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THE FARMER'S ADVOCATE

AND HOME MAGAZINE

PERSEVERE SUCCEED

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

Vol. XXXIV. LONDON, ONTARIO. FEBRUARY 1, 1899. WINNIPEG, MANITOBA. No. 471

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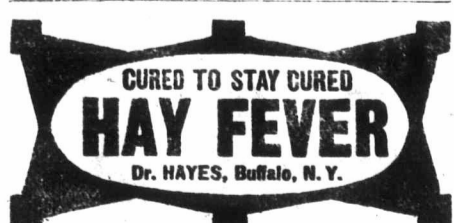
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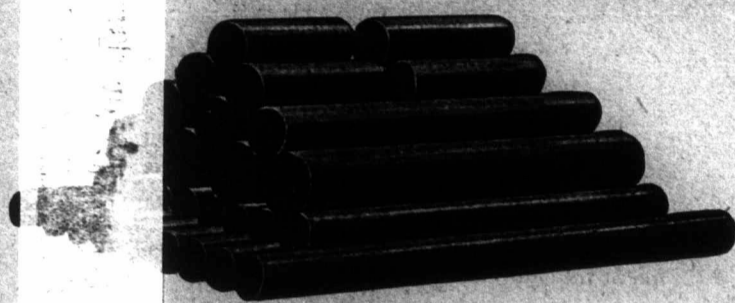
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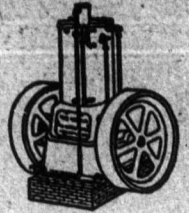


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FARMER'S ADVOCATE

AND HOME MAGAZINE

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

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LONDON, ONT., AND WINNIPEG, MAN., FEBRUARY 1, 1899.

No. 471

EDITORIAL.

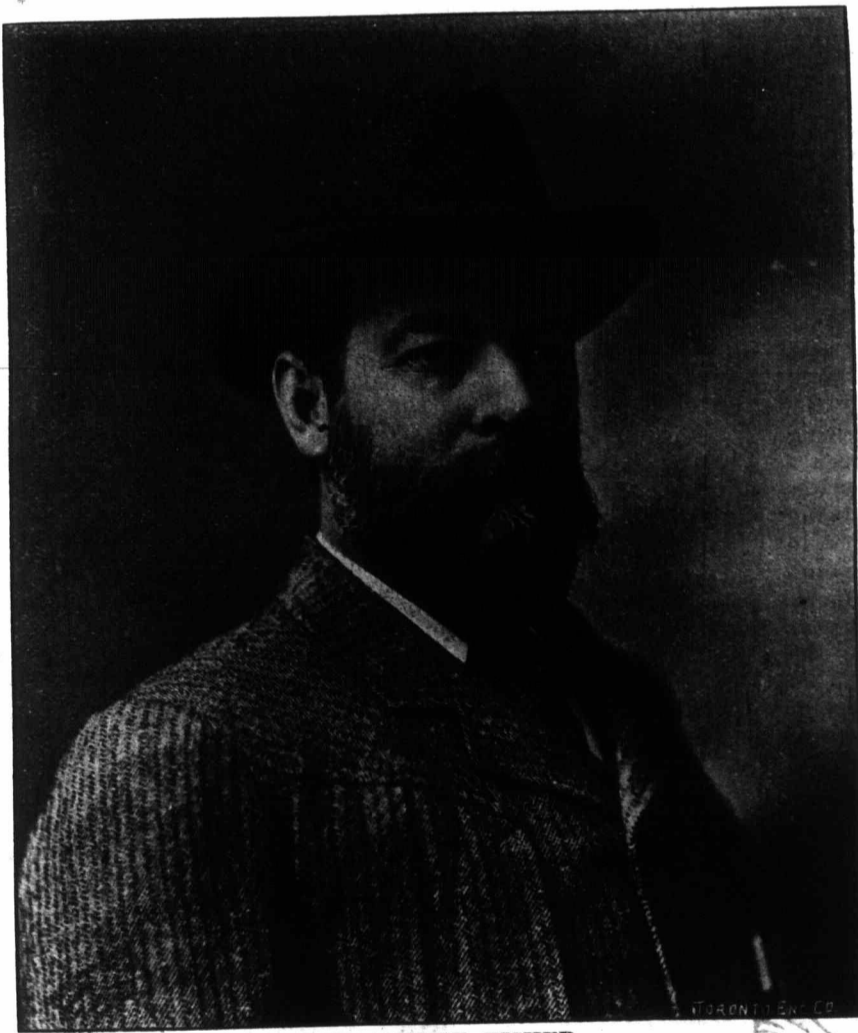
The Tuberculin Test in Great Britain.

"We are having," writes our regular staff correspondent in Scotland, "a big preliminary skirmish on the question of tuberculosis. Foreign and colonial authorities attach far greater importance to the tuberculin test than do breeders and cattle owners in this country. Everything possible is made of the cases in which the test has been proved a failure, and, unfortunately, we have no adequate records of the cases in which it has been applied. Our Government is greatly to blame for the condition in which matters at present stand. They will do nothing to check irresponsible testing of cattle, and no one really knows in a public market whether he may not be buying stock which is actually being sold because they have reacted. The first thing which the Government ought to do is to institute strict experiments to see whether the test is reliable. Blame can hardly be attached to farmers for declining to accept reports over which no one in this country has control as conclusive evidence of the reliability of the test, and it is only trifling with a difficult problem to postpone such a trial indefinitely. The collapse of the attempt to stamp out the disease compulsorily in Belgium and Massachusetts is well known, although much else is unknown, and it is not at all likely that any other county or state will adopt similar measures. What is wanted is a series of tests on the lines followed by Bang in Denmark, under strict Government control and supervision. By such means thoroughly reliable information could be obtained at first hand, and there would be no excuse for scouting what is advanced as a purely foreign importation. It is increasingly evident that something will require to be done, because the pressure from foreign customers will compel breeders to face the situation. On the other hand, no one can blame leading breeders who get such prices for their stock as were realized at the autumn sales, without giving any guarantee, if they prefer to remain as they are.

"Lectures on the subject of tuberculosis have been delivered at many places, and we had one in Glasgow from Mr. James Wilson, B. Sc., Fordyce, lecturer on agriculture in Aberdeen University, the author of the official report on the Castle Craig experiments. The lecture itself was a masterly production, its main point being that as tuberculosis is an infective disease, due to a germ, it can be eradicated. The basis of the lecturer's whole argument was, of course, the reliability of the tuberculin test; and the three stages in his treatment are: (1) Testing, (2) Isolation, (3) Disinfecting. The feature of the discussion which followed was the determination of the farmers present not to admit the theory of infectivity, their strong assertion of the belief that the disease is hereditary, and their absolute contempt for tuberculin. Unfortunately, most of those who spoke in this sense know nothing about tuberculin, and their action is notable as revealing an obscurantist disposition alien to the general reputation of their countrymen.

"Principal McCall, F. R. C. V. S., a singularly cautious and far-seeing member of the veterinary profession, made a notable contribution to the

discussion, asserting his belief in the infectious nature of the disease, and suggesting that any cases found in calves were quite as likely due to congenital as to hereditary causes. What puzzles me most of all in listening to the average Scottish farmer when he speaks on this subject, is his blindness to his own interest. If the disease be as he avers—hereditary—there is no possibility of his overcoming it, but if it be as the scientific world now declares—a contagious disease due to a germ—surely there is hope of its being controlled and its ravages reduced to a minimum. Public health officers are taking up the matter, and sooner or later a working plan of operations will be drafted. Meantime the situation is strained as between town and country, and may probably continue in that state for some time, unless the Board of Agriculture accelerate its movements and do its part in the business."



HON. SYDNEY FISHER.
THE DOMINION MINISTER OF AGRICULTURE.
(From his latest photo by Lancefield, Photographer, Ottawa.)

An Agriculturist Appointed.

The announcement comes from Ottawa that the position of Agriculturist and Live Stock Experimentator at the Dominion Central Experimental Farm has been filled by the appointment of Mr. J. H. Grisdale, of Russell County, Ontario. Mr. Grisdale secured an Associate diploma at the Ontario Agricultural College at Guelph, 1898, where he took a two-years course, and graduated last year at the Iowa Agricultural College, at Ames, Iowa, securing the degree of Bachelor of Agriculture. In the Inter-Agricultural College contest in judging cattle, sheep and swine at the Trans-Mississippi Exhibition at Omaha last summer, Mr. Grisdale won the first prize of \$125. There is a good field for experimental work in stock-feeding at Ottawa, and we wish Mr. Grisdale success in his work in his new position.

The Department of Agriculture and the Cheese Trade.

The announcement made by Prof. Robertson at the recent Ontario dairy conventions, that the Dominion Minister of Agriculture, Hon. Mr. Fisher, had authorized a number of experiments, or, rather, demonstrations, to show the advantages of proper curing-rooms for cheese, will commend itself; in fact, we are inclined to think the minister might go further. Last September we ventured the statement, on very good authority, "that of English and Scotch Cheddars and Cheshires, considerably more than the whole quantity of cheese exported from Canada, is sold at from 10 to 18 shillings, or practically from 2½ to 4 cents per pound higher than Canadian cheese!" No doubt the Old Country dairyman has some natural conditions in his favor, but there is little doubt that Canadian cheese are cured and carried to market at too high a temperature in summer to develop that cool, mild flavor and rich body that the consumer must have. A good many make as well as curing rooms are away behind the times, and some of them positively dilapidated in appearance, the result of carelessness or false ideas of economy. In the words of the politician, it is time for a change. The Dominion Department of Agriculture has been devoting itself with zeal to the improvement of the butter trade, even to the extent of a small bonus to encourage the equipment of creameries with cold storage compartments. A very few years ago the butter export business had dwindled to a deplorable state, but we are of opinion that whatever advantages accrue to the industry through the attention of the Government to cold storage and transportation should be shared by cheese as well as butter so far as is necessary, and no doubt, from the present move by the Minister of Agriculture, that is the intention.

A Correction.

We have received complaints, on behalf of the Co-operative Knitting Company carrying on business in Toronto, of the article in our last issue headed "Farmers' Wives and Daughters Duped"; that the article reflects unfairly upon them, and we have received a letter from the Knitting Company's solicitors in Toronto stating that "they have been at some pains to enquire into the business which has been carried on, and, so far as 'they' can see, the business is a legitimate one, and a very large number of persons are making an excellent livelihood by knitting for the Company with their machines." And further stating: "We have, however, to offer you facilities of having the business of our clients examined by an inspection of their methods, correspondence, and work, and we think that if you will accept this offer you will come to the conclusion that you have done them a great wrong."

We would regret very much being the means of injuring any bona fide concern, and we therefore desire that the Company shall have the full benefit of their denial, and as the ADVOCATE may have been misinformed, or not fully informed, of the Company's affairs, we desire to, and do hereby, retract the statements and imputations contained in the said article.

Some fifty young women are reported as students during 1898 at the Minnesota State School of Agriculture.

THE FARMER'S ADVOCATE AND HOME MAGAZINE.

THE LEADING AGRICULTURAL JOURNAL IN
THE DOMINION.

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

LONDON, ENGLAND, OFFICE:
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JOHN WELD, MANAGER.

1. THE FARMER'S ADVOCATE is published on the first and fifteenth of each month. It is impartial and independent of all cliques or parties, handsomely illustrated with original engravings, and furnishes the most profitable, practical, and reliable information for farmers, dairymen, gardeners, and stockmen, of any publication in Canada.
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Prosperous Live Stock Organizations.

It is gratifying to know that the various Canadian live stock associations for the carrying on of pure-bred records, and otherwise advancing the interests of improved farm animals, enjoyed during 1898 a very prosperous period. There has been a decided toning up in the demand and in the prices paid for nearly all classes of stock; this being particularly true in the call for breeding stock, in the production of which Canada enjoys a pre-eminent position. For example, the Dominion Short-horn Breeders' Association starts the present year with the handsome showing of over \$8,100 in the bank, and recorded during the past year 5,386 pedigrees, as against 4,128 in 1897, an increase of 1,258. There has also been a splendid increase in membership—the number having run up from 537 paid members in 1897 to 713 in 1898. A noteworthy event of the year was the union of the Canadian Ayrshire Association of Montreal and the Prince Edward Island Herd Book with the Dominion Ayrshire Association, the amalgamated organization being styled the Canadian Ayrshire Breeders' Association. This establishes uniformity and promotes solidity. During 1898 there were 1,150 pedigrees recorded, as against only 672 in 1897. The Ayrshire men are to be congratulated upon their success. The registrations in the Record of the Holstein-Friesian Association were one-third greater last year than in any previous year. In fact, all the associations show increases, and the high standard of our records is being maintained. The Dominion Cattle, Sheep and Swine Breeders' Associations have continued to do vigorous and effective work, particularly in relation to transportation and exhibition matters. The annual and other gatherings of the leading associations, as announced elsewhere, are to be held next week in the City of Toronto, and should be all largely attended by those who have the continued progress of these important interests at heart.

Notice: No More Wanted!

In our last issue we announced that we required a number of back issues of the FARMER'S ADVOCATE. Many more have responded than were required. We have, therefore, been obliged to return all received within the last few days.

Our Scottish Letter.

THE AGRICULTURAL SITUATION.

The new year has been entered on with a good deal of hopefulness, and judging by the rents which farmers are offering for vacant farms the future of agriculture in the home land is bright; the shadow of depression has been lifted, and the Scottish farmer signals "all's well." One hopes he may not be deceived, and that the stress of foreign competition may not compel those who have with so light a heart embarked on this enterprise to seek relief from the obligations which they have undertaken. Some of the shrewdest members of the agricultural community are of the opinion that farmers should not be allowed deductions from agreed-upon rents, and doubtless greater care would be taken in offering if landlords made it a rule to insist on contracts being honored to the letter. The land hunger amongst Scottish farmers is abnormal. They seem never to have enough, and the business of the community is not hindered by any determination on their part to depress land values. The Scottish farmer cherishes a singularly sanguine disposition. On the enthusiasm begotten of Mr. Leiter's operations he feasts for many days, but if he were less sanguine he would have less cause to plead for rent abatements in subsequent days. During the worst days of the depression some landlords consistently refused to allow their rent-rolls to come down. They held the land themselves, and some of them made good attempts at farming. As a rule, however, it cannot be said that the landlords made much by farming their own lands, and some who did so have at length been compelled to give in and throw their farms upon the market. Had some of those now acting in this way done so in 1879 and 1880, their exchequers would have been in a more flourishing condition to-day than they really are. In spite of excessive competition many farmers in this country are doing well—making money—and viewing the outlook very hopefully. There is plenty of room for improvement in the quality of Scottish farm produce of all kinds, and while that is so, it would be foolish to despair of the future of British farming.

During 1898, all branches of agriculture, except, perhaps, cheese dairying, were successful. Prices, except for wheat, during the first half of the year were worse than during 1897, but crops were heavy and probably farmers may have done as well in 1898 as in 1897. It is, however, too early in the season to form any absolute opinion on this point, because, strictly speaking, the farmer's year ought to close at June 30th, and not at December 31st. By the former date the crops of the preceding year have all been disposed of, and a general squaring-up may be indulged in. At the close of the calendar year the crop is not disposed of, and on a feeding farm stock has gone into winter quarters and sales have not in many cases been made. Anything like a square-up in such circumstances is impossible. I expect few men will show as good a balance sheet at 30th June, 1899, as they did at the same date in 1898. Many farmers in the vicinity of Glasgow have been doing well in recent years by growing timothy, for which there is a steady demand in the large centers of trade. To such, the resolution of the Glasgow corporation to abolish horse haulage on their entire system within two years, and to substitute the electric trolley system, is ominous. The corporation are extensive hay buyers, and at a fair price, and the absence of their competition bodes no good to the hay growers. Hitherto they have viewed with comparative equanimity the struggles of dairy farmers who fought a stubborn battle with unnumbered foreign foes, but now that the loss of their hay market is in sight they may have deeper sympathy with the unfortunate dairyman. In a splendid lecture on "Commercial Cattle Breeding and Feeding," delivered in Glasgow the other evening, Mr. Ferguson, Pictstonhill, advised farmers that the most profitable market for hay when it fell below 70 shillings per ton of 2240 lbs., was to feed it to good cattle, and the future of British agriculture must lie in providing the best quality of produce of every kind. What the public eat and drink is always wanted; how the public are to be transported from one place to another is a much less stable fact.

Horse breeding is being prosecuted with almost as much vigor as ever, and those engaged in the enterprise do not appear to be much moved by the resolution of the Glasgow corporation. The spring shows are looming in view, and it is evident from the prizes offered that every effort is being made to improve the equine stock of the country if shows will improve it. The Glasgow corporation own several thousands of horses, and the resolution come to by the town council the other day means that within three years' time the vast majority of these will be set free and their places taken by the inanimate electric system. Glasgow is to celebrate the opening of the twentieth century by a great exhibition in 1901, and the whole system of internal locomotion is to be transformed before that day dawns. This means something for Canada also, because a very large proportion of the tramway horses in this city come from the Dominion. They are good kinds of horses, but just light enough for heavy street traffic; that is a department which the home horse breeder has still largely to himself, but he does not make as much of it as he might. A large number of Clydesdale horses are under hire for 1899, between 40 and 50 having their circuits already fixed, and more than one-half of these are owned by Messrs. A. & W. Montgomery, Castle Douglas. These gentlemen are fairly masters of

this trade, and their splendid business habits and first-rate skill in selecting sires have placed them at the top of the tree. My next letter will be occupied with an account of the Scottish Stallion Show, which takes place on 2nd February. Till then, adieu.
"SCOTLAND YET."

STOCK.

Wiltshire Pig Feeding Experiments.

Experiments recently conducted in Wiltshire, Eng., under the auspices of a local committee formed for the purpose of ascertaining the best combinations of foods for pigs, have gone to show that the best results, so far as increase in weight was concerned, were obtained from a mixture of corn meal and separated milk, the cost of every 20 pounds of increase in weight obtained with this food being 4s. 2d., or exactly 2½d. per pound. The results obtained with other food combinations were as under—the figures in each case being the cost of every 20 pounds increase in weight: Corn meal and bran, 4s. 5½d.; corn meal alone, 4s. 6½d.; corn meal and pea meal, 4s. 7½d.; corn meal and bean meal, 4s. 11d.; barley meal and bran, 5s. 0½d.; barley meal alone, 5s. 1½d.; barley meal and separated milk, 5s. 3d. The prices at which the different ingredients in the food were reckoned were as follows: Barley meal, £5; corn meal, £4 10s.; bran, £4; pea meal, £7 15s. per ton; separated milk, 1d. per gallon.

But these results referred only to the actual increases in the weight of the animals; of the quality of the meat produced by the different foods no account was taken in the calculations above specified. Subsequently, however, the carcasses of the animals fed upon the different mixtures were examined by a number of experts, and their relative qualities were classified as follows—perfection being represented by 1,000: Barley meal and bran, 900; barley meal and separated milk, 988; barley meal alone, 974. Of the corn mixtures, corn and bran gave carcasses which were valued at 964; bean meal, 951; corn with separated milk, 939; with nothing else, 939; and with pea meal, 908. Commenting on the results obtained in respect to separated milk, the deductions which have been made are to the effect it is the most valuable of the additions made to either corn or barley; nothing has a greater effect on the weekly increase; there is less loss of weight in killing; and it improves the quality of the meat to a greater extent than does anything else but bran.

The highest average given in weight was made by the pigs fed on barley meal and separated milk, and next to this came the lot fed on corn meal and separated milk. Barley meal in every instance gave a greater increase than corn meal, either when used alone or in conjunction with other foods. The low value of the quality of the pigs fed on the corn meal and pea meal was due to the fact that a large number of the pigs so fed increased in weight very slowly, and consequently were sold as rather small pigs. The quality of those which did well during the fattening period was about equal to those fed on corn meal and bran. A great falling off in the case of all the pigs fed on corn was that they carry excessive fat. Taking the number in thousand as representing an ideal pig food, the various mixtures employed in these experiments rank as follows: Barley meal and separated milk, 903; corn meal and separated milk, 877; corn meal and bean meal, 590; barley meal alone, 519; corn meal and pea meal, 480; corn meal alone, 484; barley meal and bran, 449; and corn meal and bran, 404.

A Steer Feeding Test at Brandon.

In order to demonstrate the possibility of feeding steers at a profit on a wheat farm, even when a plentiful supply of hay cannot readily be obtained, by utilizing straw, with the addition of a small allowance of roots and a little extra grain ration, the following experiment was carried on at the Brandon Experimental Farm last winter: Eight three-year-old Shorthorn grade steers were purchased in December, 1897, at three cents per pound live weight, and sold again in April at four cents per pound. They were divided into two groups of four each as nearly alike as could be, tied up in comfortable stalls in a well-lighted stable, and given all they would eat, the rations being made up as follows:

LOT I.	Native marsh hay, cut.....	20 pounds.
	Swede turnips.....	30 "
	Barley chop.....	3 to 9 "
LOT II.	Mixed straw, cut.....	20 "
	Swede turnips.....	30 "
	Barley chop.....	5 to 11 "

Lot I. were fed three pounds of grain per day for the first four weeks, and Lot II. five pounds, thus compensating for the difference in fodder till the maximum in each case was reached.

LOT I.—Each steer consumed in 112 days:		
2,166 pounds of native hay at \$5.00 per ton.....	\$5 41	
44 bushels of turnips at 5c. per bushel.....	2 20	
622 pounds of barley (chop) at 4c. per lb.....	3 11	
LOT II.—Each steer consumed in 112 days:		
2,160 pounds of mixed straw, cut.....	\$10 72	
45 bushels of turnips at 5c. per bushel.....	2 25	
890 pounds of barley (chop) at 4c. per lb.....	4 30	

SUMMARY OF RESULTS.					\$6 55
	First cost of each steer.	Cost of feed per head.	Average price realized for each steer.	Profit per head.	Average daily gain per day.
Lot I., fed hay.....	\$31.10	\$10.72	\$54.38	\$ 7.54	1.9
Lot II., fed straw.....	35.62	6.55	53.08	10.91	1.4

The Shepherd's Care.

A sheep flock at this season in the hands of a shepherd who enjoys his charge, and has for them suitable shelter and provender, is a source of pleasure to every lover of animal life who comes in contact with it. The spacious yard comfortably littered with straw is the favored quarters when the sheep are given their choice, but in a climate like ours, a shelter is found congenial to their instincts and favorable to their well-doing. It is not well to accustom sheep to a warm house, even at nights, but their pen should be roomy and draft-proof, and have a wide door, open constantly, except in case of storms. The south side is best for the door, and it is the better protected by a porch, and should at least be six feet wide to avoid crowding of the sheep when passing in or out.

