St. Catharines; and this association with Mr. Flint has doubtless contributed in no small measure to their success in their special lines. We can confidently recommend these firms as straightforward and honorable business men, who may safely be trusted to fill orders according to representation.

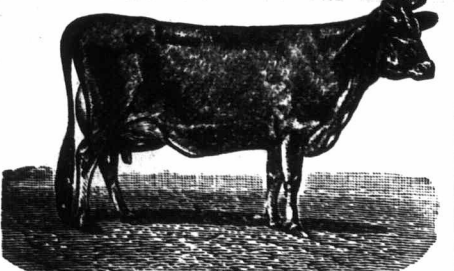
LAST CHANCE

To obtain a young JERSEY BULL from the famous Belvedere herd. As my whole herd now goes to Prince Edward Island, I have reserved for my customers

Six Splendid Young Bulls

Four months to eighteen months old. Sure prize-winners. Reasonable prices to immediate buyers. These are the best I have ever offered.

MRS. E. M. JONES, Box 324, BROCKVILLE, Ont., CAN.



JERSEYS FOR SALE.—Young Cows and Heifers in calf, Heifer Calves and Bull Calves, richly bred, best testing strains, and good color. Also first-class Berkshire Boars and Sows, bred straight from imported stock. Come and see or write for prices.

J. C. SNELL, - Snelgrove P. O., Ont. R. R. Station, Brampton, G. T. R., and C. P. R. 8-y-om

The Etrick Herd of Jerseys.

MESSRS. HUMPIDGE & LAIDLAW, PROPRIETORS, LONDON, ONT. Herd Comprises 35 head of High-class Stock. We are now offering several exceptionally fine young bulls, including grand bull calves and yearlings out of Prince Frank 33972; also a very fine two-year-old bull, and choice heifers. Nothing but choicest quality kept. Can supply show stock. Prices right. Write for particulars. 13-1-y-om

"Gem Holstein Herd."

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

ELLIS BROTHERS, BEDFORD PARK P. O., ONT. Shipping Station, Toronto. 7-y-om

HOLSTEINS!

WE now offer young stock that have won prizes, and calves from our show herd, from one month to one year old, whose dams have large records—any age or sex—FOR SALE, at very low prices to quick buyers. Also some Poland-China Pigs, 1 and 6 months old; same quality (the best).

A. & G. RICE, Brookbank Stock Farms, CURRIE'S CROSS INQ, Oxford Co., Ont. 18-y-om

MAPLE Holstein-Friesians. For rich breeding, production and uniformity of type, the Maple Hill Herd is not excelled by any in America. My cattle have won over \$1,000 in prizes in the last three years, and I never had as many crack show animals as at present. Many are closely related to Netherland Hengerveld, De Kol 2nd, and DeKol 2nd's Pauline, whose official butter records have never been equalled. Write or visit—

11-y-om G. W. CLEMONS, St. George, Ont.

HOLSTEIN-FRIESIANS FOR SALE.—A few good young Bulls and Heifers of choicest breeding, being from imp. Cows from the famous herd of B. B. Lord & Son, N. Y., or directly descended therefrom. Address

JNO. TREMAIN, 7-y-om Forest, Ont.

ADVERTISE IN THE ADVOCATE.

Annual Meeting American Oxford Down Breeders' Association.

The annual meeting of the American Oxford Down Record Association was held at the Neil House, Columbus, Ohio, Tuesday evening, January 12th. In the absence of President McKerron, John C. Williamson, Xenia, Ohio, president, the chair appointed H. N. Musser, of Ohio; E. O. Wood, of Michigan; and J. S. Campbell, of Pennsylvania, a committee to examine the treasurer's report, which showed a balance of \$399.91 on hand. Special prizes were paid to Oxford breeders in 1896 as follows: Maine—Charles W. Hilton, Anson, \$75. New Hampshire—J. L. Pendexter, Intervale, \$75. Massachusetts—Simpson Stock Farms, Saxonsville, \$55. New York—A. Bordwell, Fargo, \$55; Wm. Empie, Minaville, \$10. Ohio—Duvall & Taylor, Alliance, \$30; W. A. Shafer, Middletown, \$20; Rinear Bros., Brecksville, \$15; J. C. Williamson, Xenia, \$10. Kentucky—John H. Ayle, Glasgow, \$40. Indiana—S. H. Conger, Fair Rock, \$65; Wilson Bros., Mincie, \$10. Illinois—R. J. Stone, Stonington, \$75. Wisconsin—George McKerron, Sussex, \$75. South Dakota—Edmund Cook, Wilmot, \$75. Prince Edward Island—F. G. Boyer, Georgetown, \$15. Ontario—Smith Evans, Gourock, \$45; Peter Arkell, Tesswater, \$30. Manitoba—P. B. McLaughlin, Clearwater, \$40; Jas. Bray, Longburn, \$35. Total, \$880.