Sheep appear to better advantage and do better grouped according to strength and size. By having them thus divided, the older ewes, or young ones that need extra care, can receive a little special attention as they require it. It is often well to divide ewe lambs into even more than two lots—that is, if one has a pure-bred flock. Those desired to be fitted for the shows next autumn cannot be commenced too early in the good way. Their fore-tops (in the case of the short-wooled breeds) should be cropped early, and not more than lightly trimmed when their fleeces are removed in spring. The remaining lambs may well be divided into two flocks, according to size and strength, in order to be able to do better for those that need it and prevent them from unjust competition at the feed trough. Sheep or lambs that are being fattened for the mutton market need not necessarily have a large outdoor run, although fresh air and exercise will tend to increase the vigor and keep up the appetite. Sheep dipping has become so general that most flocks of any note were dipped in the fall before cold weather set in, and at this season are fairly free of vermin, but flocks not so treated should be examined, and if ticks are found the sheep should be gone over with dip in a watering can, pouring it along the back and down the sides, neck and breast, at intervals of about three inches, dividing the wool with the hands. Instead of dip, Parisian insect powder, or helobore, may be used if one cannot make their house comfortably warm, but if a mild time is chosen there is very little risk in pouring, and the dip helps the growth of the wool and the health of the sheep.

In feeding sheep, a careful man will not allow litter or chaff to fall into the fleece, which often occurs, especially in the neck wool. When pea straw is fed in the yard, the flock may be shut in the house while the straw is being distributed; or, when hay is given in the house, the sheep may be left outside during its distribution, if the racks are not arranged along the feed alley and close in front so as to prevent them getting their heads inside. It is worth considerable effort to have the sheep present a neat appearance.

The practice of going over the flock occasionally with the shears, removing the loose locks about the head, neck and breast, sides, back and hind quarters, is well worth the trouble in the improved appearance of the sheep it gives, and if a buyer happens to call it will add dollars to his appreciation of the flock. It amounts to the difference between being well and poorly dressed. To be a successful shepherd one must enjoy the association of his flock, when he will see all their needs and exert himself to provide them.

FARM.

Can Fertilizers be Profitably Used?

SIR,—In your issue of Jan. 2nd, Mr. J. L., of Grey Co., asks, Can commercial fertilizers be used with profit in growing crops in Ontario? For the information of the readers of your valuable paper I give you my experience in the use of concentrated manures. In the spring of 1897, as an experiment, I bought two tons of fertilizer, paying \$30 per ton for it, delivered at my depot. I had a 22-acre field which I wished to seed down, and as I had cropped it for three years previous without any manure, I considered it in very poor condition to seed. On about eighteen acres of this field I sowed by hand 200 pounds of the fertilizer to the acre, leaving three strips of land in different parts of the field without any fertilizer, so that I could form an opinion as to the result of the experiment. One half of the field was sown to barley and the other half to oats. The result surprised me, the fertilized portions of the field taking the lead early in the season, and at harvest time a very marked difference was apparent in favor of the fertilizer. And that was not all. Early in October the clover was about a foot high on the parts fertilized, while on the portion that received no manure the young clover was in a very weak condition and not more than two or three inches high. A friend of mine, who visited me in the fall of 1897, when I took him over my farm declared I had missed seeding three pieces in the field, and it could be seen about 30 rods away, so great was the difference. To follow the experiment further, during 1898 I cut one of the heaviest crops of hay I ever harvested on the eighteen acres that was fertilized, while the four acres receiving no dressing was hardly a half crop. I also experimented on corn the same season, with remarkable results, and am convinced that 200 pounds of fertilizer can be used to the acre with profit in the growing of crops in Ontario
Huron Co., Ont. JOHN JOYNT.

Maritime Notes.

The Farmer's Bank.—So far this winter must have been hard upon the weather profits. It has certainly given them plenty of chance to exercise their peculiar knowledge. We have had cold weather and warm, snow and rain all mixed up together, with several very heavy winds to make a greater variety. The new year came in cold, with heavy wind and snow, blocking up the roads, but a mild, wet spell following took most of it off again. Then came freezing weather again, with some very cold days, but not enough snow for sledding until the 15th, when we had about three inches. It has been fine weather for working in the woods, and unless logs are to be cut most of the chopping is done, and if the hauling only continues the teams will be kept busy for a time getting the wood home.

The manure pile is said to be the farmer's bank, and as in all other banking institutions, no more can be drawn out than is put in. As a badly managed bank is an unsafe place in which to make deposits, so also is a carelessly managed manure pile a bad place to collect that which is to furnish the fertility for next season's crops. Farmers, as a rule, are careful to save money when they get it. Why, then, are most of them so careless in properly saving that which is to produce their money or money's worth for them? It is very easy to collect the manure from the stables, but it is not so easy to preserve it so that all the elements of fertility which it contains may reach the land without loss. The principle loss is due to the waste of the liquid manure, due to the lack of sufficient absorbent material with which to retain it. Except when large quantities of grain are grown, straw for bedding is scarce and can be but sparingly used, and as a general thing no attempt is made to provide other material. Yet it can be done by a little forethought. Black muck, broken up sods or earth, leaves or sawdust, are all good and some one of them can always be got. The manure from the horse stables makes an excellent absorbent and is itself benefited by being so used. A double benefit is obtained by the use of these absorbents, as not only do they help to retain the original fertility of the manure, but they add to it that which they themselves contain. Great loss is also occasioned by the heating of the manure and by its careless exposure to the weather. These are best overcome by applying the manure to the land as it is made. When this can not be done and the manure has to be collected at the barn, a covered yard or shed is the best place in which to keep it, but if plenty of the litter has been used it can be well saved in the open yard. In this last case the mistake generally made is in spreading the manure out in too thin a pile, thereby exposing a large surface to the weather and rendering it more subject to leaching. It should be kept up in a good square pile, and if plaster is used in the stables or frequently sprinkled on the pile it can be kept without loss.

Poultry Improvement.—As a lover of poultry, I am very much interested in the Dominion Government's scheme of giving instruction in poultry fattening, mention of which I have several times seen. I believe there is a large undeveloped trade in eggs and poultry awaiting us, but until the general impression among farmers that poultry don't pay is dissipated and they are taught better methods of management, we will be unable to take advantage of it. I have proved to my own satisfaction that poultry does pay well, even in our own small local market, but I am also well aware that they would pay much better if I only had more skill in fattening them. Even the very best fowls to be found in our markets could be greatly improved. Fattening is easy when you know how to do it, but it is both hard and expensive when you do not. As ordinarily fed they soon seem to lose their appetite, and lose rather than gain in flesh—at least, that has been my experience. If it is through lack of knowledge on my part, I am anxious to receive instruction. From what I can learn by reading it seems to me that the cramming system of fattening is both the quickest and cheapest, but it would require a larger outlay for machinery than the ordinary farmer would feel justified in making.
Antigonish Co., N. S. AGRICOLA.

Scalding Pigs.

To the Editor FARMER'S ADVOCATE:
SIR,—I see in your last paper a man wants to know how hot water should be to scald pigs. Well, if he would get a thermometer he would soon find out, as most thermometers are marked scalding at 150. Now, we have scalded lots of pigs, and we find that 145 will take the hair off young pigs six or eight months old, while an old sow or coarse pig will stand more—160 or so; but if the water was up to 185 or 195, I don't think there would be much of the skin on by the time the hair was off. The wooden box, with sheet-iron bottom, is the finest thing out for scalding pigs in.
Wellington Co., Ont. JOHN R. DILLON.
[NOTE.—We have found it a good rule to use five to six pails of boiling water to one pail of cold water, according to the age of the pigs to be dressed.—ED. F. A.]

Agriculture in New Brunswick.

To the great mass of our Ontario people the Maritime Provinces are unknown territory. They appreciate the fact that they are units in our great Confederation and revenue producers for our treasury. Further than this their interest begins to weaken. After a few weeks' touring of the Province, your correspondent has become convinced from the common tokens of things so generally evident that her agricultural possibilities are not so limited as we have supposed.

While it would be incorrect to say that Ontario farmers are not further advanced in many lines than their brethren by the sea, we must remember that conditions of soil, climate, and trade relations differ so widely that comparisons must be very carefully drawn. The N. B. farmer, because he has not been dependent entirely upon his farm, has not been compelled of necessity to develop its resources. In our Province farmers are farmers. Down here, in addition, many of them have been and some still are lumbermen and fishermen. So long as the great forests and the fisheries yielded large and quick returns for labor employed, the rural population was safe financially. The forests are rapidly disappearing, the fisheries are becoming increasingly less profitable. Something must be done if the present population is to be retained. As a last resource, strange as it may sound, the farmers are turning to their long-neglected homesteads. Down along the Bay of Fundy coast there are to be found what are held to be the largest hay-growing marshes on this continent. All told, they total up over seventy-five thousand acres. The yield of hay varies from two to three and a half tons per acre. I saw one tract of the great Tantramare Marsh, from which hay had been cut continuously for one hundred and twenty-five years, which this year yielded at the rate of two tons. So long as there was an open market across the line for this hay, at prices netting the farmer seven or eight dollars per ton, there was large profit in handling it. A few days ago the writer saw a quantity of this hay sold for \$5.25 per ton, pressed and delivered on cars. At this figure it can easily be seen that there is but a small margin left after expenses are paid. The "hay farmers" are now looking for the proper live-stock medium through which they may be able to market their immense hay crops at a profit. While a few of them are into dairying in a small way, the majority are going in for beef production. Having been accustomed to the easily-obtained returns from their hay business, they seem to think there is too much labor involved in dairy farming. Taking the Province as a whole, a steady advance has been made in the cheese business. From a production of 63 tons in 1891, the amount has steadily increased, until last year saw the respectable output of 825 tons.

Concerning the beef production before referred to, those in the business in several sections are sadly handicapped by being unable to obtain steers of a beef type. Unlike Ontario, this Province at large supports but one type of animal, which, as might be expected, is not especially well suited to bring success in either the beef or dairy business. It is a fact that the leading butchers of St. John and Halifax are still compelled to send to Ontario for their high-class beef. It is to be feared that our feeders are soon to lose the greater part of this trade, for N. B. farmers are bringing in pure-bred sires of beef strains, which must in the near future result in a great improvement along this line. Since coming down to this Province I have had a good many enquiries as to the number of good young Durham bulls to be had in Ontario. Here is a chance for some of our breeders to work up a good trade.

So far as sheep husbandry is concerned, apparently it is sadly neglected. For several days we drove across country without seeing a solitary sheep. In working over the south-eastern part of the Province we have seen a few very small flocks of inferior quality and nondescript breeding. They were simply sheep, and poor ones at that. In certain sections swine breeding is well advanced. There are several breeders who have worked up more than a local reputation. Among the farmers in general Berkshires and their crosses seem most in favor. Nothing has been done in producing the hog of the day—the bacon pig. So much is this the case that a firm of bacon-curers in St. John are unable to get sufficient numbers of the kind of hog their business demands, hence they are compelled to pay freight on carloads from our Province. No export trade has yet been worked up in pork products. Farmers in many cases market their hogs at eighteen to twenty months, in most cases giving them to the local trader "on account."

Just now a strong movement is on foot among St. John capitalists for the erection of a packing house in that city. So soon as this is an accomplished fact a great impetus will be given to the hog-raising industry in this Province. Lacking this, much improvement cannot be expected for some time to come.
J. J. FERGUSON.
Moncton, N. B., Jan. 24, '90.

ED. BROWN, Boissevain, Man.:—"I would not be without your paper for twice its cost." Dec. 20, '98.

C. D. STEWART, Marquette:—"I must express my admiration for your Christmas number."

DAIRY.

Cheese and Butter Association of Western Ontario.

The 32nd annual convention of the above Association was held in Guelph on January 17th, 18th and 19th. While the Royal City is not the center of a dairy district, there were at each of the sessions a good attendance of those who, by their earnest attention and expressions of satisfaction, indicated their appreciation of the addresses delivered. One of the chief reasons for bringing the convention to Guelph was to afford the cheese and butter makers an opportunity of seeing the Dairy School in operation, which they did, at the invitation of the Hon. Minister of Agriculture and the President of the College, on the forenoon of the closing day of the meeting. It is hoped that what they saw will not only stimulate them to do better work in their respective factories, but will also impress on many of them the importance of taking a course at the School at their first opportunity.

The Dairy School is being well patronized—having some eighty-odd students in attendance, most of whom are taking the full three-months course in cheesemaking, buttermaking, milk testing and separating. There are included in the class several ladies, some of whom are taking the full course, while others are confining their attention to the home dairy department under the conduct of Miss Laura Rose. During our visit the entire equipment was in operation by the students, under the supervision of the several instructors. Milk received from the neighboring district, which is a beef-raising one, is almost all from turnip-fed cows, which necessitates the pasteurizing of the cream after it comes from the separators. This is done in a centrifugal pasteurizer, which heats it up to about 160°. The heated cream then passes over a cooler which quickly lowers the temperature before it enters the ripening vat. While every department of the School afforded interest, this pasteurizing process demanded the special attention of the visitors.

Directors' Report.—The report of the Board of Directors of the Association made reference to the necessity of reducing the number of factory instructors from three to two, for lack of funds, and of employing an instructor for summer creameries in Western Ontario instead of having one creamery instructor for the whole of the Province. It was decided to increase the cheese factory fees to \$15.00 for three visits of one day's duration each, instead of \$10.00 for four visits of one day's duration each; and to pay the instructors such fees, together with a small salary to cover the whole of their time and travelling expenses. While it was felt that more instruction is needed in both creameries and cheese factories, in order to keep the standard of our butter and cheese to a high pitch, the directors feel that the money of the Association should only be expended to assist those who are willing to help themselves.

Instructors' Report.—Mr. T. B. Millar, in his report, urged the directors to make the divisions smaller and employ more instructors. He made regular visits to 33 factories and had to refuse a number of applications. He tested 3,032 samples of milk with the lactometer, and 595 samples with the Babcock milk-tester. The milk tested from 1.6 to 6 per cent. fat. Eight patrons were prosecuted for tampering with milk sent to factories. Five had added water and the others taken cream. While he found a few dirty factories, there has been a decided improvement in this respect during the last three years. The temperature of curing rooms varied from 60 to 88. The system of returning whey in the milk cans is still common, but more attention is being paid to the whey tanks. Gassy curds were attributed in some sections to Alsike clover pasture. Silos are increasing and resulting in better milk and more of it.

Mr. James Morrison reported that thirty-eight factories return whey in the milk cans, but the tanks are better looked after. The underground ones, however, are usually in a filthy condition. Many factories have been fixed up during the past year, and a number have put in buttermaking plants. Too many factories have poor floors and bad drainage, with the result that wash water lies under the buildings, causing bad smells in hot weather. More sanitary inspection was recommended. Many using ice in the curing-rooms allowed the temperature to get too high before putting it in. Some makers were found using too much starter in the milk to make first-class cheese. Others were careless in other ways. Patrons too often send unstrained milk to the factories. All such milk should be returned. Five factories paid for milk on the basis of the fat test. Some good advice to patrons and makers was given in connection with this report.

The report of James Struthers, instructor of summer creameries for Western Ontario, showed that while many of the creameries visited were in good condition, and doing good work, a number of them were in great disorder. Occasionally buttermakers were found running their churns too fast, or were making other mistakes. These men were put on the right track as far as possible. At all the creameries, except two, the drains were fairly good. Four of the creameries were provided with excellent cold storages, built on the Government plan, registering at the time of Mr. Struthers' visit, 35 degrees. Four creameries disposed of buttermilk to farmers, and two fed it on the premises. One of these had upwards of 100 hogs—too near the creamery for the good of the odor in the building.

Instructions were given to change their location. Some makers were found using too much salt in the butter, and some were not working it in uniformly. The instructor, in such cases, gave an object lesson in salting one or two lots.

Preservation of Manure.—Prof. Frank T. Shutt, chemist at the Central Experimental Farm, gave an extended talk on the results of some recent experiments in the preservation of manure. Eight thousand pounds of fresh manure at the end of three months weighed 2,980 pounds when protected, and 3,903 pounds when exposed in an open yard. The extra weight came from the accumulation of rain. Of organic matter, however, there was a balance of 109 pounds in favor of the protected manure. Of this, there were six pounds more nitrogen, seven of phosphoric acid and 17 of potash. When the manure was fresh it contained 25 pounds of phosphoric acid, and at the end of 12 months the protected lost one pound and the exposed four pounds. The chief loss was in potash. There was no fermentation without a loss in organic matter, with some loss of nitrogen. While there is much loss from protected manure heaps in this way, it is vastly less than when the pile is subjected to leaching and washing as well as fermentation. It was estimated that about one-half the plant-food in the manure on many Canadian farms is lost through exposure.

Address by President Mills.—The Principal of the Agricultural College referred to the College having its hand on all the dairy schools of the Province. He expressed his anxiety to assist the dairy industry by giving the patrons and makers more light, that our product may hold its own in competition with that of other countries. The British consumer is getting more cheese to choose from than ever before, which makes him more fastidious. The President desires to see every maker take a course in one or other of the dairy schools where first-class free instruction is offered. The owners of factories should employ only good men as makers, pay them a fair wage, and hold them up to the mark. The reputation of our goods demands it. He advised makers not to work according to the pay they receive, but do their best, no matter what the pay may be, then they will be more likely to rise. Dr. Mills strongly favored industrial education, that boys and girls may be taught to do things, instead of their education confining them to simply knowing about things.

The Status and Work of Experimental Stations.—Prof. W. H. Jordan, Director of the New York Agricultural Experiment Station at Geneva, referred to the history of U. S. Agricultural Experiment Stations, which had its foundation laid in 1882. These stations are getting at the working of things by rigid scientific investigation, which is enabling students to deal with fundamentals leading up to a thorough understanding. The function of these stations is not to make business men, but rather to furnish business men with facts with which to conduct their business. By the aid of science farmers have been taught to gather nitrogen from the air into the soil for their crops by the growing of clover. It has also taught that much economy of food can be effected in the use of the balanced ration. It has also taught that a cow does not require to consume fat in order to produce fat in her milk. Reference was made to a cow having been fed for 90 days on practically fat-free food. In this time she consumed only seven pounds of fat and gave 70 pounds of butter, while her body fat also increased. It was remarked that much good work is being done, but also much poor work. Too many technical, elaborate bulletins have been issued, but now these are being boiled down and edited into popular form before being sent out. The Professor showed that scientific education enables a man to control his business. Man does not exist because of the farm, but the farm because of the man. Men need not be slaves to their farms, if they will only acquire a knowledge of the fundamental principles of agriculture. The need of the technical training of girls was also dwelt upon, taking the ground that education should touch the home life as well as the farm life and business life.

Address by C. C. James.—The Deputy Minister of Agriculture for Ontario, in order to make clear the value of dairying to a county, pointed out that the County of Oxford exported within a year over \$1,000,000 worth of dairy produce, while Wellington sent out only \$158,000 worth. At the same time Oxford shipped within \$150,000 worth of as much beef as did Wellington. In the course of Prof. James' address it was shown that by proper tillage and growing the right sort of crops farmers can practically control the weather influences. The average summer drought has no effect on a wisely-conducted farm.

Hon. Sydney Fisher, in a pointed address, referred to finding out in England that Scottish cheddars are taking the market away from us by reason of their increasing excellence. He cautioned dairymen to be very particular to improve the quality of all cheese exported. The curing-rooms must be improved in order to prevent cheese from becoming heated. He dwelt upon the opportunity we have to expand our butter and bacon trade in much the same sort of an address as he gave at the Eastern Dairy Association meeting, which is reported in this issue.

Observations in Creamery Work.—Prof. G. L. McKay, of Iowa Agricultural College, a former Canadian cheesemaker, deplored the fact that American buttermakers have to compete with oleo, and other imitation products which are difficult to detect from dairy butter. He made a strong plea for better qualified men to take charge of large

creameries, and assured his hearers that skill will command corresponding remuneration. Prof. McKay drew attention to the fact that Kansas creamery owners are sending out expert feeders to visit the patrons, instructing them how to produce more milk at a greater profit. In this connection, it was pointed out that an account was kept at the Iowa Experiment Station with each cow of the herd, and it was found that some produced butter at a food cost of four cents per pound, while others consumed 14 cents' worth of feed for each pound of butter given. Some cows gave a profit of \$54 per annum, while others returned a profit of \$2.50 during the same period.

Bacterial Infection of Cheese.—Dr. Connell, of Queen's University, gave the same paper as at the Eastern convention, a report of which appears elsewhere in this issue. Following Dr. Connell, Mr. F. C. Harrison, Bacteriologist of the O. A. College, by the use of lantern slides showed sections of various species of germs which are known to produce certain ill effects in cheese. To get rid of these, it was pointed out that cleanliness in the stables, factories, etc., must be effected. Foul air is laden with foul bacteria, and bad water is a fruitful source of contaminating influences. Reference was made to certain cheesemakers having had trouble in getting milk to coagulate properly with the usual amount of rennet. An investigation of the trouble brought out the fact that the water of a well had become contaminated, and to purify it fresh lime was put into it. This rendered the water alkaline in action, which had the same effect on the vats, pails, etc., washed with it. Mr. Harrison recommended the use of charcoal instead of lime in such wells. During the discussion which followed, it was advised that persons who are not sure of the condition of their water supply should send a sample to one or other of the experimental farms for analysis. This is done free.

Curing Rooms.—Prof. H. H. Dean described the sub-earth duct, which is referred to in the report of the Eastern dairy convention, and also by the use of charts showed the advantage of curing cheese at a temperature between 60 and 65 degrees together with about 82° of moisture. Not only will the best flavors be secured, but there will be a minimum of loss by shrinkage. He described and advocated the use of the dry and wet bulb thermometers in order to determine the degree of humidity.

Ice in the Curing Room.—Mr. A. T. Bell, of Tavistock, described his ice box, which is three feet square and six feet high. It stands in the center of the curing-room, and has a galvanized-iron bottom and outlet for the melted ice. Resting on the galvanized bottom is a scantling rack upon which the ice rests when used in hot weather. This should be filled before the room becomes heated, when its value will be much increased. Mr. Bell has noticed a difference of 20 degrees between the temperature near the floor in front of the ice box and near the ceiling. Mr. Bell considers the ice-cooling system quite satisfactory in a well-insulated curing-room. In a large room two boxes would give better satisfaction than one.

The Present Status of Feeding Valuations and Standards.—Prof. W. H. Jordan gave a valuable and exhaustive paper upon the above subject, which we regret we cannot give the space due its importance. The question of what food is, how it does its work, and what is the relation of food to product? is the task given the scientist to solve by the intelligent dairyman and stockman. Agricultural chemists are constantly and persistently interrogated regarding two lines of inquiry, which may be typified by two questions: 1st, What is the relative value of corn meal and cotton-seed meal; and 2nd, What is the best ration for milk production? Prof. Jordan asserted that the majority of agricultural chemists are agreed that to neither of these questions can a direct, unqualified answer be given. While the relative values of various fertilizers, the contents of which are definitely known, can be fairly arrived at, it is not the same with food products. Simply because existing conditions render it impossible. The dry matter of cattle foods is made up of ash, protein, carbohydrates and fats, and we base the value of a food upon the content of the last three named ingredients. We cannot buy and feed any one of the compounds separately and learn its value, so that all have to be secured and fed in conjunction, so that exact values of either cannot be arrived at; and not only that, but different foods have varying physiological values. True, the heat- or energy-producing values of the different compounds in food can be arrived at with almost definite accuracy, but food has other functions besides the production of heat. Building of the body has to be done, but the relative values of these compounds for constructive purposes are not yet definitely known, nor can they be, since the varying digestive apparatus of animals have an important influence. The advice Prof. Jordan gave to feeders was to base their judgment of the value of digestible stuffs primarily upon the proportion of digestible dry matter which they contain. It must be remembered, however, that comparisons of this kind can be instituted only between feeding stuffs of the same class. The relative values of oil meal and corn meal cannot be ascertained in this way, neither can those of timothy hay and corn meal. Neither can the carbohydrates of timothy hay and corn meal be given an equal value, since the former demands extra energy from the animal in masticating and digesting it. It has been calculated that the chewing of a pound of hay exhausts 76 calories or units of heat, while a pound of oats during mastication exhausts 21 calories, and a pound of

corn 64 calories. So it will be readily seen that to put a definite valuation upon food products is quite impossible. Dr. Zuntz was quoted as making the statement that "The nutrients which are assimilated from coarse fodders yield the organism about 20 per cent. less available energy than the same amount assimilated from grain."

For the purpose of comparison on the basis of digestibility, Prof. Jordan divided feeding stuffs into five classes, comparing each among themselves: First, the coarse fodders from true grasses; second, hay from the legumes; third, the cereal grains and some of their by-products; fourth, peas, beans, middlings, gluten feeds, etc.; and fifth, gluten meals and oil meals.

The following table shows the digestible material in 100 lbs. of various feeding stuffs, as calculated from average composition and digestibility.

	Percentage of dry Matter Digestible.	Pounds dry Matter in 100 Lbs. Fodder.	Pounds Digestible dry Matter in 100 Lbs. of Feeding Stuff.
CLASS 1—Fodders from true Grasses.			
Corn, Flint.....	68	60	40.8
Corn, Dent.....	64	60	38.4
Corn Stover.....	57	60	34.2
Hungarian Grass.....	65	87.5	49.9
Oat Straw.....	50	90	45
Orchard Grass Hay.....	57	87.5	49.9
Red-top Hay.....	60	87.5	52.5
Timothy in bloom.....	61	87.5	53.4
CLASS 2—Dried Legumes.			
Alfalfa.....	59	87.5	51.6
Clover, Alsike.....	58	87.5	50.8
Clover, Crimson.....	58	87.5	50.8
Clover, Red.....	58	87.5	50.8
Clover, White.....	58	87.5	50.8
CLASS 3—Cereal Grains.			
Barley.....	86	89	76.5
Corn Meal.....	88	85	74.8
Oats.....	70	89	62.3
Rye Meal.....	87	88	76.5
CLASS 4—Nitrogenous Grains, 16-30% protein.			
Brewers' Grains.....	62	92	57
Gluten Feed.....	86	92	79.1
Malt Sprouts.....	67	90	60.3
Wheat Bran.....	62	88	54.5
Wheat Middlings.....	75	88	66
Pea Meal.....	87	90	78.3
CLASS 5—Nitrogenous Feeds, 30 per cent. to 45 per cent. protein.			
Gluten Meal.....	90	92	82.8
Linseed Meal, O. P.....	79	91	71.9
Linseed Meal, N. P.....	80	90	72
Cotton-seed Meal.....	74	92	68

After dealing with the findings of a number of careful scientific investigators, and from these drawing valuable deductions, it was advised to keep the standard rations in mind as the best-known rule for feeding and then work as near to it as commercial conditions will permit. In conclusion, Prof. Jordan claimed that the advance of sound knowledge among people has been retarded by reason of the unwarranted deductions of the uninformed.

Buttermaking.—Mr. Archibald Smith, Beachville, read a valuable paper covering the whole field of high-class buttermaking on the creamery plan. To summarize briefly, he pointed out that pure, good raw material from healthy cows getting good food was necessary, and cleanliness must characterize every branch of the work from the milking of the cow to the shipping of the butter. The cows should not get musty fodder or any food that will impart a flavor that the market objects to. Milk or cream for buttermaking should not become frozen or bitter flavor will result. A well-equipped creamery plant is essential, and the maker in charge should be well informed theoretically as well as practically. He should be able to readily detect imperfections in butter and understand how to cure them. Unfit milk should be refused. Use a tempering vat in heating the milk before separation, allowing the heating time enough to affect the fat globules, which are slower to respond. This will increase the capacity of the separator and cause more complete skimming. Test skim milk to determine excellence of work. Be careful to maintain an even speed of the separator. After washing the bowl, etc., everything the milk has touched should be steamed well.

In ripening cream, a good starter is almost indispensable. Buttermilk is not as good as skim milk diluted to twice its bulk with water and heated to 180 degrees. To this add starter from the former day, to be used the day following. Pasteurizing cream was not recommended except to get rid of bad flavors. Cream ripened soon after separating with a good quality of starter can be easily controlled in flavor and acid. Cool the cream quickly after ripening and stir well during this process. Churn separated cream at 50 to 54 degrees, and other cream at a higher temperature. Wash the butter once in weak brine at the same temperature as the butter. Salt to suit the market— $\frac{1}{2}$ to $\frac{3}{4}$ oz. for the pound for the British market and $\frac{1}{4}$ to 1 oz. for the Canadian trade. Pack the butter firmly. Mr. Smith advised patrons of gathered-cream creameries to use hand separators. They can then take better care of the cream and can use the skim milk to better advantage.

Pasteurization and Use of Pure Cultures.—By the aid of lantern slides Mr. F. C. Harrison presented the advantages of pasteurizing cream and ripening it by the use of pure cultures in order to arrive at constant and definite results in the butter produced. The Danish and French dairymen supply England with a large proportion of their best butter, and it is by the use of these controlling influences that they are able to maintain their high

position. The Danes are wise in watching the British market and in holding the supply only equal to the demand, so that no opportunity will be given their butter to become stale. Regarding the different species of bacteria, it was pointed out that some produce flavor and others keeping quality, and various other decided effects. Some of the characteristic sorts were shown by the use of the lantern. By pasteurizing milk 94 per cent. of the germs present are destroyed, and when a pure culture of the right sort is added to this cream it gives the buttermaker control of the ripening. Mr. Harrison advocated the use of pure culture in creamery work, and stated that various species will be prepared in the College laboratory.

Butter Flavors and Starters.—Prof. G. L. McKay, of Iowa, in dealing with this subject, stated from experimental knowledge that fermentation has more effect on flavor of butter than has feed. Pasteurizing does not rid cream of putrifying bacteria as readily as food flavors, as the latter are volatile. Pure acid bacteria are not as plentiful, especially about the stable, as decomposing sorts; therefore, milking should be done in a clean, well-ventilated stable or outdoors. When a starter of the right sort is given control it furnishes what is wanted. Ninety-five per cent. of the germs in good cheese are acid germs, and in good butter from 90 to 92 per cent. The temperature of ripening cream is not as important as the ferment it contains. Thin cream will ripen faster than that which is quite rich, for the reason that it is the milk rather than the cream upon which the ferment works. Prof. McKay prefers 25 to 30 per cent. cream for winter buttermaking. He advised the use of the alkaline test, so that the acidity of the cream may be known and controlled.

The Farmer of the Future.—Dr. W. M. Beardshear, President of the Ohio State College of Agriculture, delivered an inspiring and eloquent address upon the coming agriculturist, whose success he claimed would depend more upon the work of his head than his hands. The time is coming when the young farmer will have to face the same degree of preparation as does the doctor or the lawyer of the present day. Agriculture in the future will require to be followed with more intelligence and understanding than in the past. Such laws as that of heredity will have to be understood, that men will not allow the perpetuation of ringbones in horses, and other defects. The laws of plant life must be given thorough study, that crops of all sorts be made the most of. By a scientific knowledge of natural laws men will be able to co-operate with Providence in raising plant and animal life to higher degrees of perfection. In this field there is practically no limit to the advance that can be made. Men of one generation must take up the data of the preceding one, and go right on improving in knowledge and power to deal with fundamental truths. Intricate science must be brought into the handling of manures, curing cheese, ripening cream, etc. Man will then have greater confidence in himself and in others. Men in ignorance grumble away many dollars' worth of time and energy because of failures due to their own mismanagement. Men are heard to complain because the big ears of corn have taken the fertility from the soil.

In brilliant sentences and flowery paragraphs the coming farm home was set forth, which will have all the advantages of the city in its communication therewith by electric car, telephone, etc., which will bring the concert hall, the opera, the lecture platform, the library, and all the other mental luxuries to the very doors of the more enlightened, happier and brighter tillers of the soil. The citizen of the city and the country will know no difference, but they will be one people, with similar tastes, advantages and luxuries. Here a model home was described, with its sanitary arrangement, beautifully graceful lawn, and with all the love that sweetens every bitter experience. The address was a masterpiece of eloquence and oratory, evidently the product of an educated and refined mind.

Presentation of Gold Medals.—After Prof. J. W. Robertson had delivered practically the same address as he gave at the Eastern convention, reported in this issue, upon the stability of our cheese trade, Hon. Sydney Fisher presented the two gold medals donated by the Windsor Salt Co. to the makers of the highest-scoring cheese at the Toronto Industrial and London Western exhibitions. Mr. Jas. Morrison, of Murdock, won the Industrial award, and Mr. A. F. Clark, of Poole, the Western.

Methods of Creaming Milk.—Miss Laura Rose, instructor in the home dairy at the Agricultural College, held the rapt attention of a very large audience while she made clear the science and practice of separating cream from milk. It was shown that because the ingredients of milk are largely in suspension and of different specific gravities, gravity and centrifugal separation are possible. The fat of milk being lightest and in globules, it rises to the top of the pan or pail as fat will rise in water when allowed to stand for a certain length of time. It was remarked that the globules of Jersey and Guernsey milk are larger than those of Ayrshire milk, which stamps the former breeds as butter cows and the last as being better adapted for cheesemaking. The larger globules rise more readily than the smaller. Miss Rose exhibited to her audience samples of pure butter-fat, casein, milk-sugar, and ash, which are the chief dry ingredients of whole milk. The casein or curd is of much the same composition as the white of egg or lean meat, which gives skim milk a greater

value as a diet than is usually attributed to it. The milk-sugar is a white powder possessing somewhat less sweetening properties than cane sugar. The ash was shown as a gray powder which goes to build up the framework, etc., of the animal body.

The speaker illustrated the various systems of creaming milk that have been in vogue in ordinary dairy practice, by presenting before them the shallow tin pan, the deep pail, and the bowl of a modern separator. In skimming from the shallow pan the perforated tin skimmer should not be used, as it allows more or less of the fat to run through into the skim milk. Neither should the finger be used to separate the edge of the cream from the side of the pan, but a knife, which will do better work. The pan should then be tipped up sufficiently to allow the layer of cream to be floated off into the cream pail. When the deep pail is used the temperature of the milk should be held down to about 45 degrees for 12 hours in summer and 24 in winter. The pail should have a tap at the bottom, to which the bottom of the can slopes so that all sediment will run off with the milk. A graduated strip of glass in the side is also a necessity. With the deep pails milk should be set as soon as possible after straining, to insure good work. With the centrifugal separator practically no cream is lost and both milk and cream are used to better advantage. Miss Rose invited farmers present to send their daughters to the dairy school, that they may be better fitted to assist in conducting the business of the farm.

Resolutions.—"That this Association, having since its last convention lost by death one of its oldest members, Mr. John Robertson, of Ingersoll, desires to place on record the high esteem in which Mr. Robertson has always been held by them; and further, that as a cheese and butter maker, and as a cheese and butter instructor, and as a cheese and butter exporter, he has largely aided in bringing the butter and cheese trade of Canada into its present high position."

"That this Association be requested to lay before the authorities of the railway companies of Canada the difficulties of their present methods and charges of transportation of parties attending the annual conventions of the Cheese and Butter Associations of Western Ontario, with a view to securing cheaper rates and more simple methods for the future, and that the directors of the Cheese and Butter Association of Eastern Ontario be requested to take similar action, either independently of or in conjunction with the directors of this Association."

Officers Elected.—Honorary President, Hon. Thos. Ballantyne, Stratford; President, Harold Eagle, Attercliffe Station; 1st Vice-President, R. M. Ballantyne, Stratford; 2nd Vice-President, Aaron Wenger, Ayton; 3rd Vice-President, Jas. Connolly, Porter Hill. Directors: Jas. Prain, Harriston; J. N. Paget, Canboro; Robt. Johnston, Bright; G. H. Barr, Sebringville; A. F. McLaren, M. P., Stratford; J. A. James, Nilestown; Geo. E. Goodhand, Milverton. Auditors: J. C. Hegler, Ingersoll; J. A. Nelles, London. Representatives: To Toronto Industrial, H. Eagle and A. F. McLaren; to London Western, T. B. Millar, Kincardine, and S. G. Kitchen, St. George. The Secretary, Geo. Hatley, of Brantford, read the financial statement, which showed that \$5,113.73 had been received during the year, and \$4,518.68 had been paid out, leaving \$595.05 in the treasury.

Likes the Hand Separators.

To the Editor FARMER'S ADVOCATE:

SIR,—In the ADVOCATE of January 2nd, page 10, you invite those who have had experience with cream separators to write their experience with same. I have been using a hand separator with a herd of eight cows for the past eighteen months, and must say I am highly pleased with it, as I believe it does all that is claimed for them. It saves labor, improves the quality of cream or butter, and the milk can be fed to calves or young pigs while fresh and warm, which, to my mind, makes it more valuable for young stock; while the extra amount of butter-fat obtained with a separator over the old way will repay a high interest on money invested for a machine. I have a No. 11½ Alexandra separator, with a capacity of 250 lbs. per hour, which is easily turned by hand. A boy can work it with ease. The Melotte separator is also so easily turned by hand as to make other power unnecessary. My neighbor has one for a herd of 18 cows, which has a capacity of 700 lbs. per hour, which is easily turned by a boy.

A SUBSCRIBER,
York County, Ont.

In the course of a business letter to this office, Mr. W. C. Shearer writes:—"Mr. John I. Hobson, of Guelph, and I are now here in Prince Edward Co., Ont., as delegates of the Farmers' Institute staff, and are having very successful and interesting meetings. There seems to be a spirit of enquiry for more knowledge, and for finding out any more successful and cheap methods of doing their work, or of running their farms. We have been very much in a dairy district since coming here, and we find the meetings where 'Corn Growing and the Silo,' 'Breeding and Feeding Hogs for Profit,' 'How to Improve a Dairy Herd,' 'The Value of Supplementary Foods in the Management of Stock,' also 'How to Build Up and Maintain a Beefing Herd,' are discussed to be the ones where the greatest interest is shown."

The Hand Separator Approved.

To the Editor FARMER'S ADVOCATE:

DEAR SIR,—In your 2nd of January number you ask those that use cream separators to send you an account of how they like them. In reply I would say we used shallow pans until four years ago; then we commenced using the deep-setting cans and ice, and we had a galvanized iron tank encased in a wooden box, packed in between with sawdust in summer time to keep out the heat and winter time to keep out the frost. We let the milk set in winter 36 hours and summer 24 hours; the latter way being far ahead of the shallow pans. But both of these ways caused too much work carrying the milk to and from the house and barn, and as we raise nearly all of our calves in the winter, the milk had to be all heated on the stove. Sometimes it would be too warm and sometimes too cold, and the calves did not thrive the way they should have. We purchased a Melotte separator at \$100. We have been using it a little over two months, and we consider it far ahead of either of the old ways. We have a little room built for ours off our cow stable, so that all we have to bring to the house is our cream and what milk is needed in the house. The Melotte is very easily turned; a child of twelve years of age can turn it with ease. The machine is so constructed that in cold weather we can cork both outlets in the bowl, and heat with hot water before using. We also got a contrivance made for heating the milk in tank, so that when it has gone through the separator it is warmer than when it came from the cow. I might say, in conclusion, that if I had to go back to the old ways I would sooner let the calves suck the cows. But I must admit they are doing nearly as well as if they did suck the cows.

G. H. PAYNE.

P. S.—We make one pound of butter out of a fraction less than 22 pounds milk, principally all from new calved cows.

The Cow and the Babcock Test.

To the Editor FARMER'S ADVOCATE:

SIR,—The word "cow" may mean, in the dictionary of the dairyman, an animal that gives \$10 of marketable product annually, or an animal that gives \$20, or one whose product sells for \$50 to \$70. The word may mean an animal that drops calves not worth the salt they eat, or it may mean one whose offspring commands \$50 to \$75 each when ready to "come in." The writer would be delighted if he could convey to the ADVOCATE'S readers the real dollar-and-cents connection that exists between the cow, the milk tester and the weigh scale. But we must make an attempt.

Not one farmer in one hundred who keeps cows has accurate knowledge of their value individually. Not one in the same number can certainly say which is his best cow, which his second best, and so on down, even in a herd of half a dozen. Where is he who knows whether or not his herd is profitable, much less the individuals of the herd? These seem strong sayings, but this is no time nor subject for platitudes.

How to do it.—Then how are we going to know? This way: Buy a weigh scale—a spring balance is cheapest and most convenient; hang it up in the milking barn, and weigh each cow's milk separately by simply hanging the pail on the balance every time she is milked for a whole year, or at least all the time she milks during the year, and record the weight of each milking on a blank prepared for the purpose, which blank is to be hung up in a convenient place in the barn. [NOTE.—To be legal, a spring scale must bear the stamp of the Dominion Weights and Measures Department, and must be inspected annually or be liable to confiscation.—ED.] A pencil hung by a string will be always ready for the purpose. At the end of the month copy the total monthly weight in pounds into a cheap book, in which to preserve it, and hang up a new blank.

The best "blank" is one made from a piece of hard maple ten inches square, smoothly planed and ruled. The names of the cows are written in ink and coated with white shellac, so that they will not wash off. The figures are washed off at the end of each month. So much for the quantity of milk. Be it noted that to weigh the milk occasionally is worse than useless, and brings no light.

Quality test.—Having the quantity (in pounds), the next thing needed is the quality. This is obtained by testing the milk for the per cent. of fat by the use of a Babcock milk-tester. This part of the work should proceed on some such plan as the following: Secure a pint glass fruit jar or a proper milk bottle for each cow, and paste a label on it on which the name of the cow is written. Next get the tinsmith to make a small tin sampling dipper, holding about a fluidounce, with a wire handle about 12 inches long. Buy of the druggist or from your nearest creamery or cheese factory about 10 cents' worth of bichromate of potash to preserve the milk. Put into each jar or bottle as much of this preservative as will lie on a five cent piece (in winter), and about twice as much in summer. The preservative should be ground fine. Now, on the 10th day of each month throughout the year commence to sample each cow's milk at every milking for one week (7 days). This will give fourteen samples of milk, all taken as soon as milked, and carefully stirred before sampling to insure uniformity of sample. The exact day of the month on which to commence the sampling is comparatively unimportant as long as the samples are taken consecutively for a long enough period, about the middle of the month. The per cent. of fat

found in this composite sample may be taken as a fair average of the fat content for that month. When the purpose is to get knowledge of the productive capacity of a cow in butter-fat, occasional weighings of the milk and occasional tests of one or two milkings are quite valueless.

The space allowed for this article will not permit of a description of the method of testing milk, but the writer thinks it would be better to have the milk tested by the nearest creamery operator, if a capable one can be found within driving distance. The actual time consumed in the sampling and weighing need not exceed three or four hours per month.

F. J. SLEIGHTHOLM.

A Milk Record.

The success of a cheese factory or creamery is to a great extent proportionate to the satisfaction which it gives the patrons. Monthly or bi-monthly milk records sent out on neatly-printed cardboard giving the amount sent each day, together with the test, do much to promote confidence in the manufacturer and to create a desire for more painstaking effort and care in the production of the raw material.

For convenience and accuracy in factory work and to facilitate the filling out of these cards, it is desirable to have in a permanent form a detailed record of the milk supplied by each patron. For this purpose the form of milk-book illustrated on this milk-record page has been devised, and in a majority of cases will fill the requirements both as to convenience and cost.

In the weigh-room smooth maple boards, 5x12 in., are used to record the weight upon, the milk brought by each drawer being on a separate board; the weights are totalled up as fast as each load is taken in and are entered into the milk-record at the con-

JANUARY. 1899.			
DATE.	C. H. CAN.	S. P. BATH.	JOB. B. BOX.
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venience of the operator; the names of the patrons are written on the board with ink and covered with white shellac, in order that the soap and water used in washing off the figures will not erase the names.

A 100-page foolscap book, costing, in a good binding, about \$1, has been found to answer admirably, and will accommodate over one hundred patrons for twelve months. The size of each page is 9x15 in., and the thirty-seven lines required for the daily weights, the totals and the test should be ruled into thirteen vertical columns, each 1/4 inches wide. By putting in oblique spaces for the patrons' names, they can be read quite as readily as if written horizontally. The days of the month are filled in as required, the dates on which Sunday occurs being in red ink, that they may be easily seen and left blank. One column for dates at the extreme left serves for two pages. The month is divided into four periods, necessitating one less addition than if weekly totals were made, and is especially convenient where tests are made twice per month, as the first two totals always comprise just half the month's milk. Both totals and tests are inserted in red ink to distinguish them from the daily weights. The monthly test is put on the bottom line, and in case a bi-monthly test is made, the first test may be inserted in a space left by a Sunday near the middle of the month. If the patrons' names are written one below the other, the monthly totals must be made up by adding across the page, thus increasing the liability of error. In the system we describe, however, the daily totals are obtained from figures placed one below the other on the weigh-room boards, and each patron's monthly total by adding together the totals for the several periods. The work can be easily duplicated by totalling the daily weights.