Motion was made to offer \$50 in cash prizes to Oxford Down sheep at each State and Provincial fair in the U. S. and Canada in 1897. Carried. Mr. Rinear, of Ohio, thought that where there was but one exhibitor for these special prizes only one prize should be paid. Motion to that effect was made and carried. Mr. Stone, of Illinois, called the attention of the Association to the fact that grade Oxfords were shipped to the Western ranges and sold as pure-bred rams, doing great injury to the breed, and a member who has acted as judge at a number of fairs in Ohio and Pennsylvania stated that he had seen prizes awarded to grade Oxfords that were shown as pure-bred sheep. In some cases these grades were very inferior stock, and did the Oxford breed great injury. The Secretary was instructed to warn dealers who have shipped grade pure-bred sheep, and to urge fair associations to require certificates of registry produced at time of exhibition.

Mr. Faber, of Ohio, thought all county fairs should enforce rules in regard to shearing same as the State fairs do. Mr. Herbert Wright, of Guelph, Ont., asked that special prizes be offered in 1897 to Oxfords from Nova Scotia and Prince Edward Island. But as the motion to offer prizes at State and Provincial fairs includes the fairs held at Charlottetown, P. E. I., and Halifax, N. S., no further action was needed.

Mr. J. H. Jull, of Mt. Vernon, Ontario, said that the special prizes offered by this Association had greatly increased the interest in Oxfords. The plan of giving small prizes to all sections of the country is much better than to give larger prizes to fewer sections. He advised dividing the prizes to Ontario between the Toronto Industrial, which is held in summer, and the Provincial Fair Stock Show, which is held in winter. He also advised printing volumes of the Record oftener. About two thousand pedigrees would make a nice book. Volume VI. contains over six thousand. The objection to reducing the size of the books is the increased cost. By saving in this direction more money can be offered in special prizes, which will be of greater benefit to the breed and to breeders. Mr. Jull urged breeders to keep a clear and distinct type. He said one large breeder urges the breeding of low-down and close-wooled sheep. That is all right, if not too low down, and the wool not so close and fine as to lose its weight of fleece.

Mr. Stone thought the secretary should be ordered to write to fair associations denouncing the rule to not color sheep. The English are allowed to oil and color, and of course the ones who buy from that country buy oil and color, and the American who breeds and fits his own sheep has no chance with the importer because he will be thrown out for coloring. The time has come when we must help America before we do England. We should have Oxford men to judge Oxfords at fairs. Prizes should be offered at fat stock shows to encourage breeders who have pluck enough to castrate some of their best ram lambs.

Mr. Wood, delegate representing the Genesee County (Michigan) Oxford Down Sheep Breeders' Association, presented the following list of names of applicants for membership: Hon. W. A. Atwood, ex-Senator, owner of the largest woolen mill in Michigan, and president Genesee Co. Savings Bank; Hon. D. D. Aitken, M. C. 6th Mich. Dist.; Hon. H. E. Spencer, ex-Senator; Hon. Ed. S. Lee, ex-Prov. Atty; Hon. R. I. Whaley, President Citizens' Commercial & Savings Bank; Dr. E. F. Miller; Hon. W. A. Patterson, ex-Mayor; W. F. Stewart, manufacturer; Alex. McFarlan, bank director. The application of these gentlemen was considered a very great compliment, as several of them were reported to have experimented with different breeds and decided in favor of the Oxford. All have established flocks, joined the Genesee County Oxford Down Sheep Breeders' Association, and they propose to make Michigan well known through the country as headquarters for the finest types of this breed. A meeting has been called for February 2nd, 1897, at 7 o'clock p. m., at the office of Dr. B. F. Miller, Flint, Mich., for the purpose of organizing a State Association of Oxford Down Breeders. Mr. Robert Jones, the large breeder and importer, Fort Steele, Wyoming, was also an applicant for membership, and was, on motion of Mr. Campbell, added to the list, which was accepted.

Letters from breeders in several States and Provinces were read, and confirmed the reports of members present that the increased demand for Oxfords is quite general and encouraging throughout the United States and Canada.

Motion was made by Mr. Campbell to increase the capital stock of the Association two thousand dollars (\$2,000). Carried. A communication was read from the Nashville (Tenn.) Chamber of Commerce, inviting this Association to hold its next annual convention there during the Tennessee Centennial Exhibition, opening May 1st, 1897, and continuing six months.