Doubtless the busy factoryman will at first regard the adoption of such a record as another

demand upon time and strength now sufficiently employed. When, however, it is pointed out that but fifteen minutes are required to enter the day's milk for upwards of eighty patrons and wash off the boards ready for the following day, it will be readily conceded that he is well repaid for the little extra time spent, by the neatness, convenience and accuracy assured.

J. E. CREALY.

Middlesex Co. (West), Ont.

A Visit to the Kingston Dairy School.

The Kingston Dairy School, under the superintendency of Prof. J. H. Hart, is being taxed to its utmost capacity by students this winter, there being at the commencement of the fourth two-weeks term some forty students in attendance. While a few of these are remaining only a few weeks, the great majority are taking the full twelve weeks of instruction. According to the instructors—Messrs. G. G. Pablo in cheesemaking, L. A. Zufelt in milk-testing, and J. W. Kerr in buttermaking—the class of students is improving from year to year. The classes of this session are made up of farmers' sons and cheesemakers who desire to improve in making cheese and also learn creamery buttermaking. This double knowledge is found necessary since so many of the cheese factories are putting in butter plants for winter operation.

The school is well equipped with modern machinery of various good sorts, so that students are enabled to become familiar with all such apparatus as they are likely to come in contact with in factory practice. Considerable experimental work is carried on, such as various systems of ripening cream, cheesemaking with pasteurized and unpasteurized milk, and with milk of varying richness. Different treatments of curds from overripe milk, etc., are also conducted, such as washing the curds with water while in the vat, etc.

The school finds no difficulty in securing plenty of good milk for their work; neither does the disposal of their butter and cheese at good prices in Kingston and Montreal cause them any trouble. The school is evidently doing excellent work, and deserves the patronage and support it is receiving.

Butter Failing to Come.

To the Editor FARMER'S ADVOCATE:

SIR,—I noticed in your last issue complaints of not being able to get butter; the answer does not seem to be very satisfactory. I have one cow whose milk has been that way for several years as soon as winter set in. It did not matter how we managed it, or how much other milk there was with it, could not make butter if we churned for a week. Take her out and the other would churn in twenty minutes. All fed and managed the same. I sent a sample to the Professor of Dairying, O. A. C. He said it tested a fair per cent. of butter-fat, but gave no satisfactory explanation. This cow's milk went the same this fall. I kept the milk separate, and milked her once a day, using the milk. After a time it got better. We are now mixing it with the other, and churning all right. Would like to hear the matter discussed and some understanding arrived at if possible.

J. S. COLE.

Parry Sound District, Ont.

[NOTE.—Will readers who have overcome this difficulty relate their experience, or some scientist solve the problem, so that tired churners may understand the difficulty.—ED.]

Easy Work to Turn Separator.

SIR.—Having read your article on the use of cream separators in the Jan. 2nd number of your paper, we thought we would give our experience. We bought a National hand separator last October. It skims very close. When we tested the skim milk with the Babcock tester we found there was no fat left in it. It runs so light that a child of twelve years of age could separate the milk of ten or more cows without being at all fatigued. We have twenty cows in milk, and although we were skimming close before, having a first-class cellar, we find there is quite an increase in the quantity of butter. It is very simple in construction—can be set up for work or taken apart to clean in a few minutes. It skims 330 pounds of milk an hour. We would advise your readers to try a separator. We quite agree with you in regard to the saving of labor, and the young stock thrive well on the fresh milk.

THE MISSES MACDONALD.

Wellington Co., Ont.

Tuberculosis in Manitoba.

In our January 2nd issue, Dr. Torrance, of Winnipeg, called in question the high percentage of cattle reacting in Manitoba under the tuberculin test, as reported to the Dominion Department of Agriculture and summarized in one of our December numbers. The tests made by the Dominion veterinaries were from July, 1896, to October, 1898, and the total number tested was only 258, and the number reacting 127. It is but fair to the Province that this should be stated, and we are also advised that those tested were chiefly dairy cows about Winnipeg, which naturally showed a much larger proportion than had the tests been made generally over the Province. In fact, it would be unreasonable to draw any general inference from it as to the great mass of cattle in the country. Furthermore, coming to the past year, Dr. Torrance quotes the official record of Dr. Dunbar, the city veterinarian of Winnipeg, showing that out of 1,333 cows tested only 8.6 per cent. reacted, evidently a very much more favorable condition of affairs.

Butter and Cheese Association of Eastern Ontario Meet.

The 22nd annual convention of Eastern Ontario dairymen was held at Kingston on Jan. 10th, 11th and 12th. After the Association had been warmly welcomed by Mayor Ryan and other representatives of the City Council, President Mr. D. Derbyshire, Brockville, delivered his annual address. He referred feelingly and regretfully to the loss by death of Mr. T. J. Madden, a former representative of the Board, and Prof. J. J. Ruddick, Principal of the Dairy School, by removal. The latter's place, he believed, is being creditably filled by Prof. J. W. Hart. Referring to the dairy trade, it was pointed out that future expansion must be along the line of butter production, since we are sending to England about as much cheese as the markets there can handle, while there is plenty of room for good creamery butter in the motherland. To show the rapidity of the development of our butter trade, it was pointed out that in 1894, 32,619 packages of creamery butter were exported, while in 1898, 280,000 packages were sent to England, and the reputation of "Canadian Creamery" is improving all the time. The President predicted that in four years more we would be sending 400,000 packages annually, besides just as much cheese as we are now exporting, viz., 1,900,000 boxes in 1898. The meeting was warned against making fodder cheese, or any other sort not first-class, as the British consumer is getting too much good cheese placed before him to accept second-grade stuff. A greater uniformity of fine quality is needed if we are to hold our present high position, and this cannot be done without an improvement being made in the general care of the milk, condition of the factories, especially the curing room. A better class of makers are needed, and a course at the Dairy School was recommended as the remedy for this last defect. Mr. Derbyshire urged the planting of shade trees around the factories, making everything inside and out of the factory as neat and clean as possible, and then have a first-class, well-informed fellow inside to look after the making business. He should be such a man as can instruct the patrons when milk is coming to the factory in wrong condition. He spoke of the need for more refrigerator cars to carry away the butter and cheese, which should be sold regularly as soon as it is ready to ship. Regarding the low price paid for cheese during the season of 1898, it was claimed to be due, to the extent of a cent per pound, to a certain large Canadian dealer, who, in his determination to undersell others in the British market, accepted a lower price all through the season than was necessary. This set the price for Canadian cheese, to the disadvantage of all Canadians concerned.

Troubles of the Cheesemaker.—Prof. H. H. Dean, of the Guelph Agricultural College, referred to many of the difficulties encountered by cheesemakers during the past season, and suggested remedies for the same. The milk supplied to too many factories is not as clean and in as good condition as it should be. A process of education, such as conventions, dairy literature, etc., were suggested as the remedies. It is Prof. Dean's impression that there are too many small factories for the good of the dairy industry. Larger and better equipped factories, with strict and careful management, was recommended as a cure for many of the present difficulties. During the past season cheesemakers have had to make good many losses for poor cheese, for which they were not altogether responsible. Poor condition of milk, bad factories, bad drainage, and faulty curing rooms are too often the causes of poor cheese. More true co-operation is needed, that the real causes of trouble will be sifted out and met. Makers have found difficulty to get milk to coagulate, even when large quantities of rennet were added. This was found, in some cases, to be due to patrons adding baking soda to milk to keep it sweet. The temperature in many curing rooms has been found difficult to control in hot and cold weather. Where the room is properly insulated, the use of ice and sub-earth ducts were recommended. From 60 to 65 degrees Fahr. is considered the most desirable temperature for curing cheese. A higher temperature spoils flavor, loses fat, and shrinks the cheese. For the sub-earth duct, a dry ditch 6 to 6½ feet deep was recommended. Six rows of six-inch tile, built in two tiers, forms a good conductor. One hundred and fifty to two hundred feet long was recommended. The outer end should have a pipe, 14 to 16 inches in diameter, extending 8 to 10 feet above ground, and fitted with a hood, with a tail, on a pivot, so as to face the wind at all times, insuring a draft. It should have a slide where it enters the curing room, so that it can be closed when desired. The use of ice gives good results, but it is rather expensive in the amount of labor it involves. Mold occurs more frequently with the sub-earth duct, but Prof. Dean

is of opinion that since the cloth bandage is always stripped off the cheese before it is placed in the retail market the presence of a little mold is not so objectionable as we are sometimes led to suppose. A reference was made to mottles in cheese, which has been clearly proved to be of bacterial origin. It is usually accompanied by bad flavors, and is confined to colored cheese. No reports of mottled cheese have been heard of the past season. The Professor is of the opinion that the coloring of cheese will soon go out of date, as it adds no improvement to the cheese. Whenever mottled cheese is found in a curing room, it was recommended to remove it at once and disinfect the room thoroughly.

Feed and Management of the Dairy Cow.—Mr. J. H. Grisdale, of Iowa Agricultural College, read an elaborate and practical paper upon the rearing and management of a dairy herd. He advised that cows calve in the fall, because they will give 25 per cent. more milk in the year than if they calve in spring, and because more attention can be given the young stock during the choring season. He recommended the use of the hand separator in a small dairy, and a power separator run by a bull where a larger number of cows are kept. It was recommended to feed cows supplementary feed during drouth, that her milk yield may not decrease, which will increase their present and future productiveness. In winter dairying sufficient quiet daily exercise to keep up muscular vigor was claimed to have been found more profitable than constant housing from fall to spring. Prof. Roberts found 8 per cent. increase of milk by allowing cows to run loose in a roomy, comfortable shed, over those tied constantly. Inside watering with water at about the same temperature as the stable was highly spoken of. An inside tank was recommended.

Weeds.—Prof. Jas. Fletcher, LL.D., of the Central Experimental Farm, Ottawa, gave an instructive address on weeds, which was listened to with rapt attention. The study of weeds is an extensive one, but not difficult to master, as it can be brought down to principles. They take posses-

sion, rob and crowd our crops, and therefore should be combated. Dirty seed, especially clover and grass, introduce weeds that will cost hundreds of dollars to get rid of. Among the new weeds that are giving trouble, dodder in clover was referred to as becoming prevalent in some sections. It is usually introduced in clover seed. It is a parasitic plant, and when once it gets a start in a clover field it sends suckers into the clover stalks, and feeds from that source independent of its own roots, and spreads in all directions. All boughten clover seed should be carefully examined before sowing. Samples sent to any of the experimental stations will be examined free of charge. Twitch or couch grass, as well as thistles, are best combated by shallow cultivation. Deep plowing serves to re-plant and increase those weeds, especially the former. To kill mustard the seed in the land should be germinated and the plants not allowed to produce seed. This is the treatment for all annual plants. The use of the modern weeder was strongly recommended on grain fields after the crop is four or five inches high. This is being followed with particular advantage in Manitoba. It not only kills weeds, but conserves moisture, and therefore stimulates the crops.

Bacterial Infection of Cheese.—Dr. Connell, of Queen's University, has during the last few years been instrumental in locating the bacterial origin of peculiar troubles in certain cheese factories. Mottled cheese was found to be caused by a certain species of bacteria found in a slimy drain opening into the factory. Referring to susceptibility of milk to bacterial infestation it was pointed out that milk is a suitable media for all bacterial development. When surroundings are kept clean and wholesome, and no putrifying substances are allowed to contaminate the atmosphere in which milk is kept, desirable sorts of germ life will be found, but when the opposite is true there may be no end of trouble to the cheesemaker. Bacteria causes all kinds of changes in milk, and is born in the atmo-

sphere. A common source of trouble is bacteria which comes from the excreta of animals, such as cows, chickens, etc. These are borne in dust particles and in other ways which may escape notice. Road dust is a common vehicle of these germs. This peculiar sort is claimed to be the cause of gassy milk, pinhole curd, etc. Often these bad sorts are propagated from day to day in the "starter" used. Early in September, a maker found difficulty in his work, inasmuch as his cheese were open in body and developed a bad flavor. Dr. Connell visited his factory and found a new floor had been put over an old one some years ago, and between them was a considerable depth of putrifying slime, while the factory was peculiarly infested with flies. These the Doctor believed were instrumental in carrying the infection from the slime to the vats.

Shrinkage of Cheese.—Mr. Aderhold, a Wisconsin dairy instructor, claimed much for the sub-earth duct in preventing undue drying and shrinkage of cheese in the curing room. He believed a decrease of 3½ per cent. of shrinkage might be prevented in the average factory by having the curing room controllable and cooled with sub-earth duct. He also advised upper ventilation. In referring to the sediment found in the bottom of cans sent to the factory, he claimed that unclean milking was largely to blame. He made the estimate that sufficient sediment was consumed with the milk in Berlin, Germany, annually to manure 40 acres of land. He considered it a piece of bad business on the part of patrons to allow good milk to go into an imperfect factory, having a defective curing room, to be made into cheese.

Rearing and Fattening Hogs.—Prof. Robertson, in an address, claimed that all breeds can be kept at a profit by wise management. Success lies more on the man's side than that of the hog. Owing to the bareness of the pig's skin and his aversion to drafts, he should have a comfortable, dry shelter if he is to do well for his owner. Drafts will cause a pig to become constipated, which is the source of many pig ailments. Dry earth makes the best floor and bare cement the worst.

A board sleeping platform is needed on a concrete floor. Allow plenty of sunlight, that the pig may be happy and healthy. Slope floors to the front of pen and have dry bed at back. When a pig is young it should be fed liberally with bulky, succulent food until past 100 pounds. After that a more concentrated ration should be given, on which he should be finished. When thus fed he is not liable to produce soft bacon. Continuous grain feeding from the first is expensive in food and in the growth produced by it. Aim to grow all feed fed. It is better usually to keep less hogs than to have to buy feed. The present-day markets require pigs about 200 pounds at 8 to 9 months rather than at 6 months. Have hogs to sell all the year round. A dairy farmer can raise a considerable revenue this way.

Cheesemaking.—Mr. J. T. Dillon, formerly superintendent of cheese factories in Prince Edward Island, gave a paper on practical cheesemaking, in which all the steps in the process were dwelt upon. Among other things, he emphasized the importance of using clean-cutting curd knives that will not crush the curd. To guard against over-cooking is also important. Fast-working curds should be dipped early and washed to get rid of the acid. Do not stir curds on rack too dry. Endeavor to secure an even temperature through the entire curds while cooking, also break all lumps that are liable to roll away to the end of the rack. Pile curds up if working slowly. Cut the curd evenly so that salting will be uniform. In cutting, cooking, and salting, etc., everything should be done with uniformity and care. Always weigh the curd into the hoops. Make cheese that will fill the boxes neatly. Allow free circulation of air in the making room, and have cover for the vats to prevent cold drafts striking the setting curds. Use three pounds of salt for 100 pounds of curd ordinarily, and 2½ pounds for slow-curing cheese. Cure cheese at 60 degrees, and open the curing room windows in mornings and evenings. Keep cheese out of drafts or they will crack, and out of the sun or fat will run out and flavor will suffer.

Stability of our Cheese Trade.—Prof. J. W. Robertson, Dominion Dairy Commissioner, was able to speak with authority on our cheese trade with Great Britain. Canadians gained the present high reputation for their cheese at a time when there was comparatively little competition in first-class Cheddars in the Old Country. Now Canadian methods of manufacture are being introduced into Great Britain and other countries, enabling them to furnish a high-class article. The demand is now for a soft, mild-flavored cheese, which is best produced in a cool climate. It is therefore very important that curing rooms be kept cool during hot weather, and warm during cold weather. By the ice and salt cylinders, properly insulated butter storages are being kept down to 35 to 38 degrees all summer, so



MEMBERS OF THE CHEESE AND BUTTER ASSOCIATION OF EASTERN ONTARIO. ATTENDING THE ANNUAL CONVENTION HELD IN KINGSTON, JANUARY 10TH, 11TH AND 12TH.

that it should be no difficult task to keep a room down to 65 degrees. Besides having the walls, ceiling and floors properly insulated, the doors and windows should be double and fit tightly. The liberal use of building paper and matched lumber is rather to be used than plaster, which is easily chipped and cracked. The sub-earth duct was recommended, as was also the use of ice. Fifty tons of ice well saved will do a 100-ton cheese factory all summer. The Professor estimated that \$125 will insulate an old curing room if in fair condition. This will save a pound per cheese shrinkage, and help the flavor. This may save \$400 loss in a season. In spring and autumn, use a screen around the stove in the center of the room to distribute the heat evenly over the room. Just here the Professor referred to the intention of the Department of Agriculture to introduce the illustration station idea to the extent of putting two big factories in each of the Provinces of Ontario and Quebec into proper condition, so that the cheese can be made and cured at the proper temperature. There will also be, in connection with these factories, curing rooms in which the temperature cannot be rightly controlled, similar to most of those found throughout the country. It is the intention to compare the results of the two rooms by sending the cheese cured in either to the British market, and to publish the prices received as soon as they are known. In this way it is hoped a lesson will be learned that will stir up factorymen to the advantages of having their curing rooms as they should be.

During the discussion which followed this address, a member recommended a cooling duct from the bottom of the well. Instead of conducting the pipe underground, in the ordinary way, it is taken down the well and up into the curing room. The outer end of the pipe extends several feet above the ground, and is fitted with a cowl to catch the wind, causing a draft which cools as it passes down and up the well. By that system he was able, last summer, to hold the temperature of the curing room from 55 to 65 degrees in the hottest weather.

Hon. Sydney Fisher, in an address, which was listened to with much interest, referred to the growing preference in England for things Canadian. As they try our dairy and other agricultural products, they show their satisfaction by sending for more, and in this way our exports to the Old Land have greatly increased. By reason of this ever-increasing export trade we are enabled to see better times. It has brought our farmers much more cash. (Just here we might refer to a point made by Principal Grant, of Queen's University, during his speech at the banquet given the convention by the City of Kingston, where he pointed out that Canada is not doing the square thing with England in buying so little of her manufactures in return for their reception of our food products.) Hon. Mr. Fisher mentioned that some complaint is being made in England regarding our cheese. This, he believed, would increase rather than diminish, except greater care be taken regarding the milk received, and in curing the cheese. Referring to the refrigerator car and ship service, it was pointed out that butter is now landed in England in as perfect condition as when it leaves the Canadian factory, even as far west as the Northwest Territories. Expansion of our butter and bacon trade was recommended, but development of the cheese industry must be confined to improvement rather than expansion. Our bacon industry, which goes hand in hand with dairying, is doubling up rapidly. In 1896, \$4,000,000 worth was exported, and in 1898, \$8,000,000 worth was shipped. As our bacon suits the English consumer, the Dominion Minister of Agriculture is strongly of the belief that in two years more our output of bacon to the British markets will again be doubled or equal to the export of our cheese.

Reports of Inspectors.—Messrs. G. G. Publow, L. A. Zufelt, G. H. Bensley, Hugh Howey, J. A. Kerr, and R. W. Ward read reports of their season's work of inspection of the factories in their allotted districts. Mr. Publow tested 6,341 samples of milk, and found it necessary to prosecute 39 patrons for tampering with their milk. He found an improvement over former years in the style and finish of cheese. Principal faults were bad flavor and looseness in make. He was not able to spend as much time with some makers as he should. The troubles were found to be largely due to bad condition of milk. Harsh texture and weak body were due to improper methods in manufacture.

Mr. Zufelt found an improvement in most sections. Makers too often had to shoulder losses not due them. Too often the milk was kept over night in the midst of impure air. Better care of milk would do much to lessen troubles. Found cheese shipped from factories too green. More inspection and instruction is needed in many districts. He found there was a falling off in adulteration of milk.

Mr. Bensley found out of 7,500 samples of milk tested only 18 had been tampered with. Many curing rooms were found defective in his district. Makers are not sufficiently careful in the condition of milk received.

Mr. Howey spent 131 days in giving instruction. He found 19 samples of adulterated milk. He sounded a note of warning to makers to reject milk that is not right.

Mr. Kerr gave instruction on 131 days, and found over 40 cases of adulterated milk. He also reported an increase of factories using the Babcock Test in paying for milk. Too much bad flavored milk is received at factories. A decided improvement was noted in the cleanliness and condition of factories; still many are unsuitable for best work.

Mr. Ward found 61 adulterated samples of milk. Competent makers are too often handicapped by bad flavored milk coming in. He found the existence of a lack of sympathy and co-operation between adjoining factories. He recommended that every factory have a territory of its own, so that patrons could not change about for some cause due to their own neglect. Complaints were made of too many drawing home whey in milk cans.

Buttermaking.—Mr. Marker, Government Superintendent of Northwest Creameries, in a pointed address touched upon many important points in good buttermaking. He referred to the importance of a buttermaker being well qualified with theoretical and practical knowledge of his business. He should also be a man with some individuality and prestige, so that advice will be taken by the patrons from him. He should impart information for the benefit of his patrons and the welfare of the butter trade. Referring to the methods of improving dairy herds, it was pointed out that in Denmark patrons combine and engage a man to test their cows by the scales and Babcock tester. In this way the poor individuals are located and weeded out. The patrons of a district also combine in purchasing a first-class dairy-bred bull for the service of all their cows. This line of co-operation is worthy of serious consideration.

In creamery work, ripening the cream is of greatest importance. Pasteurizing and the use of fermentation starters were highly recommended. A good quality of starter is necessary or else evil may be perpetuated. Mr. Marker claimed that a buttermaker should be a good judge of butter, that he may detect troubles and understand how to locate and correct them. He advised practicing with score card and butter trier. Flavor is governed in ripening the cream, and texture is influenced by churning and working. All buttermilk should be washed out of the butter, and it is better to lift the butter out of the wash water than draw off the water, so that the curdy particles in the bottom, if there be any, may not be incorporated in the butter. The cream vat should be covered to prevent the top surface of the cream becoming toughened.

Address by Dr. Mills, President of Ontario Agricultural College.—A pithy speech was made by Dr. Mills, in which he made a strong plea for more practical education. Our girls ought to be trained with a view to preparing them to fulfill their domestic functions in an intelligent manner. The changing of a number of our collegiate institutes and high schools into technical high schools was strongly recommended, that boys' and girls' hands be educated as well as their heads.

Addressing the makers of cheese and butter, he recommended all to take advantage of the free instruction given in our dairy schools. Four to six weeks, or even longer, would be well spent getting practical and correct knowledge about cheese and butter making. As a rule, the men who know most are most anxious to learn, and know-alls seldom advance. Men who expect to attain to any degree of advancement should pay some attention to their English education, that whatever is said or done by them will not suggest illiteracy which may be taken for ignorance. Stress was laid upon being and looking clean while in the factory. Men should grow beards or shave often enough to look clean. They should keep their finger nails and teeth clean, and should not have their breaths befouled by smoking or chewing tobacco. Prof. Mills claimed that a smoker or chewer should have no place in a factory where food products are being prepared. Have order in the factory and around it, then advice to patrons concerning better care of their milk will have some effect. Disorder is twin sister to dirt. The speaker advised patrons not to entrust milk in the hands of poor makers, but get good men and pay them well.

The convention suffered materially from the inability of several of the advertised speakers to be present through ill health. Ex-Governor Hoard, Prof. Saunders, and Hon. John Dryden were all expected, but failed to appear. There was also a deplorable lack of discussion upon the practical work of dairying on the farm and in the factory. Many of the addresses given, while good, were too general to be productive of much real advantage to the Association.

Officers for '99.—President, D. Derbyshire, Brockville; 1st Vice-President, J. McTavish, Van Camp; 2nd Vice-President, L. L. Gallegher, Harrowsmith. Directors: Wm. Eager, Morrisburg; J. R. Dargavil, Elgin; Jas. Whitton, Williams' Corners; J. B. Carlaw, Warkworth; and Henry Wade, Toronto. Auditors: M. Bird, Stirling, and F. W. Benton, Belleville. Secretary, R. G. Murphy, Elgin.

Care for the Birds.

To the Editor FARMER'S ADVOCATE:

DEAR SIR,—I would be much obliged to you if you would give this letter a place in your valuable journal. I wish to ask the farmers to assist us in preserving some of our game birds, viz., quail, which are one of the best insectivorous birds we have; they live on insects alone. Now they are becoming scarce, I would ask our friends to give them food or shelter; they will eat bread crumbs, small wheat, etc., at this time of the year. I also would ask them to remember our little meadow larks, which are being killed by a shameless lot of sportsmen. I remain, yours, etc., C. S. RACEY.

Deputy Game and Fish Warden.
Halton Co., Ont., Jan. 14, 1899.

GARDEN AND ORCHARD.

Plant Breeding.—II.

SOME PRINCIPLES BEARING ON THE AMELIORATION OF FRUITS.

BY JOHN CRAIG, PROFESSOR OF HORTICULTURE, IOWA AGRICULTURAL COLLEGE.

My object in broaching this subject again is to touch upon or possibly suggest some profitable lines for experiments. The work of the experimenter is likely to remain in obscurity unless the results he obtains are of practical value and meet a public demand. Each year fruit-growing is becoming more and more a specialized industry, and for that reason the sphere of the station horticulturist is constantly widening, and with this constant unfolding new lines of research offer themselves. In this way we may, in a measure, escape from the hackneyed variety test into the field of original investigation.

We grow fruits for home consumption and for public consumption—here are the primary elements of the amateur and commercial grower. But we must differentiate further in the case of the commercial grower. It is necessary that he should grow such fruits as he can sell. At this point it will be desirable for him to decide upon the kind of market to which he intends to offer his products. He should remember that at the present day there are two classes before the commercial grower—first, the open world's market which handles staples; and second, the special or personal market which demands quality instead of quantity. This latter market is but poorly supplied. Its demands are exacting, but the profits should be proportionately greater than in the world's market, where quantity and only mediocre quality are considered. Fine quality and handsome appearance are essential attributes to the fruit product that would cater to the demands of the special market, but does not attractive appearance play an important part also in selling fruits in the world's market? Fruit-growers know that with a given variety high color denotes good quality, or, in other words, degree of coloration in the variety may be accepted as indication of its quality. Now, fine coloration with good quality mark satisfactory adaptation of the individual to its surroundings, and suggest good cultural methods. Here, then, is an important field for the station horticulturist and for horticultural societies. It is not sufficient that a variety should live and bear fruit, but if "perfectly adapted" it will live more comfortably and bear better fruit there than anywhere else. Most fruits will grow more vigorously and bear better fruit in certain areas than in others. Sometimes these areas are quite circumscribed and limited in extent. For instance, the Gravenstein has found a peculiarly congenial home in the Annapolis and Gaspereaux valleys of Nova Scotia; the Fameuse probably gives handsomer and better fruit when grown on the Island of Montreal than anywhere else; the Niagara grapes of the Chautauqua region in New York are noted; while the Ben Davis of the Ozark region in Missouri is a vast improvement on the Ben Davis of the East. As a rule, varieties succeed best at or near the place of their origination, and next best where the conditions surrounding their birthplace are most closely approximated. But if we cannot produce fruit of sufficiently good quality and cheap enough to enable us to compete with other localities, we have the alternative of dropping out of the race or of developing varieties more perfectly adapted to the conditions which prevail. If left to herself, with a reasonable amount of raw material, nature will do this without man's interference; but her methods are necessarily slow, and man, the gardener, must co-operate with his intelligence in order to expedite matters. This brings us back again to the subject of plant breeding, and we have before us an immensely complex subject, but one of intense interest to the fruit-grower. Let us look at it from the practical side. In using the term plant breeding, fruit-growers are apt to look upon it as analogous to animal breeding in the surety and constancy of the result attending the practice. Plants cannot be bred with the same precision of results as can animals, because we have in a plant an essentially different organism to deal with. In the case of breeding animals we have two definite personal individuals; a plant, on the other hand, is made up of a composite organism, the unit of which is a bud. In the plant both sexes are usually present in the flower, and cross fertilization is not necessary to the production of a new individual; whereas in animals, the sexes being separated, union is necessary to the production of offspring. The plant is modified by environment because it is stationary in a given situation and must fit itself to circumstances or perish. It will therefore be seen that these organisms are essentially different, and the results obtained from a similar course of treatment must be expected to be widely different. A notion prevails to some extent that in plant breeding it is only necessary to unite two plants having the desired characters and the offspring will combine in itself the best of both,—and there you are. As a matter of fact, this is but the beginning of the plant breeder's work. It is possible that he may be so fortunate as to secure something valuable as a result of the first cross, but generally he considers that he has by this cross introduced and emphasized the elements of variation, through which agency he hopes to attain the desired end. Having obtained

the cross, the real work of breeding begins. The horticulturist must fix in his mind the ideal plant or fruit and work towards that end. When dealing with pomaceous fruits the process is naturally slower than with plants whose life cycles are covered in a year. For this reason the comparative amount of systematic work in plant breeding expended upon our tree fruits is insignificant. Good varieties have come to us,—but largely by chance. This is legitimate experiment station work. Thus far it has been largely carried on by individuals, and to them belongs great credit; but how much faster would the good work have progressed had it been supported by State appropriation, strengthened by horticultural society sentiment and guided by trained men?

If the horticulturist is at a disadvantage in crossing apples by reason of this slowness in producing fruit, he can at any rate offset this in a measure by making immediately available by grafting or budding any desirable form which may appear in the first generation. The type does not need to be fixed as in the case of those plants propagated from seeds, like cabbage or pansies. This fact encourages promiscuous crossing, but hybridists should remember that it is extremely important even in this somewhat uncertain process to select parents combining in as large a degree as possible the characters desired. In general, it is a mistake to make a violent cross—that is, between two very unlike forms—the offspring is rarely useful; e. g., currant and gooseberry. To summarize, then, (1) remember that a plant is a collection of individuals with great potential variability; (2) that the best results are usually obtained quickest by working with variable forms; (3) that it is wise to breed for one thing at a time; (4) that it is necessary to establish in the mind an ideal to work towards; (5) finally, that crossing is only a means to an end and should be supplemented by vigorous and persistent selection.

IN PROPAGATING A VARIETY SELECT SCIONS FROM THE BEST INDIVIDUALS OF THE TYPE.

How many nurserymen select scions with care, having due regard to the health and bearing habits of the individuals from which they come? How many orchardists notice the difference in bearing habits of a block of trees of the same variety? Yet there is infinite variation, and why should we not labor to perpetuate the best? Does the breeder of animals select animals at random, or does he choose with care those showing minor but to him important characteristics? Should the breeder and propagator of fruit trees be less careful? Should he not pay some attention to habit of tree and character of fruit of the tree from which he takes his scions? In root grafting, smooth, clean scions are desirable and workmen appreciate them, but it seems to me more important to cater to a bearing habit of tree, for instance, than to ease and comfort in growing scions and making grafts. Concluding, then, let me say that I have tried to show that varieties have comparatively narrow ranges of adaptation; therefore, each fruit-growing region should endeavor to work out its own salvation, which may be done by systematic plant breeding, assisted by fortuitous bud variation, as described in the ADVOCATE of January 2nd.

Grafting Apple on Hawthorn.

To the Editor FARMER'S ADVOCATE:

SIR,—I beg to reply to your correspondent as follows: If he desires to try grafting an apple scion on the hawthorn, I would advise him to do so, as if he did not succeed the only loss would be the scions. I fear, however, though it would be possible to successfully graft an apple on a thorn, it is not probable that the two would unite. The thorn is a very slow-growing tree, with comparatively little sap, and on this account it would hardly be likely that a strong-growing tree, such as the apple, would unite with it. I have never yet heard of anyone grafting an apple on a thorn successfully.

W. T. MACOON, Horticulturist.

Central Experimental Farm.

Renovating Old Orchards.

In the case of a large number of farmers, especially in the older settled districts, it has become a question whether it would be of greater profit to root out the old orchard, root and branch, and to re-plant, or to undertake a renovating policy. Decisions to make way for a new plantation are being made by many, but to those who are more moderate in their undertakings and wish to help the old faith-

ful towards a new lease of life, a few suggestions may be acceptable. It is impossible to lay down any specific method of procedure, as the cause of the unproductiveness must guide the remedy. A long neglected orchard cannot be expected to arrive at the profitable condition of trees that have received the proper care and attention from the beginning. In many cases trees may have become so fixed in habit that no amount of good treatment can make them bear satisfactorily. In order to undertake this work aright a grower must arrive at a clear conception of the agencies which conduce to productiveness, in order that the work of renovation may take the proper form.

Perhaps foremost among the needs of an old orchard is that of tilling and fertilizing the land. Extensive execution with the saw, and perhaps the axe, may be necessary in order to make thorough horse cultivation possible. There are usually in such old plantations trees that are clearly not worth the room they occupy, either from a dying condition of the tree, or from the poor variety of the fruit produced. In the latter case, if the trees are sound, grafting with approved varieties may be resorted to. Otherwise, these are better removed to the wood pile as cumberers of the ground. If the orchard has been long in sod, the roots may be so near the surface that plowing near the trees is impossible, or at least unwise. The spade or disk harrow can in such cases be used to good effect in the spring, before the ground becomes hard, at least near the trunks. It has also been recommended to drop corn or other grain into holes made with a small crowbar around the trees, and allow the pigs to root up the ground in search of it. This stirring of the surface preserves moisture and makes it convenient to work in manure, which will not only feed the tree through the roots it now has, but it will also start new fibrous feeders, through which wood and fruit growth will be supported.

The work of cultivation must wait for some

viewed by Mr. K. Boyer in "Artificial Incubating and Brooding." The two lots of fowls used consisted each of 3 Barring Plymouth Rock hens, 8 Light Brahma hens, 6 Light Brahma pullets, and 2 Wyandotte-Light Brahma pullets. The hens were one and three-quarters years old when the experiment began. Each lot, of 19 fowls, occupied a detached house having two compartments, respectively 8x12 and 10x12 feet in size, and comfortably and healthfully fitted. The houses were practically the same in every particular. The two lots were fed as follows: In the morning they received a mash, which was mixed hot the previous evening; at noon, and again about sundown, whole grain was scattered in the straw of the scratching sheds. Artificial grit, oyster shells, and pure water were kept always before them.

The leading details and results are shown in the accompanying table:

Began Feb. 9th, ended April 28th; 79 days.	Cost of food consumed.		Eggs per fowl per day produced.	Dry matter in food per egg.		Cost of food per egg.
	Lbs.	Cts.		Lbs.	Cts.	
Cut bone lot.....	283.5	.22	289	.940	1.2	
Animal meal lot....	287	.22	145	1.796	2.2	

The food received by the lot having cut bone was as follows (in pounds): Whole wheat, 90.5; oats, 100; wheat bran, 18.5; wheat middlings, 18.5; gluten meal, 18.5; ground clover, 18.5; cut bone, 10. Total, 283.5 pounds; cost, \$3.25; nutritive ratio, 1:4.8.

The other lot received essentially the same foods, except that in place of bone it got 9.7 pounds of animal meal. Total food, 287 pounds; cost \$3.26; nutritive ratio, 1:4.9.

In the above estimate of cost the labor required to cut the bone is included. The results indicate a decided advantage in favor of the bone. There was no perceptible difference either in the condition of the fowls in the two lots or in the size or character of the eggs produced.

Mr. Boyer, after dealing with the above experiment, commenting upon the value of green bone for egg-production, says that it will double egg yield, but it must be fed fresh, the same day it is cut, and not too liberally. He feeds it as a separate meal twice a week to all ages of birds over a week old during the entire year, as a substitute for bugs, etc., because his premises will not allow of a range for his flocks.

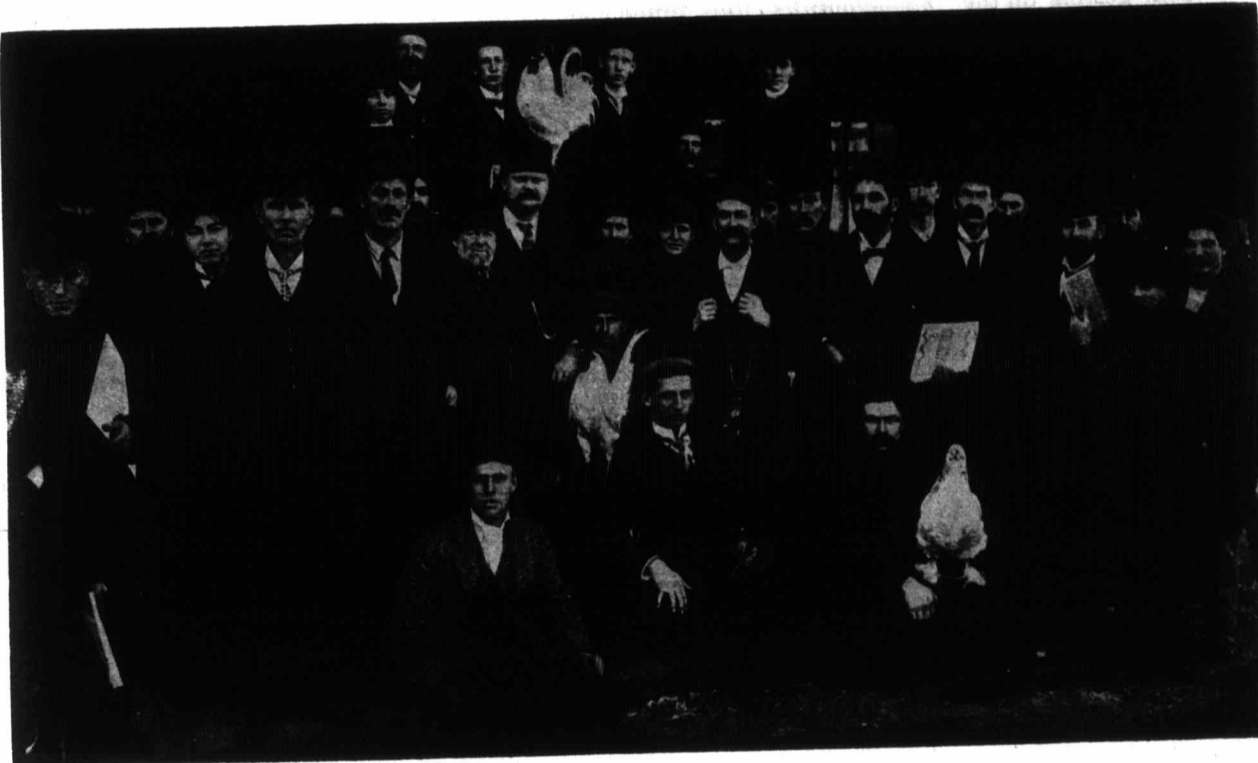
Peterboro Poultry and Pet Stock Exhibition.

The Peterboro Poultry and Pet Stock Association held its annual exhibition in the Town Market Hall on the three days, January 17-19 inclusive. Most complete arrangements had been made in the way of a set of uniform galvanized-zinc coops, sufficient to accommodate all exhibits. The floor space is large, and the building was comfortably heated, so that both visitors and exhibitors had nothing to grumble at. The attendance was not as large as the character and variety of the exhibition deserved, perhaps on account of the Dog Show having been held only the week previous. As far as the exhibits were concerned, however, there was little room for improvement. The prize list included classes for cock and hen and for cockerels and pullets in thirty-five varieties, three classes for geese, four for ducks, and two for turkeys, besides five classes for breeding pens. There were also prizes for seventeen classes of pigeons for both cock and hen, and prizes for rabbits and canaries. There was a class for dressed geese, turkeys, ducks, and chickens. In addition to this comprehensive offering of prizes, there were thirty-three special prizes donated by the citizens of Peterboro.

The judging was in the hands of Mr. Daniels, and it was no light task. He declared the dressed poultry exhibit to be ahead of that in Toronto. There were Toronto winners in competition in some of the live classes, and local fanciers feel some pride in keeping many of the awards near home. Considerable interest has risen in this neighborhood lately in poultry. The energy of the local executive has secured the exhibition of the Western Association for Peterboro next year.

A perceptible relative increase in table fowl over the special laying classes might be called attention to. As far as numbers were concerned the Plymouth Rocks and Brahmans were most numerous, with Wyandottes, Leghorns, and Minorcas following in the order named. This may be explained by the stiff foreign demand that has lately been established for our fowl through the perfection of transportation facilities.

Considerable business was done with exhibitors in the selling classes. The number of birds exposed, however, was not very large.



EXHIBITORS AT THE GALT POULTRY SHOW, JANUARY, 1899.

weeks yet, but that of pruning can be gone on with at pleasure. In all probability this will have to be somewhat heavily done, more for the purpose of correcting the results of years of neglect than that of making the trees bear. The latter result will come as a matter of consequence after the trees will have overcome the severe shock. Where it is necessary to remove large limbs the wounds should be painted to prevent checking and bleeding. The effort must be in the direction of producing new and fresh wood for fruit bearing, and to trim the top sufficiently to admit the sunlight and air, and to allow the fruit to develop to something like perfection of size and quality. When the new wood is once formed and the tree has re-established its equilibrium, fruit-bearing may be looked for, if other conditions are right. Among these other conditions must be the absence of insect and fungous infestations, which can be overcome only by dislodging eggs, nests and insects, by removing the rough outer bark, and by thorough applications of insecticides and fungicides at the proper seasons. A liberal dressing of wood ashes to the trees and the land will have an excellent effect on both the trees and the fruit produced.

POULTRY.

Cut Bone vs. Animal Meal for Egg Production.

Animal meal and cut green bone each have their advocates for egg production, and to arrive at a conclusion that may be considered authoritative, Hatch Experiment Station, at Amherst, Mass., conducted a test with these two foods on two lots of fowls selected with utmost care with respect to similar characteristics in the two lots. The trial is re-

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 be 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.]

Legal.

WILL PROPERTY DISPOSED OF BEFORE DEATH.

A father made his will and devised a certain property to his daughter, but subsequently to making the will he conveyed the property by deed to another person and bought another property. The father then died without making another will. Has the daughter any claim on the property which was devised and subsequently sold, or will she be entitled to the property the father purchased afterwards? [The daughter has no claim whatever on the property sold by the father in his lifetime because the will only speaks from the father's death, and at that time the father did not own that property. As to the property the father afterwards purchased, unless the daughter can show that it was purchased to replace the other property and was intended for her in place of the property sold, neither will she be entitled to it, but will only be entitled to her share thereof with the other heirs in case the will does not by its terms otherwise dispose of this property.]

RAILWAY CATTLE GUARDS.

SUBSCRIBER.—A railway company have filled up their open cattle guards and replaced them with bush surface guards and these bush guards are not effective, cattle and horses walk over them. My horses got out on the road and walked over the guard, got on the track, and two of them were killed. Are these guards sufficient in law, and can I compel the company to make good my loss?

[The Railway Act requires the company to maintain "suitable and sufficient cattle guards to prevent cattle and other animals from getting on the railway." We do not know what the "bush surface guards" are, but from your statement they would appear not to be such cattle guards as is contemplated by the statute, which, as stated, must be "sufficient and effective," and this being so, we think you have a good claim against the company for the value of the horses killed, which you can enforce.]

MASTER AND SERVANT.

"If my hired man (who hired by the year) becomes ill, what are his and my legal rights and liabilities?"

[If it is only a temporary illness, unless caused by his own gross carelessness or misconduct, you cannot discharge him, and he is entitled to his wages even though he did not work at all during his illness. If, however, the illness is more than temporary, or a permanent disability to perform his work, you may rescind the agreement, and if you intend to do so you should notify him of your intention promptly, for unless you do so he legally remains your servant and is strictly (in law) entitled to recover his wages for the time he is ill until the agreement is cancelled by you. He cannot be required to make up his off time after the completion of the time contracted for unless he has agreed to do so. It will thus follow, that when your servant is hired for a year or more, and is temporarily ill even a large number of times during the year, and is allowed to return to work even though unable to do his work fully, and you allow the matter to go on without a new arrangement, or without cancelling the old agreement, then you may be called upon to pay his full wages at the end of the term. As to your question about holidays, see the other answer in this department.]

PUBLIC SCHOOL SITE.

A parcel of my land 10 x 16 rods was selected for a school site and the school trustees and myself failed to agree upon the price I asked—\$130—and the value of the growing wheat, and our differences were referred to arbitration under the provisions of the Public School Act, and an award was made fixing the price to be paid to me at \$130, but no mention is made as to the wheat. 1. Can I compel the trustees to pay for the wheat as well? 2. Must I pay for the deed of the land?

[1. Providing the arbitrators were properly appointed, their award is binding on you, and the price fixed by them is all you can compel the trustees to pay, and it would be assumed the arbitrators valued the land as it is; that is, with the wheat on, and have allowed you for it in the amount awarded. 2. No, you have not to pay for the deed, and, in fact, no deed is necessary, as under the provisions of the statute the trustees obtain the necessary title to the land by registration of the award, and upon tender of payment of the amount fixed by the award to be paid to you, the trustees are entitled to take and use the land for the school purposes.]

MASTER AND SERVANT—SUNDAY WORK.

1. Can a servant engaged for a term of six months absent himself on Sunday without his master's permission? 2. Is the master justified in withholding the wages for Sundays the servant is away?