This letter brought out a lengthy discussion, and developed the fact that members from

FOR SALE

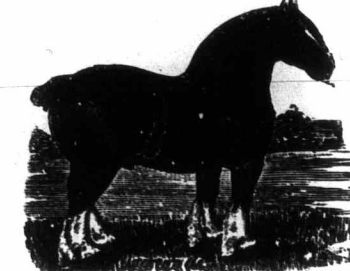
25 GLYDESDALE STALLIONS AND MARES 25



Nearly all prize-winners at Toronto, Montreal, Ottawa, and Chicago World's Fair. Most of our young stock are sired by the Columbian champion, PRINCE PATRICK, and GRANDEUR (sweepstakes four times at Toronto). Two of our fillies are daughters of Lillie Macgregor, the champion World's Fair mare. Also a number of HACKNEYS. Also AYRSHIRE BULL and HEIFER CALVES, and SHROPSHIRE SHEEP.

D. & O. SORBY, Guelph, 647-om Ontario.

Champion Hackney Royal Standard Stallion . . .



We have a number of first-class mares and fillies of this breed in foal to the above stallion. We also have for sale a number of other choice Clydesdale stallions, Standard-bred and Thoroughbreds.

GRAHAM BROS.,

Claremont, Ontario. 25 miles east of Toronto, on C. P. R. 4-tf-om

PRIZE-WINNING GLYDESDALE STALLIONS FOR SALE

AT BRANTFORD, ONTARIO.

WE HAVE just received an importation of pure-bred Clydesdale Stallions, which, from a point of breeding and individuality, are equal, if not superior, to any before brought into Canada. These stallions are all good colors, young, sound, and guaranteed to be breeders. Parties intending to purchase young stallions of this breed will find it to their interest to come and look this stock over.

"PRICES REASONABLE," "TERMS LIBERAL," "QUALITY ASSURED." FOR FURTHER PARTICULARS AND CATALOGUES, ADDRESS:

HUNT & GOLTER, Brantford, Ont.

SANDY BAY STOCK FARM

HACKNEYS and SHIRES.



WE have on hand a few first-class Hackneys for sale. Included in this number are the well-known stallions, Fireworks and Rousseau Performer, winners at Chicago and New York. Also first-class fillies of all ages, suitable for breeding purposes, both in Shires and Hackneys. We only ask reasonable prices for all our stock, and give you in every case a first-class article for your money. Write for particulars and terms to our winter address—

H. N. CROSSLEY, 91 Woodlawn Ave., TORONTO, ONTARIO. 2-d-om

ISALEIGH GRANGE STOCK FARM, DANVILLE, QUEBEC.

A CHOICE assortment of the following pure-bred stock always on hand: Ayrshire and Gurnsey Cattle of the choicest breeding and most fashionable type and color. High-class Improved Large Yorkshires of all ages, "Sanders Spencer stock." Shropshires of the finest quality. Our breeding stock has been selected, at great cost, from the choicest herds and flocks of both England and Canada, and have been very successful winners in all leading show rings. Young stock supplied, either individually or in car lots, at the lowest prices. Prompt attention given to all correspondence. 9-y-om

J. N. GREENSHIELDS, Proprietor. T. D. McCALLUM, Manager, Danville, Que.

Alex. Hume & Co., Importers and Breeders.

Special Offerings. Ayrshire bull calves. Some of them were prize-winners in every show-ring exhibited. Write soon and secure the best. Several two-year-old heifers in calf to bulls of choice breeding. A few Yorkshire sows of good quality, ready to breed. "All stock of the best quality." Extra value guaranteed for the money or no sale. Phone and Station—Hoard's, G.T.R., Burnbrae P.O., Ont. Inquiries are coming to hand almost every mail. Can fill an order for car of good to superior dairy cows at very low prices. 5-1-y-o

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

several States were anxious to secure the next annual meeting in 1896.

Moved, that the thanks of the Association be expressed through the Secretary to the Nashville Chamber of Commerce for the very cordial invitation; that headquarters for Oxford Down breeders be established, and breeders advised of the importance of a fine display of Oxfords at the Tennessee Centennial Exposition. Carried.

It was decided that the next annual meeting of the Association be held at Flint, Mich., the meeting to be held in the afternoon of the same day that the Michigan Association meets; the date to be arranged by the secretaries of the two associations. The secretary was instructed to correspond with members and arrange with them to prepare articles to be read at the next annual meeting.