[1. This question of holidays and Sundays is simply one of contract, and of what is usual and customary, having regard to the kind of work the servant is hired to do. Of course, if the servant hires to work in an office or shop where Sunday work is not contemplated, then the servant is free on that day, and if the servant hires to work a team on a farm, expressly binding himself to teaming

work, then he could only be required to look after his horses on Sunday in a reasonable manner; but if he hires to do general work on a farm, including the necessary chores, milking, etc., then he must perform the usual work on Sundays which is necessary to be done. 2. The master may discharge the servant who refuses to obey his lawful commands, and may then refuse to pay him any wages, and the courts will not assist the servant to get his wages already earned if he has refused to obey the reasonable orders of the master. So of course, in this case the master may withhold the wages for the Sundays on which the servant declined to do his work.]

MASTER AND SERVANT.

SUBSCRIBER, York Co., Ont.:—"1. A man hires for a year to do general work on a farm, he has lost time, 29 days; the majority of the lost time was in a busy season; can he by law compel his master to let him put this time in in winter or any time? 2. A man is hired for a year, and no mention is made of Sundays, has he a right to do a share of the general chores every Sunday by law?"

[1. No. 2. Yes.]

Veterinary.

LOUSINESS.

C. E. P., Hyde, N.-W. T.:—"Could you give me a good recipe for lice on cattle, or a preventive?"

[All kinds of animals and birds, domesticated and wild, are preyed upon by parasites called lice. Cattle are infested by four distinct kinds of the "ugly creepin' blastit wurmins." The cow and other adult cattle suffer in their hind parts from a species of louse known as *haematopinus ani et vulvae*. The fore parts, neck and shoulders, are the special territories and feeding grounds of another variety named *haematopinus eurysternus*. Another genus called *trichodectes scalaris* appear to possess full freedom to wander over, and to subsist upon, any part of the skin's surface. There is also another kind termed *haematopinus vituli*, found upon calves. Anything that tends to debilitate and impoverish the system favors the multiplication and development of lice—such as insufficient and innutritious food; filthy, dark, badly-ventilated stables; cattle too closely huddled together, affording insufficient air space, which should be at least 450 cubic feet per head for adult cattle. A careful observation of the reverse of the conditions mentioned above will very materially prevent lousiness among all kinds of farm stock. A safe and generally effectual application for lousiness, either in horses or cattle, is the following: Powdered stavesacre seed, four ounces; English soft soap, eight ounces; put in six quarts of boiling water, boil down to four quarts and add creolin, two ounces; mix well and apply, when sufficiently cold, with smart friction, to the lousy parts. Take crude carbolic acid, four ounces to each gallon of water, and swab all the woodwork in the interior of the stable. Repeat the treatment once, and twice if deemed necessary. W. A. DUNBAR, V. S., Winnipeg.

NOTE.—We have found a dilution in water of good sheep dip a very effectual and easily applied remedy.—ED.]

LUXATION OF THE PATELLA OR STIFLE JOINT.

J. P. M., Glengarry Co., Ont.:—"I have a colt about nine months old. It got hurt somehow in the pasture. The stifle cap slips off to the outside, but is very easy to replace, and they seem to go back with a click, but when moved around they slip out again. When he lies down it is sometimes hard for him to get up. We keep him in an open loose box, and let him run out on fine days. I notice that when he trots he is lame. Please let me know how to treat him, and oblige."

[This form of dislocation of the stifle joint is fortunately rare amongst our patients. It generally occurs in young horses, more particularly those that are grazed on very hilly pastures, from the malposition in which the limbs have to be constantly kept owing to the inequality of the ground. The patella is forced outwards, the internal lateral ligament becomes stretched across the internal prominence of the femur and is thus torn or chafed. At first the luxation is only partial: the patella slips in and out of its position with a clicking noise at every step. Very often both patellae are in the same condition. Dislocation of the patella is likely to occur under many other conditions. Sometimes these cases are referred to falls in a slippery stall, or on pavement, concrete, asphalt, etc. When the luxation is complete the internal lateral ligament must be ruptured through its whole thickness, and the patella slips outward. If the dislocation has been existent for any time the articular surfaces of the trochlea and patella become worn and an abscess may form in the true joint. A restoration of the animal to usefulness will be now a matter beyond possibility, and if complete rupture of the ligament take place is never restored and cannot be cured. Treatment.—The leg must be kept in a forward position under the body by means of a cord attached to the shoe and fastened to a collar. Get the blacksmith to make a patten shoe, and to the front of the toe a piece projecting outward and upward two inches long welded to it. This will prevent the animal from flexing the leg backwards and cause him to stand firmly on the limb until the ligaments regain some strength. Repeated blisters on the surface of the skin will serve to keep the animal quiet. Do not allow any exercise until quite well, and confine the animal in a narrow stall well secured to the manger to prevent lying down. WM. MOLE, M. R. C. V. S., Toronto.]

SCOURS OR INDIGESTION IN HORSE.

READER:—"I have a driving horse five years old. When on the road he is always loose in the bowels. I clipped him. Since then his hair has grown very fast, but with a very dry appearance. As he physics very badly at times, I always water before feeding. For medicine gave two doses of linseed oil and condition powders, equal parts of sulphur, saltpetre and gentian root; but now he seems no better. What is the trouble, and what is the remedy?"

[The symptoms of frequent evacuations of liquid or semi-liquid stools after and during a ten-mile drive is peculiar to a certain class of horse known as "washy," long-legged, narrow, flat-sided animals, for which little can be done. In that peculiar build of nervous horse, only by strict attention to feeding and a most rigid attention to the animal's water is there any comfort in owning such an animal. They should be watered and fed as long as possible before going on a drive. The evening feed should be the heaviest, and only clear oats fed from a slow-feed manger, water chilled and given before eating, afterwards to be racked up with a small quantity of hay; this, with an occasional feed of peas, dry, uncracked, and mixed with the oats, should constitute the method of feeding. Well clothe the body, and try the following powders: Powdered opium, 1 ounce; subnitrate of bismuth, 2 ounces; bicarbonate of soda, 4 ounces; powdered chincona bark, 1 ounce; charcoal, 2 ounces. If there is much flatulency accompanying the diarrhoea, or the discharges have a very disagreeable odor, alkaline medicines are indicated in this case. Try the following: Sulphate of soda, ½ ounce, alternate with liquor arsenicatis, 2 drams, in the animal's drinking water daily. DR. W. MOLE.]

PARALYSIS.

A. B., Locheil, Ont.:—"I have a cow seven years old, due to calve in March. She is now milking ten months. For the last two winters I have noticed that she has failed in her hind legs, but this winter much worse. The appetite is good. Her feed consisted of bran, roots, and clover hay, and I am now feeding half a gallon of oats morning and night. I have rubbed her legs with some liniment, but to no effect. What is the trouble, and what can be done for her?"

[Paralysis, or loss of power and sensibility, in the hind quarters in the cow is far from uncommon, for it must be remembered that consideration of the animal must be made subservient to profit. The dairy cow must breed every year, and at the same time must furnish a generous flow of milk for at least ten months, and when nature breaks down reasons are sought. If her health is lowered or her life shortened, the question of profit must still hold sway, and she must yield her place to another when disqualified. From your description we are inclined to the opinion that she must have been exposed to some injury—either a blow or fall, strain of the back during a journey over slippery roads, jumping ditches or fences, beasts romping each other, as is often seen in the fields. This disease makes its appearance when the cow gets low in condition and heavy in calf. This will cause mechanical pressure on the spinal cord and paraplegia, as it is termed, when the hind quarters lose their motive power. The symptoms are well described, proving the owner to be a good observer of his animals. The animal should be removed to a loose box and the bowels opened with a brisk purgative. Should the legs swell, as they often do, caused by the pressure of the womb on the blood vessels and lymphatics, this will disappear after calving. Dry her milk as rapidly as possible without risk. Feed on good nutritious food. Pulped roots are to be recommended, so as to keep the bowels free. Keep on with the liniment on loins and back, with daily friction and warm clothing are indicated. Medicines are not of much service, only as aids to digestion. The following may be given: Gentian, powdered, 4 ozs.; ginger, powdered, 4 ozs.; nux vomica, 4 drams. Mix and divide into twelve powders. One night and morning in food. W. MOLE, M. R. C. V. S.]

ROUP IN FOWLS.

J. L., Ontario Co., Ont.:—"I have a flock of hens, some eighty in number, among which there is some kind of disease. Some of them are affected in the eyes. The eyes will swell up and in a short time become closed; a scab will come right over the eye. Some of them are totally blind, others have scabs all over the comb and nose, and even down to the mouth. There are seven of them that have a coating on their tongue and roof of mouth, from which there is a very bad odor. Will you please let me know through your valuable paper what the disease is, its cause and a cure for same, and you will greatly oblige me?"

[The description of the disease corresponds in most particulars to the disease known as "roup," a form of catarrh similar to diphtheria in the human subject, and produced by exposure to damp or drafts of wind while at roost, as described in the letter. There is no doubt it is contagious, and were it possible to me to have access to them I would certainly try the method of anti-toxin inoculation, which has been lately advocated in France and various parts of the continent of Europe. The treatment was fully dealt with in the FARMER'S ADVOCATE of May 2nd, 1898, issue, page 213. I have met with some success with the following medicine, which is worthy of a trial: Aloes Barbadoes, 1 dram; nitrate of potass., 2 drams; quinine powder, 2 drams; gentian, 2 drams; ginger, black pepper and capsic, 1 dram, to be placed in three-grain capsules and given twice a day. DR. W. MOLE.]

RINGWORM ON CATTLE.

J. B. R., Simcoe Co., Ont.:—"Could you or some of your numerous readers inform me what will cure ringworm on cattle; what is the cause, and prevention, if any?"

[Ringworm is the effects of the growth of a fungus in the skin and hair, usually on a calf, but sometimes on older animals. A careful experiment has proved that the spores are active eighteen months after their removal from the skin of a diseased animal, even if exposed to severe frosts for a period during that time. These facts clearly point to the importance of disinfecting quarters where the disease has had a chance of distributing its spores. The disease would be greatly circumscribed in its ravages were all such seats of its infection thoroughly cleansed and disinfected with hot lime wash after a thorough application of one or other of the disinfecting fluids now on the market.

When an animal is affected the most successful treatment is to cause active inflammation by the application of a mild irritant, and in our own experience we have found perfect satisfaction from the use of carbolic acid mixed with four times its bulk of sweet or linseed oil, applied three times at intervals of four days, after thoroughly cleansing the part of scurf with warm water and soap by vigorous rubbing. The scurf that is removed should be burned. It is also effective to apply iodine ointment thoroughly to the part, or tincture of iodine with a camel's hair brush, first, all around the ring a quarter of an inch outside, then over the entire surface of the ringworm.]

STERILITY IN COW.

H. H., Muskoka, Ont.:—"I have a thoroughbred Ayrshire cow, purchased last July, nine years old, which I understand has bred regularly until this season, but I cannot get her to hold. She comes in season every ten or twelve days, and has done so ever since I bought her. I am quite disappointed in her, as I am starting to form a herd. From the symptoms given do you think anything can be done to bring her around again?"

[Successful fecundation is not always constant, even in cows, and one of the disappointments of a breeder is sterility, temporary or permanent. It is at times difficult to account for this peculiar state of the organization, and unfortunately in this case we have not sufficient symptoms to indicate any specific cause,—they are numerous. Change of climate has in many cases a marked influence on fecundity. It may likewise be due to change of sire. Various diseased conditions of the generative organs, as well as general derangement of the digestive system, may prove antagonistic to fecundity. In some localities these cows are known as "bullers," because they are nearly always disposed to take the bull, but they do not conceive. It may also be that the cow is suffering from the disease known as leucorrhoe, due to a chronic inflammation of the womb, vagina, or both. This may be the result of an injury sustained in calving or retention of the placental membrane. For a remedy follow the instruction laid down in our January 2nd number in answer to W. J. T. DR. WM. MOLE.]

SUBSCRIBER, Lambton Co., Ont.:—"We have about a dozen young pigs that seem to be growing well, but some of them when fed will start to eat and stagger back and roll over on their backs as if in a fit. We feed them shorts and milk twice a day, and mangels and corn once a day."

[We have known similar cases, and it is difficult to determine what is the cause and why these spells come on only when the pigs take the first mouthful of their food. As we have never known pigs affected in this way in summer when they have access to the ground, we suspect they need a substitute such as charcoal or ashes, which should be placed in a low box in the pen, and we would advise letting the pigs run out for an hour, more or less, on fine days, where they can get at the earth, if possible. The next best thing is to carry earth to them from the root-house or wherever it can be got. We would also advise warming their milk or swill, either by placing it on the stove or by adding hot water. We would advise mixing a little cut clover with their rations, and if this was steamed by pouring hot water on it and allowing to stand in a covered bucket for an hour, it would be all the better. It is well to feed lightly and change the conditions till the youngsters get balanced and going on again.]

CURE FOR SCOUR IN CALVES.

SUBSCRIBER, York Co., Ont.:—"Some three or four years ago there appeared in the FARMER'S ADVOCATE a remedy for scour in calves. I found the remedy a good one, but have lost the recipe. Will you kindly repeat the treatment?"

[We presume the remedy referred to was that published in April 1st, 1895, issue, page 139. The cause of scouring is there shown to be due to its getting improper feed when quite young. A newly-born calf should get a moderate quantity of the first milk of its dam, as it has a laxative action which is necessary to its proper commencement of life. If the calf is deprived of this, constipation is frequently the first indication of a disordered stomach and bowels. This can be prevented by allowing the newly-born calf to partake of the first three days' milk of its mother. If after that time it shows indications of the trouble, the food must be looked to, and it usually answers well to give a dose of castor oil, say two ounces, and reduce the quantity of milk to two quarts given warm, three times a day, and add about a pint of linseed gruel and a wineglass of lime water. To restore the

natural secretions of the intestines an antacid and carminative should be given. Carbonate of potash, one dram; powdered rhubarb, one dram; give in a little peppermint water daily.]

Miscellaneous.

FEED VALUES—EFFECT OF OATS ON MILK YIELD—OAT CHOP AND ROOTS FOR YOUNG PIGS—VENTILATING STABLES, ETC.

SUBSCRIBER, Simcoe Co., Ont.:—"Please tell me the feeding value of all the different grains, also wheat and oat bran. I see by a report of G. E. Day's in the ADVOCATE some months ago that corn is very rich in fat. I always thought peas were ahead of corn in that respect. 2. Can you tell me what would be the best balanced grain ration for fattening steers that I would wish to feed till May? I have plenty of oats, bran, and corn, with coarse feed, which consists of roots and chaff and a few peas for finishing. 3. Does bran not form nearly a balanced ration for growing stock? 4. I have been feeding my fall calves turnips, clover hay, and oat chop, along with skim milk; they do not seem to be doing very well. Is this not a good ration for growing calves? 5. What would be the best feed for calves just weaning? I want the skim milk for young pigs. 6. Have oats any tendency to stop the milk flow in cows or any other animal, or will they cause sheep to lose their wool early? 7. I have been feeding my young pigs oat chop and roots, but they do not seem to thrive well. Are they not a good feed for pigs. Would bran be better? 8. What is the value of pig manure as compared with other kinds? Is it worth saving, and would it not enrich it use to plenty of straw? 9. Would whitewashing the sleepers above root house prevent the dampness of roots from destroying them? 10. I see an article in the ADVOCATE of June 15th, 1898, on ventilating stables, strongly condemns low roof. What is the idea of having the ventilator divided into two part? My cow stable is 55 x 36 ft. x 6 ft. 6 in., and is calculated to hold 25 head. What height should the ceiling be in order to ventilate properly? 11. How many crosses does it take from an ordinary grade cow till her offspring will become thoroughbred? 12. What is the value of black barley compared with white barley? Is it better feed? Has there ever been any feeding tests made with it?"

[It is quite impossible to give the feeding values of various foods. The nearest approach to it is to give the average digestible protein, carbohydrates, and fats, etc., which the foods contain. We would refer "Subscriber" to a summary of Prof. Jordan's address on this subject, given at the convention of the Cheese and Butter Association of Western Ontario, as reported in this issue. Peas contain 1.7 per cent. of digestible fat, and corn 4.8 per cent. It might be remarked here that the digestive apparatus of an animal has power to convert carbohydrates and protein into animal fat. 2. We presume the steers are already in medium flesh and thriving well, so that even a moderately narrow ration, say 1 of protein to 6 of carbohydrates, would not suffer any material loss. The chaff, if of wheat and oat straw, is low in protein, about 1 to 23 of carbohydrates, and if of peas, 1 to 9, or clover, 1 to 4. Oats have a nutritive ratio of 1 to 6; corn, 1 to 8.6, and bran, 1 to 5.6, according to Prof. Stewart in his "Feeding Animals." These foods contain practically the same proportions of digestible to non-digestible nutrients, so that equal parts by weight would form practically a well-balanced ration. The chaff, however, which would form a considerable proportion of the ration, would supply, if of wheat or oats, an extra proportion of carbohydrates, which could well be met by increasing the proportion of oats and bran, or, better still, by adding a few peas or oil cake to the ration. The feeding value of the roots is not so much dependent upon the dry matter contained as upon the value of the succulence it gives to the whole ration, so that their composition need not be considered in formulating a ration. We would say give a bushel and a half of roots to each beast per day, and if they were pulped and mixed with the chaff twelve hours before feeding, all the better. From the fact that well-finished beef commands the highest price per pound, liberal feeding up to a certain point is advisable. To go beyond that the animals would waste food. We would, therefore, give them all the mixed roots and chaff they would consume in about two hours three times a day. If they showed an inclination to scour, reduce the proportion of roots, because a scouring animal is wasting food. In addition to this, commence with 4 lbs. per day of mixed grain as mentioned above, increased to 6 lbs. in one month, and to 8 lbs. by the end of March. The last month the daily grain ration may go to 9 or 10 lbs. per day, and consist of from one-third to a half of pea meal. It is impossible to lay down fixed rules for others in feeding stock of any kind. A feeder has to exercise judgment in dealing with his stock, and to give each animal the peculiar care and attention he sees it demands. 3. While bran contains somewhat nearly the correct proportions of nutrients required for growing, fattening or milking stock, no one would think of feeding it alone, and whatever was fed with it would have an influence upon the value of the ration. Circumstances modify the value of all foods. 4. If the calves are getting their skim milk warm, and the clover and other foods mentioned are of good quality, they should thrive well. It may be advisable to add a little corn meal to the oat chop. 5. The age of the calves to be weaned from milk is not mentioned. If six months old they should do well with the

other foods mentioned above. If much younger we would hesitate to take away all the milk, except we substitute oil-cake meal porridge or commercial calf-meal porridge. 6. No. 7. Oats contain too much indigestible fiber for pigs, especially young ones, and if used should be ground very fine, so as to pulverize the shells. Bran is also too coarse and tough for young pigs. Bran mixed with pea chop or corn chop will answer better. 8. Pig manure contains about ten per cent. less nitrogen, and about the same per cent. of ash, as is found in the excreta of fattening cattle or fattening sheep. Adding straw reduces the relative manurial value of any animal manure, but serves an excellent purpose in absorbing the liquid manure. 9. If the roots are not allowed to heat unduly and proper ventilation is provided, there should be very little moisture on the ceiling of the root house. If grease were incorporated with the whitewash, it would tend to preserve the sleepers and floor above. 10. A double ventilator is claimed to have the advantage of producing an up and down draft, according to the direction of the wind. It is generally considered that the ceiling of a cattle stable should be not less than eight feet high. 11. No number of crosses will render an animal pure-bred. A cow is not eligible for registration unless she traces on the side of both sire and dam to imported registered ancestry. 12. We are not aware of any feeding tests having been conducted with black hull-less barley as compared with ordinary malting barley. Pound for pound, we do not presume there is much difference.]

REGISTRATION OF SHORTHORNS.

SUBSCRIBER.—"Would you oblige by publishing in next issue the cost of recording pure-bred Shorthorns in the Dominion Herd Book, and the membership fee in the Association?"

[Members pay an entrance fee of two dollars, and subsequently an annual subscription of two dollars, which annual subscription shall be due and payable on the first of January of each year. All calves dropped after January 1st, 1888, shall be registered within twenty-four months of birth, and if not so registered, enlarged fees shall be charged for their registration. The charges for registration are as follows:

To members, registration and certificate, 75 cents for each animal; non-members, registration and certificate, \$1.25; over age, to members (in all cases a certificate goes with registration), \$1.00; over age, to non-members, \$1.75; change of ownership, 25 cents; duplicate certificate, 25 cents; back volumes Herd Books, \$2.00 each. To entitle an animal to registry the sire and dam must first be registered.

HENRY WADE, Secretary.

Parliament Buildings, Toronto.]

REMEDY FOR LONG CHURNING.

To the Editor FARMER'S ADVOCATE:

SIR,—I notice in the January 2nd number of your paper that Messrs. Black and McDonald have had "Long Churning and No Butter," and wish to know the cause of it. I think the difficulty lies in the treatment of the cream rather than in the rations of the cows, or the length of time in milk. Two years ago I had the same trouble. I found by careful observation and experience that in winter the cream should be ripened quickly. My method is to keep the cream in a tin can, submerged in water at a temperature of 42° Fahr. Twenty-four hours before churning it is brought to a temperature of 80° Fahr. by being placed in a vessel of hot water. In the meantime I add about 12 per cent. of a starter in the form of sour buttermilk, saved from the previous churning, and stir while heating. It is kept at this temperature for a short time, and then set in a warm place. When ready to churn it is brought up to 68°, not higher than 70°, and the butter comes in from 20 to 30 minutes. I churn but once a week. E. C. BLIGH.

King's County.

CHURN AT A HIGH TEMPERATURE.

To the Editor FARMER'S ADVOCATE:

SIR,—I will give you a little experience on churning, which might be of use to someone. We are making quite a lot of butter, and it got so we could not get butter at all. One night we churned for four hours, and I guess we might have churned for twenty-four hours and not got it. We let it stand and got some stuff. We warmed it up to 74°, and the stuff we got was not good butter, so we warmed it up to 80°, and have had no more trouble; it came in about 20 minutes. We have churned three times since we heated up to 80°, and no more trouble and good butter. If this will be of use to anybody let them know it. We should all be free to let others have the benefit of our experience. JAMES MILLAR.

Brockville Co., Ont.

CALVES EATING MANGERS.

GEO. HENDERSON, Wellington Co., Ont.:—"My calves, which were in the stable all summer, quit eating and started at the manglers. They have stopped now, but do not eat well yet and are not thriving well. What was wrong with them? What should I give them?"

[It is not uncommon for cattle, especially if confined indoors for a length of time, to acquire an abnormal appetite or desire for mineral matter. Sometimes it shows itself in cows chewing bones. It is possible that it is salt the calves need, but if they have had sufficient of that it would be well to mix hardwood ashes with the salt to the extent of about one-quarter of the bulk.]

MARKETS.

FARM GOSSIP.

Kent Co., Ont.

Since the two weeks' sleighing the first part of December we have had a peculiar winter, consisting of a mixture of snowfuries, heavy rains, keen frosts, and warm weather. This keeps our roads in a fearful condition, a state for which our highways are justly noted.

The mumps which were so prevalent during the fall have given away to la grippe, which is almost epidemic. It has proved fatal in several instances, usually where the patient was advanced in years.

The grain market remains about stationary. Wheat, 68c.; oats, 28c.; corn, 35c. and 36c.; beans, 70c.; bran, \$14; shorts, \$16 per ton.

Kent and Essex are rapidly becoming great hog producing counties. Enormous quantities of dressed pork and live hogs have been delivered all fall and winter, but the supply seems inexhaustible. Live hogs, \$3.85 to \$4; dressed, \$4.90 to \$5.

Very little doing in beef cattle; the fact is, very few are fattening cattle on account of the high price of grain and stock.

Butter is lower; fresh prints, 16c.; creamery, 22c.; fresh eggs, 20c. per dozen, and potatoes, 75c. and 85c. per bag.

Our creamery is gradually working up a splendid trade. They are now skimming about 7,000 pounds of milk per day, and the butter supply is not equal to the demand.

The tobacco producers have shown commendable pluck and energy in their fight against the tobacco trust. They formed an association, and sent one of their most influential members, with samples, etc., to the leading manufacturers of Great Britain and Europe.

Word has since been received that an agent representing a large English firm is coming over at once with instructions to buy at least 2,000,000 pounds, for which they are willing to pay at least 10 cents per pound, if as good as the sample. It is needless to say the growers are jubilant.

W. A. McG.

Dairy Imports from Canada.

The steamship Cythiana, due in Manchester about the end of this week, is bringing to a local firm of American and Colonial produce merchants 2,700 boxes of cheese and 1,000 boxes of butter, shipped at Montreal. This firm has arranged for weekly arrivals of Canadian butter. Nearly 1,600 cases of butter were on board the Straits of Menai, another steamer from Montreal, which has arrived during the week. Taking these facts in conjunction with the cheese, fruit, and eggs landed by the Manchester Trader last week, it is evident that the efforts of the Canadian Government to promote the demand in this city for Dominion produce, especially dairy produce, are succeeding.

TRADE WITH CANADA.

There are abundant signs on all hands that people in Canada are being made fully aware of the value of Manchester as a distributing center for their produce. The Executive of the European Exporters' Association are rapidly forming satisfactory connections, and are arranging for a thoroughly representative and influential local board in this district.

Toronto Markets.

Cables came unexpectedly strong, offerings generally fair, but export cattle not up to the standard. We can only regard the transaction and regret the cause. Seven carloads of export cattle in bond from Chicago were fed in the yards here and shipped with four loads of ours, and consigned as Canadian cattle to the Old Country. The question is why is this done? We answer that although Canadian cattle have a preference in the Old Country market, we do not produce such cattle as this class to export, and that is the reason our buyers have to visit Chicago for the superior grades.

Export Cattle.—Choice heavy export cattle, \$4.40 to \$4.75 per cwt. Light exporters sold at \$4.25 to \$4.50 per cwt. Messrs. Brown & Snell bought two carloads of export cattle at \$4.50 per cwt. Mr. J. H. Brown, Kerwood, sold 23 export, 1,350 pounds each, at \$4.50 per cwt.; one load of butchers' cattle, cows and heifers, 1,070 pounds average, at \$3 per head, and was wishing someone would give him a good kick, as this was \$3 per head less than was offered last week for the same load. Mr. D. O. Leary purchased 18 export cattle, 1,290 pounds each, at \$4.75 per cwt.

Butchers' Cattle.—Choice picked lots of cattle weighing from 1,050 to 1,150 pounds each sold at \$3.85 to \$4.20. Montreal buyers in full force, the recent advance in the price of meat for home consumption caused quite a flutter. Drovers are expecting good times this summer, as there is no doubt a shortage of good cattle. Mr. Alex. Levack bought twenty-one at \$3.25 to \$4.12 per cwt. Mr. Wm. Booth bought a carload of picked butchers' cattle at \$4.10 to \$4.50, equal to export; not so heavy.

Bulls.—Choice heavy bulls, suitable for export, sold at \$3.50 to \$3.85 per cwt. Light weight at \$3.

Stockers. Trade in stockers for Buffalo was brisk, with prices about 10c. firmer, at \$3.40 to \$3.70 for choice picked lots. Messrs. Crawford & Co. bought four loads of stockers at \$3.25 to \$3.40 per cwt.

Feeders.—Heavy feeders in good demand, weighing 1,100 pounds each, are worth from \$3.60 to \$3.80 per cwt.

Sheep.—About 400 on offer; sold at \$3.35 for ewes, and at \$2.50 to \$2.75 per cwt. for bucks.

Lambs.—In good demand, prices advancing at \$4.30 to \$4.40 per cwt. Mr. Wm. Levack shipped two double decks of sheep for export.

Cattle.—Very few on offer; prices are firmer at from \$3 to \$8 per head.

Milk Cows.—The weather seems to influence this trade continually; after a cold snap or any inclement weather a large number of cows are wanted. To-day only 10 on the market; sold at \$25 to \$35 per head.

Hogs.—Deliveries light; prices showing a tendency to fall; best selections, weighing 160 to 200 lbs., at \$4.25 to \$4.37 per cwt. Light hogs, middle weight, \$4 to \$4.20 per cwt. Thick fat of all kinds, \$3.75 per cwt. Corn-fed hogs!—was the remark of our largest packers—we don't want them at any price. We have for a considerable time been educating our customers to a good, firm, sweet-eating bacon and will not risk our reputation on such hogs again. What price will you offer for them? \$3.73, and call at that. Enquiring from one of our Western buyers, we asked the reason why corn was being again fed to such a large extent. He stated that on account of Canadian barley and peas being scarce and dear in price that the farmers were purchasing and feeding American corn. This was one reason why so many hogs were too fat. Mr. Harris requests us to say that if the farmers wish to reduce Canadian hogs to American prices this is the most sure method of achieving this result. We give one transaction, to show the difference in price, that came under our notice. Mr. John Green, Davisville, had one car of 90 hogs. Out of this load, 20 thick fat, corn-fed, \$3.75; 30 light fat, \$4.25; 40 select bacon hogs, \$4.62. But the former are corn-fed the latter must be also, was the remark of Mr. Drover. Mr. Harris rejoined: I am not certain that any are corn-fed, but I will be quite sure about some of them. This caused a good-sized kick, but Mr. Harris remained firm, and the drover went away determined not to buy any more thick fat at \$4 per cwt. We give this as one of the reasons that farmers are holding their hogs back for a rise on the market. We also give this as our forecast. The rise in the far-distant future by present indications, when dressed hogs can be purchased at \$5.25 per cwt., and on some occasions less. What does this mean? Live hogs at farm, \$1; dressed hogs at farm, \$3.50 per cwt.—time, trouble of dressing, hauling to market, commission on sale, out-of-pocket expenses, etc.

Dressed Hogs.—Packers are critical and buying cautiously. Hogs are being offered freely. Farmers' loads are quoted at

from \$5 to \$5.25 for choice; ear lots are quoted at \$4.55 to \$4.75 for heavy fats; choice light weights, \$5 per cwt. As soon as prices get to a dead level we are sure to get a good deal of kicking. Talk is cheap, and rings, combines, hold-ups, etc., are the main topic of comment in the hog business to-day. This paper warned the farmers last August of what to expect this month; but, of course, individual farmers, who visit the market once or twice a year, can always indicate how the price will go—sometimes according to the rise and fall of the moon, whether she is on her back or points downward—so that, according to this presage, we ought to get good prices next week. But we shall not.

Hay.—About 40 loads on offer sold at \$8 to \$9.50 for timothy, and at \$5.50 to \$7 for clover per ton.

Straw.—Seven loads of straw sold at \$6 to \$7.50 per ton.

Grain Market.—Business on the street was quite brisk to-day—2,000 bushels of grain delivered: 200 bushels of red wheat at 72c. per bushel, an advance of half a cent; white, 73c. per bushel; goose, 71c. to 72c. per bushel.

Peas.—Prices steady, advancing; quality not good; sound peas free from bugs, etc., at 62c. per bushel; small and wormy, at any price down to 40c. per bushel.

Barley.—A large quantity of discolored barley on offer, unfit for malting, sold down to 45c. per bushel; fair to good samples, 48c. per bushel.

Oats.—Were a shade firmer; 800 bushels sold at 33c. to 34c. per bushel.

Butter.—Stock not coming forward as plentiful as in the last few weeks. Prices no higher, but the market is in better shape for a rise. Dairy tub, poor to medium, 11c. to 12c.; choice, 13c. to 14c. per lb.; small dairy prints, 15c. to 16c. per lb.; creamery, 20c. to 21c. per lb.

Eggs are dull; price easier; fresh stock is coming along freely for this time of year. Should the moderate weather continue prices are sure to continue to decline, but a few weeks of real cold weather would cut off supplies. Prices are from 16c. to 21c. and 22c. per dozen.

Cheese.—There is very little doing in cheese. Buyers are offering less than sellers are willing to accept. Market steady; choice stocks sell at from 94c. to 100c. per lb.

Hides.—Market quiet in all lines; dealers quote choice steers at 9c. per lb.; cows, at 8c. per lb.; lambskins and pelts are quoted at 75c. and 80c. for choice; calfskins, 11c. per lb.; wool, unwashed, at 10c.

Poultry.—In good demand; choice stocks scarce; will bring top price; chickens per pair at 25c. to 40c. and 50c.

Jan. 26, 1898.

Chatty Stock Letter from Chicago.

FROM OUR OWN CORRESPONDENT.

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

Table with columns: Beef cattle, Hogs, Sheep, and various weight categories. It compares 'Extreme prices now', 'Two weeks ago', and 'Top Prices' for the years 1898 and 1897.

Beef cattle, considering quality, are selling the highest in a long time. The top price is only \$6.10, but the cattle are at least 50c. per 100 lbs. from being top cattle. The following shows what kind of cattle are being sold at the top prices: Sixteen head of 1,545-lb. cattle sold at \$6. Eight head were grade Short-horns, and eight head were branded western Whitefaces bought here last fall. These cattle were on full feed exactly 120 days. Buyers are complaining bitterly of their inability to get good ripe cattle, and they are quite uneasy about the prospects for future supplies. For the first three weeks in January cattle receipts at Chicago, Kansas City, Omaha and St. Louis show a decrease of 55,000 from a year ago. Top and average beef steer prices for January so far, compared with some other years, were as follows:

Table showing Average Prices and Top Prices for various years from 1899 to 1884, comparing prices for different weight categories.

Recent cattle sales included northern corn-fed Texas cattle, 822 to 1,250 lbs., \$4.20 to \$4.95; distillery-fed Texans, 1,077 to 1,140 lbs., \$5 to \$5.15; meal-fed Texas steers, 865 to 1,254 lbs., \$5.80 to \$5.25. There are more Texas cattle being marketed than a year ago, and this fact emphasizes the shortage in total cattle receipts.

More crippled hogs are appearing than usual, and some think the rush to fatten them as early as possible is largely to blame. Young hogs are not getting enough of the bone and muscle-making grains. Western hog packing November 1st to January 15th, compared with the corresponding time a year ago, showed, according to the Cincinnati Price Current, a gain of 1,250,000 head. Of this increase 330,000 was at Chicago alone. The hog market seems to have a good deal of backbone in it again, and farmers seem to have a lot of confidence.

The Colorado lamb feeders are not the least bit happy at the way the market opens for their winter's feeding. They are losing a lot of money, and are inclined to hold on for better results. It remains to be seen whether the general good times will be felt in the lamb market. The trouble is that there is a big discrimination against the lambs of good weight, say 90 to 100 lbs., as buyers say they cannot make the retail butchers pay much more for them than for sheep; in fact, the people are so lacking in knowledge of such matters that they insist that heavy meat from a lamb is mutton, and would apparently sooner buy poorer meat from a light sheep. January sheep and lamb receipts will be about the largest on record. Prices of sheep have held up remarkably well, though lambs, on account of being so abundant, have declined quite seriously. Last January \$4.85 was paid for extra good sheep, while \$4.25 buys very good ones now, though good yearlings, which are usually included under the classification of "sheep" at other markets, have sold at \$4.65. In January, 1897, top sheep sold at \$4.50; 1896, \$3.50; 1895, \$4. In 1894 the largest and the lowest in twenty years; while the highest January top in that period was \$6.25, in 1890. Lamb prices have shown about the same variation as sheep in the years mentioned, with a range of 75c. to \$1 higher than sheep. Top lambs last January (1898) sold at \$6.00; in January, 1897, \$5.75; 1896, \$5; 1895, \$4.90.

W. J. YOUNG, St. Paul, Minn.:—"Perfection is seldom attained in anything, but I think in the production of FARMER'S ADVOCATE you have come very close to it. I wish to congratulate you on the beauty and perfection of this number."

December 29th, 1898.



AN AMERICAN GIRL IN LONDON.

BY SARA JEANNETTE DUNCAN.

(Continued from page 4.)

So we went with the rest and had some supper, and in the anxious interval during which Lady Torquillin and I occupied a position in the doorway, and Mr. Mafferton reconnoitered for one of the little round tables, I discovered what had been puzzling me so about the house ever since I had come into it. Except for the people and the flower decorations and a few chairs, it was absolutely empty. The people furnished it, so to speak, moving about, in the brilliancy of their dresses and diamonds and the variety of their manners, to such an extent that I had not been able to particularize before what I felt was lacking to this ball.

"Has Lady Powderby just moved in?" I asked, as we sat down around two bottles of champagne, a lot of things glaces, a triple arrangement of knives and forks, and a pyramid of appetitic strawberries.

"Lady Powderby doesn't live here," Lady Torquillin said. "No, Charlie, thank you. Sweets for you young people, if you like—savories for me!"

And my friend explained to me that Lady Powderby was "at home" at this particular address only for this particular evening, and had probably paid a good many guineas house rent for the night; after which I tried in vain to feel a sense of personal gratitude for my strawberries, which I was not privileged even to eat with my hostess' fork—though, of course, I knew that this was mere sentiment, and that practically I was as much indebted to Lady Powderby for her strawberries as if she had grown them herself.

During supper, while Lady Torquillin was telling Mr. Mafferton how much we had enjoyed the "Opening," and how kind his cousin had been, I looked round. And I was struck, much struck, with the thorough businesslike concentration and singleness of purpose that I saw about me. The people did not seem much acquainted, except by twos and threes, and ignored each other, for the most part, in a calm, high-level way that was really educating to see. But they were not without a common sentiment and a common aim. They had all come to a ball, where it devolved upon them to dance and sup and dance again—to dance and sup as often as possible, and to the greatest possible advantage.

We struggled upstairs, and on the first landing met a lady relation of our hostess, with whom Lady Torquillin shook hands.

"You'll never find her!" said this relation, referring to Lady Powderby. "The Dyngelays and the Porterhouses and the Bangly Coffins have all come out and gone without seeing her!"

But I may just state here that we did find her, toward morning, in time to say good-bye.

When I say that the floor of Lady Powderby's (temporary) ball-room was full, I do not adequately express the fact. It was replete—it ran over, if that is not too impulsive an expression for the movement of the ladies and gentlemen who were twirling round each other upon the floor, all in one direction, to the music. With the exception of two or three couples, whose excited gyrations seemed quite tipsy by contrast, the ball upstairs was going on with the same profound and determined action as the ball downstairs. I noticed the same universal look of concentration, the same firm or nervous intention of properly discharging the responsibilities of the evening and the numbers of the programme on the face of the sweet, fresh debutante, steadily getting pinker; of the middle-aged military man, dancing like a disjointed foot-rule; of the stout old lady in crimson silk, very low in the neck, who sat against the wall.

Mr. Mafferton asked me for number seven and nine and eleven—all waltzes. I knew he would be obliged to, out of politeness to Lady Torquillin, who had got past dancing herself; but I had been dreading it all the time I spent in watching the other men go round while Mr. Mafferton sought for a chair for her. So I suggested that we should try number seven and see how about my not having danced, and saying something weakly about my not having danced for so long, and feeling absolutely certain that I should not be able to acquit myself with the erectness—to speak of nothing else—that seemed to be imperative at Lady Powderby's ball.

Mr. Mafferton and I started—he with confidence, I with indecision. You can make the same step with a pair of scissors as Mr. Mafferton made. I did it afterward when I explained to Lady Torquillin how impossible it was that I should have danced nine and eleven with him. Compared with it, I felt that mine was a caper, and the height of impropriety. You will argue from this that they do not go together well, and that is correct. We inserted ourselves into the moving mass and went hopelessly round the Maypole that Mr. Mafferton seemed to have turned into several times. The room began to reel.

"Don't you think we had better reverse?" I asked. "I am getting dizzy, I'm afraid."

Mr. Mafferton stopped instantly, and the room came right again.

"Reverse!" he said. "I don't think I ever heard of it, though we were getting on capitally."

And when I explained to him that reversing meant turning round and going the other way, he declared that it was quite impracticable, that we would knock everybody else over, and that he had never seen it done. After the last argument I did not press the matter. It took very little acquaintance with Mr. Mafferton to know that if he had never seen it done he never would do it.

"We will try going back a bit!" he proposed instead, with the result that after the next four or five turns he began to stalk away from me, going I knew not whither. About four minutes later we went back, at my urgent request, to Lady Torquillin, and Mr. Mafferton told her that we had "hit it off admirably." I think he must have thought we did, because he said something about not having been quite able to catch my step at first in a way that showed entire satisfaction with his later performance. Which was quite natural, for Mr. Mafferton was the kind of person who, so long as he was doing his best himself, would hardly be aware whether anybody else was or not.

I made several other attempts with friends of Lady Torquillin's and Mr. Mafferton's, and a few of them were partially successful, though I generally found it advisable to sit out the latter part of them. This, when room could be found, was very amusing; and I noticed that it was done all the way up two flights of stairs, and in every other conceivable place that offered two seats contiguous. I was interested to a degree in one person with whom I sat out two or three dances running. He was quite a young man (not over twenty-four or five, I should think), a nephew of Lady Torquillin and an officer in the army, living at Aldershot, very handsome, and wore an eye-glass, which was, however, quite a common distinction. I must tell you more about him again in connection with the day Lady Torquillin and I spent at Aldershot at his invitation, because he really deserves a chapter to himself. But it was he who told me, at Lady Powderby's ball, referring to the solid mass of humanity that packed itself between us and the door, that it was with the greatest difficulty that he finally gained the ball-room.

"Couldn't get in at all at first," said he, "and while I was standing on the outside edge of the pavement a bobby has the confounded impudence to tell me to move along. 'Can't,' says I, 'I'm at the party!'"

I have always been grateful to the Aldershot officer for giving me that story to remember in connection with Lady Powderby's ball, although Mr. Mafferton, when I retailed it, couldn't see that it was in the least amusing.

"Besides," he said, "it's as old as Punch!"

But at the end of the third dance Mr. Mafferton had been sent by Lady Torquillin to look for me, and was annoyed, I have no doubt, by the trouble he had to take to find me. And Mr. Mafferton's sense of humor could never be considered his strong point.

XVI.

A great many other people were going to Aldershot the day we went there—so many that the train, which we were almost too late for, had nowhere two spare seats together. Just at the last minute, after Lady Torquillin had decided that we must travel separately, the guard unlocked the door of a first-class carriage, occupied by three gentlemen alone.

One, who sat opposite to me, was fair, with large blue eyes and an aquiline nose, and a well-defined, clean shaven face, all but his graceful mustache. He was broad-shouldered and tall, and muscular and lean, and he lounged, illuminating his conversation with a sweet and easy smile. He looked very clever, and I think he must have been told all his life that he resembled the Duke of Wellington. The one in the other corner opposite was rosy and round-faced, with twinkling blue eyes and a gray mustache, and he made a comfortable angle with his round person and the wall, crossing his excellent legs. The one on my side, of whom I had necessarily an imperfect view, was very gray, and had a straight nose and a pair of level eyes, rather pink about the edges, and carefully cut whiskers and sloping shoulders.

They began to talk, especially the two opposite, the lean man throwing his remarks and his easy smiles indolently across the valises on the seat between them. He spoke of the traffic in Piccadilly, where a "brute of an omnibus" had taken off a carriage wheel for him the day before. He was of opinion that too many omnibuses were allowed to run through Piccadilly, "a considerable lot" too many. He also found the condition of one or two streets in that neighborhood "disgusting," and was "going to call attention to it." All in cool, high, pleasant, indolent tones.

"What're you goin' to ride to-day?" asked the first. His voice was delightfully refined.

"Haven't a notion. Believe they've got something for me down there. Expect the worst!" which also, for some unknown reason, seemed to amuse them very much.

"You've heard 'bout Pubbelow, down 'eah year befoh last—old Pubbelow—used to command 25th Wangers? A. D. C. wides up t' Pubbelow, an' tells him he's wanted at headquarters immediately. 'That case,' says Pubbelow, 'I'd better walk.' An' he did!" said my *vis-a-vis*.

"Lord!" returned the other. "I hope it won't come to that!"

"It's the last day I'll be able to turn out," he went on ruefully.

"For w'y?"

"Can't get inside my uniform another year."

"Supernatural adipose tissue?"

"Rather. Attended the Levée last week, an' came away black in the face! At one time o' life a man's got to consider his buttons. 'Pon my word, I envy you lean dogs."

He addressed both his neighbor and the pink-eyed man, who took no notice of the pleasantries, but folded his paper the other way and said without looking up that there had been a very disastrous flood in the United States.

"They do everything on a big scale over thayah," remarked the man across from me, genially, "includin' swindles."

The round-faced gentleman's eye kindled with new interest. "Were you let in on those Kakeboygan Limiteds?" he said. "By Jove—abominable! Never knew a cooler thing! Must have scooped in fifty thousand!"

"It was vey painful," said the other, unexcitedly. "By th' way, what'd you think of Little Toledos?"

"Don't know anything about 'em. Bought a few—dare say I've dropped my money."

The talk drifted upon clubs, and the gentlemen expressed their preferences.