The following officers were elected for the ensuing year: President, George McKerron, Sussex, Wis.; Vice-Presidents, one from each State and Province represented in the capital stock of the Association. Board of Directors: R. J. Stone, Stonington, Ill.; E. J. Thwing, Chardon, O.; J. C. Williamson, Xenia, Ohio; B. F. Miller, Flint, Mich.; Secretary and Treasurer, W. A. Shafer, Middletown, Ohio. Adjourned to meet at Flint, Mich., in 1898.

American Hackney Horse Society.

The annual meeting of the American Hackney Horse Society was held at the office of the Secretary-treasurer, Dr. W. Seward Webb, of New York, on January 14th; Mr. John B. Dasher in the chair.

It was decided to increase the Board of Directors from nine to twelve, with the provision that four of the number be replaced by four newly-elected directors each year.

The remaining old Board of Directors, with the exception of Mr. George Green, was re-elected as follows: Messrs. A. J. Cassatt, John B. Dutcher, Henry Fairfax, Prescott Lawrence, James Cochrane, Robert Cheney, and H. McK. Twombly. The additional directors elected were: Messrs. F. C. Stevens, E. W. Twaddell, F. J. Kimball, F. G. Bourne, and Frederic Bronson.

At a subsequent directors' meeting, Mr. A. J. Cassatt was re-elected president; Mr. F. J. Kimball, vice-president; Mr. Robert Cheney, second vice-president, and Dr. W. Seward Webb, secretary-treasurer. In future, it was further decided at the members' meeting, the officers and directors will change every year, with the exception of the secretary and treasurer.

The treasurer's report showed receipts for two new life memberships and ninety-three annual dues; the registration of forty-three stallions and sixty-seven mares, and the transfer of six stallions and forty-nine mares. The life members for 1896 numbered 124, of which 10 were new members and two were new members. Thirteen annual members resigned and three died, and one new member was elected, leaving seventy-seven annual members. The total of life and annual members is 198.

Live Stock Meetings First Week in February.

On Tuesday, the 2nd of February, the Ayrshire Breeders' Association annual meeting will be held at 11 a. m., at the Albion Hotel, Toronto. A directors' meeting of the Short-horn Breeders' Association will occur at 8 p. m. same day at same place.

On Wednesday, February 3rd, the Dominion Shorthorn Breeders' Association annual meeting will be held at 11 a. m., in Shaftesbury Hall, Queen St. E.

On Thursday, the 4th of February, at 11 a. m., at Albion Hotel, the Shire Horse Breeders' annual meeting will be held. At same place, at 2 p. m., Clydesdale Horse Breeders' meeting; and at 8 p. m., same place, Hackney Horse Society's meeting.

On Friday, at 2 p. m., the Canadian Horse Breeders' Association annual meeting will take place at the Albion Hotel.

On Tuesday, the 2nd of February, the fourteenth annual meeting of the Holstein-Friesian Association of Canada will be held at the Albion Hotel, at 2 p. m. The Executive Committee will meet at 1 p. m.

Many interesting and important subjects will be presented and discussed at the above meetings of cattle and horse breeders, together with election of officers and other business. Hon. Mr. Fisher, Dominion Minister of Agriculture, and Hon. John Dryden, are both invited to the annual meeting of the Shorthorn breeders.

Canadian Jersey Breeders' Annual Meeting.

The third annual meeting of the Dominion Jersey Cattle Breeders' Association was held in the Albion Hotel, Toronto, on December 24th. Mr. D. Duncan, of Don, presided. The following officers were elected for the ensuing year: President, B. H. Bull, Brampton; Vice-President, J. H. Smith, Highfield; Secretary-Treasurer, Edward Smith, Grimsby. Board of Management—B. H. Bull; J. H. Smith; D. Duncan; W. Ralph, of Markham; William H. Macarney, of Dunville; John O'Brien, of London; P. H. Freeman, of Markham; McLean Howard, of Toronto; and Ernest Duncan, of Don. D. Duncan and W. Ralph were appointed to represent the Association on the Industrial Board, and Messrs. W. T. Humpidge and J. O'Brien, of London, to the Western Fair, London.

Mr. Mortimer Levering, of Lafayette, Ind., was nominated judge for the Toronto Industrial, with Mr. Geo. W. Sisson, jr., Potsdam, N. Y., reserve. The question of holding a joint public sale was discussed, but the proposal was not approved.

W. G. Veale, Oxford Co., Ont., Can., writes:— "Enclosed find \$1 in payment of my subscription for the FARMER'S ADVOCATE for 1897. I am much pleased with the paper; it contains a fund of information on agricultural subjects, and should be in the hands of every farmer. The Christmas number is in itself a thing of beauty and a joy forever. The January numbers are an advance on former years, and I trust your efforts will be appreciated by the farming community."

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