"Hear you're up for the Army and Navy!" said the rosy-faced one.

"Ye-es. Beastly bore getting in," returned he of the aquiline nose, dreamily.

"How long?"

"'Bout two years, I believe. I'm up again for the United Service, too. Had a fit of economy in '85—the river in the Tarrantillas snash. You were in that, too, wehnt' you? An' knocked off five o' six o' my clubs. They make no end of a wov about lettin' you in again."

"Well, the Rag's good enough for me, and the Lyric's convenient to take a lady to. They say the Corinthian's the thing to belong to now, though," said the round gentleman, tentatively.

"If you have a taste for actresses," returned the other, with another tender glance at his foot.

Then it appeared, from a remark from the pink-eyed one, that he dined at the Carlton four nights out of seven—stood by the Carlton—hoped he might never enter a better club—never met a cad there in his life. Fairly lived there when he wasn't in Manchester.

"D' you live in Manchester?" drawled the thin gentleman, quite agreeably.

Now, what was there in that to make the pink-eyed one angry? Is Manchester a disreputable place to live in? But he was—as angry as possible. The pink spread all over, under his close-trimmed beard and down behind his collar. He answered in extremely rasping and sub-indignant tones that he had a "place near it," and retired from the conversation.

Then the rotund gentleman stated that there were few better clubs than the Constitutional; and then, what a view you could get from the balconies!

"Tremendous fine view," he said, "I tell you, at night, when the place is lighted up, an' the river in the distance—"

"Moon!" inquired his companion, sweetly.

But the stout gentleman's robust sentiment failed him at this point, and he turned the conversation abruptly to something else—a "house party" somewhere.

"Have you got what they call a pleasant invitation?" the other asked, and the portly one said yes—in fact, he had three, with a smile of great satisfaction.

Just then the train stopped and we all changed cars, and I, rejoined Lady Torquillin, lost my entertaining fellow passengers. I was sorry it stopped at that point, because I particularly wanted to know what a house party and a pleasant invitation were—they seemed to me to be idiomatic, and I had already begun to collect English idioms to take home with me.

Lady Torquillin was unable to tell me anything about the gentlemen from my description of them.

The young officer was at Aldershot Station to meet us, looking quite a different person in his uniform. I can't possibly describe the uniform or you would know the regiment and possibly the officer, if you are acquainted with Aldershot, which he might not like. But I may say, without fear of identifying him, that he wore a red coat and looked very handsome in it—red is such a popular color among officers in England, and so generally becoming. He was a lieutenant, and his name was Oddie Pratte. By the time I found this out, which was afterward, when Mr. Pratte had occasion to write two or three letters to me, which he signed in that way, I had noticed how largely pet names cling to gentlemen in England—not only to young gentlemen in the army, but even to middle-aged family men.

XVII.

"Awful glad you've been able to come!" said Mr. Pratte, leading the way to his dogcart, quite a marked figure, in his broad red shoulders, among the dark-colored crowd at the station. "There's so much going on in the village I was afraid you'd change your mind. Frightful state of funk, I assure you, every time the post came in!"

Mr. Pratte spoke to Lady Torquillin, but looked across at me. We are considerably more simple than this in America. If a gentleman wants to say something polite to you he never thinks of transmitting it through somebody else. I found no occasion for remark until we were well started. Then I made the unavoidable statement that Aldershot seemed to be a pretty place, though I am afraid it did not seriously occur to me that it was.

"Oh, it's a hole of sorts!" remarked Mr. Pratte. "But to see it in its pristine beauty you should be here when it rains. It's adorable then!"

Mr. Pratte went on to say that he was about the only man in the place not on parade. There was some recalcitrant reason for this, which I have forgotten. Lady Torquillin asked him how his mother and sisters were, and he said, "Oh, they were as fit as possible, thanks, according to latest dispatches," which I at once mentally put down as a lovely idiom for use in my next Chicago letter. I wanted, above all things, to convince them at home that I was wasting no time so far as the language was concerned; and I knew they would not understand, which was, of course, an additional pleasure. I would express myself very clearly about it, though, I thought, so as not to suggest epilepsy or anything of that sort.

"That, I suppose, is your jail?" I said with polite interest, as we came in sight of a long building with that simplicity of exterior that always characterizes jails.

Our subaltern gave vent to a suppressed roar.

"What is she saying now?" asked Lady Torquillin, who had not been paying attention.

"She says—oh! I say, auntie, what a score! Miss Wick had just pointed out that building as Aldershot Jail!"

"Isn't it?" said I.

"I'm afraid Miss Wick is pullin' our leg, auntie!"

Now, I was in the back seat, and what could have induced Mr. Pratte to charge me with so unparalleled and impossible a familiarity I couldn't imagine, not being very far advanced in the language at the time, but when Mr. Pratte explained that the buildings I referred to were the officers' quarters, with his own colonel at one end, and—

"Great Scott!" said Mr. Pratte, going off again, "what would the old man say to that?"

I felt too much overcome by my own stupidity to think about it. It was, of course, impossible to mention public buildings again in any connection, and although I spent a long and agreeable day at Aldershot, if you were to ask me whether it had so much as a town pump I couldn't tell you. But I must say that I am not of the opinion that it had. To speak American, it struck me as being rather a one-horse town, though nothing could be nicer than I found it as a military center.

We drove straight out of town to the parade ground, over a road that wound through rugged-looking broken fields, yellow with your wonderful flaming gorse and furze, which struck me as contrasting oddly with the neatness of your landscapes generally. When I remarked upon their uncultivated state Mr. Pratte said, with some loftiness, that military operations were not advantageously conducted in standing corn (meaning wheat), and I decided for the rest of the day to absorb information, as far as possible, without enquiring for it.

We were rather late, and all the best places had been taken up by the dogcarts of other people. They formed an apparently unbroken front—or, more properly, back—wherever we wanted to get in. By some extraordinary means, however, more as a matter of course than anything else (it couldn't have been done in America) Mr. Pratte inserted his dogcart in an extremely advantageous position, and I saw opposite and far off the long double line of soldiers, stretching and wavering as the country dipped and swelled under the sky.

"In a minute," said Mr. Pratte, "you'll hear the 'furious joy.'" And an instant later there came spitting and spitting against the blue, from east to west and from west to east, the chasing white smoke jets of the *feu de joie*. You have a few very good jokes in England.

I met some of the colonels and their wives and daughters after, and noticed with pleasure how military the tone of the entire family was in most cases. It explained itself further when I saw the "quarters" in which one or two of them kept house—very pleasant quarters, where we received most interesting and delightful hospitality. But it would be odd if domesticity in a series of rooms, very square and very similar, with "C. O." painted in black letters over all their doors, did not develop something a little different from the ordinary English lady, with cornices and portieres.

Then came lunch at the mess, at which, as the colonel took care of Lady Torquillin, I had the undivided attention of Mr. Oddie Pratte, which I enjoyed. Mr. Pratte was curious upon the subject of American girls at home. He told me he began to feel himself misinformed about them—seriously and dropping his eyeglass. He would like to know accurately, under a false impression one made such awkward mistakes. Well, for instance, if it were true that they were up to all sorts o' games at home, how was it they were all so deucedly solemn when they came over here? Mr. Pratte hoped I wouldn't be offended—of course he didn't mean that I was solemn, but well, I knew what he meant—I *must* know! And wouldn't I have some more sugar for those strawberries?

"I like crowds of sugar—don't you?" said Mr. Oddie Pratte.

There was tea on the lawn afterward, and bagpipes to the full lung power of three Highlanders at once, walking up and down and beating time on the turf with one foot in a manner that was simply extraordinary, considering the nature of what they were playing, and conversation with more Aldershot ladies, one of whom, I think, I would enjoy my stay in London as much as the American young lady seemed to be doing who was writing about it in the papers. I said I was sure I should.

XVIII.

Poppa's interests in London necessitated his having lawyers there. Messrs. Pink, Pink & Co., in Cheapside. If you know New York you will understand me when I say that I had always thought Cheapside a kind of Bowery, probably full of second-hand clothing-shops and ice-cream parlors—the last place I should think of looking for a respectable firm of solicitors in—especially after cherishing the idea all my life that London lawyers were to be found only in Chancery Lane. But that was Messrs. Pink & Pink's address, and the mistake was one of the large number you have been kind enough to correct for me.

[TO BE CONTINUED.]

THE QUIET HOUR.

"Patient Continuance."

The world is wide in time and tide,
And God is guide; then do not hurry.
That man is blest who does his best
And leaves the rest; then do not worry.
—Dr. Deems.

Pass it By.

There are a great many troubles, and trials, and unpleasant things in this world, enough to keep one in perpetual fret and fever and turmoil, if one will allow oneself to be fretted by them. But many of them are not worth fretting about or caring for: they are of little consequence, and we should pay little regard to them.

A man says something which is not pleasant. If we make trouble about it, he will perhaps repeat what he has said, and say as much more. If we say nothing, that will end it. The best course in such a case is to pass it by, and say nothing. We shall always have trials, but we need not grow peevish, or fretful, or impatient over them. We can bear more than we have borne. We can bear more than we think we can bear. Many a quarrel which is exceeding bitter to-day will to-morrow be lost to view. Next year we shall wonder that we worried or fretted or were disturbed by petty trials that crossed our path. A friend may grow unkind, an enemy may be malicious; never mind, pass it by. Clouds may be dark to-day, but the sunshine will come to-morrow, and the afflictions and trials of the present will pass before the brightness of the days to come.

Bury the troubles that are past; bear the trouble of the present; do not worry about the troubles of the future. Meet each trial as it comes, and in a majority of cases the best course will be to pass it by, and leave it with God.

For we know that he alone hath riches
Who hath proved the greatness of a little;
He alone hath store of heavenly treasure
Whom God loveth as a cheerful giver;
That he only walks in truest freedom
Who can bear his chains without a murmur.
And that he is victor over trouble
Who hath learned the blessedness of yielding,
And possesseth his own soul in patience.

The Things That Are Lovely.

Some very earnest young Christians make a mistake in putting too light a value upon those graces of manner and little courtesies of speech and conduct which might commend their excellent qualities to others, and give them the vantage ground of personal influence. If a merchant has diamonds to sell he does not shut them up in a drawer nor display them in a rough box. He does not say, "Nothing can add to the value of a diamond, and I will not condescend to any tricks to catch admiration or draw customers. If a man really wishes to buy he will come to me."

What he does is to put his jewels upon beds of satin, in cases of velvet; to use every art to display their beauty. He knows very well that people who have never thought seriously of buying may be attracted by the beauty which catches the eye and arrests the attention.

Your Christian principles ought to be rendered so attractive by your personality that those who know you will associate goodness with graciousness.

Bear One Another's Burdens.

Help carry your neighbor's burden,
The way is weary and long;
Let your voice be heard with a cheering word
And little snatches of song.
You never know who may falter,
Or the good that a smile may do,
And the loads you lift make a kind of shift
For your aching shoulders too.

I know your load is so heavy,
We each have all we can bear,
But our backs grow strong in the pressing throng,
If we think of another's care.
And our toil somehow grows lighter
When we share the weight of woe
That quivers and sobs and moans and throbs
Wherever our footsteps go.

Help carry your neighbor's burden,
Although you have one of your own;—
We each have enough, and the road is rough,
To carry it all alone.
Lean hard on the tender Master,
But give of this strength to all,
For the human touch has a virtue, such,
If we feel, we may not fall.

O, if we only lifted the burden
Of the weak with the hand of a friend,
Who knows but the heart that failed it's part
Might struggle on to the end?
Who knows but the debt of our neighbor
Some time we may have to pay,
For the love denied as he tolled beside
Life's rugged, thorny way?

The yoke of the Master is easy,
If we let love carry the load,
And the burden is light, both day and night,
If love is treading the road,
No matter how heavy your sorrow,
A greater one you can see,
And as ye have done to each suffering one
"Ye have done it unto Me."
—E. P. Scabury.

R. W. PHILP, Beresford, Man.:—"With compliments to your management for the splendid Christmas number." Jan. 3, '90.

"Puzzled."

This is another of those self-evident pictures which require no title—for who could doubt which of these three worthies is "puzzled"? The artist has caught to perfection the various expressions. The game is apparently checkers (sometimes called draughts), and one need not ask who is the winner, for were the whole of the figure blotted out and his eye alone visible, that eye would be enough! It says plainly: "Now, where are you? Get out of this little trap if you can!" Yes, we can hear it all, and can likewise imagine the feeling of astonished disgust as the "puzzled" one sees his cherished scheme nipped in the bud by some masterly and unexpected move on the part of his adversary. There is quite a dazed look about him, and I fancy his game is all up. Look at the mere expression of his hands—the one raised to his head in uncertainty, the other on his knee—whilst his triumphant opponent can afford to rest both his hands on his knees and give all his attention to his glance of victory! The interior of this country grocery is also remarkably well drawn, with its "stock" well in view. The proprietor is evidently much interested and cannot resist looking on, and possibly he is no mean checkerite himself. The resting place of that checkerboard looks rather shaky, and as though a little lurch would send things flying; and if it did, what a game of romps with the rolling pieces that (now) sleeping Kitty would have!

Our Library Table.

INTRODUCTORY.

We intend resuming this department in the FARMER'S ADVOCATE, and feel sure that it will be welcomed by our readers. We shall, however, deviate somewhat from the usual form of merely reviewing new books, but shall simply draw attention to suitable books—whether new or old. There are so many beautiful works which are almost unknown, and yet would be gladly welcomed were they prominently brought into notice. In making this addition to our columns our aim is to encourage the reading of good and wholesome stories, essays, etc., by lightly touching on their incidents and merits. We trust that our efforts may be of especial use to those amongst our numerous readers who have not the opportunity of coming across many books, nor of even hearing about them.

"ALL SORTS AND CONDITIONS OF MEN."

"CHILDREN OF GIBBON."

Walter Besant.—

There are not many authors who can grasp a difficult social problem and weave it into a deeply interesting story, but this is just what is done in these two remarkable books. The first named caused much discussion in England, and many of its ideas were followed out, thus much benefiting the poorer classes. In both books the interest centers in a beautiful, wealthy and accomplished girl leaving a home of luxury in order to dwell amongst the very poor, that she may find out for herself where the remedy lies. A pure and sweet love story runs through the whole. Passing remarks can do but scant justice to these books, which should be carefully read.

"THE LILAC SUNBONNET."

S. K. Crockett.—

I fancy that very many have read this charming story, but in case anyone has not, it should be done at once, for a more healthy, breezy or sweeter story never was written. The talented author has drawn the character of Winsome Charteris—the heroine—with a most delicate touch.

"AULD LIGHT IDYLLS."

J. M. Barrie.—

This author's name is now a household word. His "Window in Thrums," "Little Minister," etc., have, doubtless, been read by the majority, but the "Auld Light Idylls" are not, perhaps, so well known. They are beautiful—the mixture of humor and pathos is blended with a master mind. The book forms a series of short stories and sketches, yet with a connecting link.

FELIX.

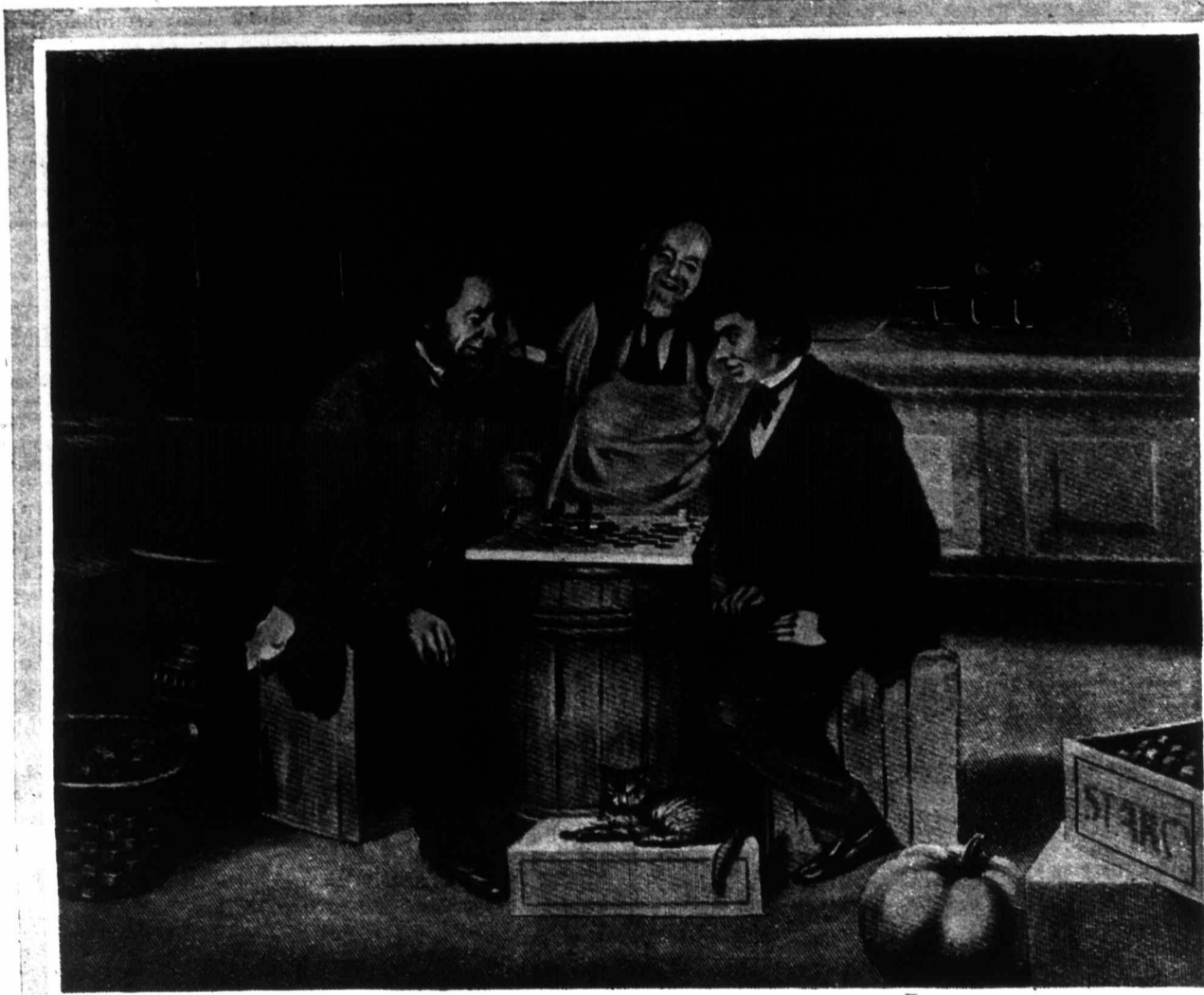
There are some things in the world that one can't understand. One is that you catch a cold without trying; that if you let it run on it stays with you, and if you stop it it goes away.

Winter Care of Plants.

"Life is not mere living, but the enjoyment of health."—*Martial*.

This is as true of plants as of men.

At this time, when lawn and meadow are shrouded in snow and trees are leafless, the home-keeper prizes most highly her shelves and stands of pot plants. For this reason and from a lack of knowledge of plant needs, she often by over-coddling weakens the shrubby sorts, and by lavish watering destroys the health and beauty of the sappy ones among her pets. The very necessary process, watering, is at this season most important. To be most effective, the watering should be done during the morning when the atmosphere of the room is temperate, the water used being tepid, or at about the same degree of heat as the room in which the plants are kept. The use of water which is too cold chills the plants and retards their growth. Too much water by making the earth sour causes the leaves to turn yellow on the plants, despoiling them of their beauty, making them weak and sappy, fit subjects for the attacks of all plant enemies. A common mistake of amateurs is to indiscriminately water every plant each morning, totally regardless of the degree of moisture already in the soil, and of the needs of individual plants. A safe general rule to follow is to water each plant whose top soil is dry and whose pot is dry and rings sharply in answer to the rap of the knuckle. Do not let it pass this stage without water. If by any accident or oversight you have done so, you will notice that the earth in contracting has left the side of the pot. In this case the watering can be effectively done



"PUZZLED."

by submerging the pot in tepid water until the ball of roots is thoroughly moistened. If soil and pot are moist do not give water. Fuchsias and other hard-wooded plants which have been allowed to rest during summer should in fall and early winter have been watered sparingly, and ought now to be putting out fresh foliage and buds. If they are growing rapidly the supply of water should be increased, as much being given as the plant absorbs from day to day. As to the temperature in which fuchsias can be successfully grown, and with them in this connection may be classed all the begonias, roses, pelargoniums, geraniums, mignonette, lantanas, heliotrope, etc., about 60° Fahr. will be found to suit them best. The more hardy class, embracing primulas, carnations, lilies, hyacinths, narcissus (including the Chinese sacred lily), freezias, stocks, wallflowers, auriculas, and violets must not be kept warmer than 50° Fahr. In every case it must be remembered by the flower lover that sunlight should be given plants in direct proportion to heat. Hence, the former class will thrive best and bloom more freely in sunny south and east windows, while the latter will be more vigorous and give larger and more lasting blooms in northerly situations. If the hard-wooded plants, fuchsias, etc., have been resting during early winter, they should, as spring approaches, be brought into sunlight, watered, and treated as above. Plant life requires rest and activity, pure air and moisture, even as they are necessary to animal life.

DORIS.

Recipes.

CREAMED POTATOES.

Peel and slice a quart or more of potatoes, pour boiling water over them and cook twenty or thirty minutes, then pour off the water and put in a cup of thin, sweet cream, add salt to taste, let boil a half minute, and serve at once in a deep dish, adding pepper and bits of butter.

POTATO CHIPS.

Peel, wash and slice lengthwise as thin as possible the desired quantity and dry them thoroughly with a cloth. Put them in a wire basket and sink them in a kettle of boiling lard. Shake gently until they are fried a light brown, when turn them out on cloth and sprinkle with salt. A quantity can be prepared at one time; when needed put a plate full (not heaped) in a hot oven for a few moments and they are ready for the table.

CODFISH BALLS.

Prepare two quarts of potatoes, let them stand in cold water while you shred a pint of good codfish. Put the potatoes and codfish together to boil in hot water till the potatoes are done, when pour off the water and mash very fine, adding a tablespoonful of butter, cup of rich, sweet milk, salt and pepper. An egg or two is an agreeable addition. This mixture can be fried at once in hot lard as croquettes, or when cold made into balls or cakes and fried brown.

POTATO CRUST FOR PORK PIE.

First boil spareribs till well done. Strip the meat from the bones; chop fine, season well with salt, pepper, and sage, mixing a pint of fine cracker or bread crumbs to three pints of meat. Then add a cupful of sweet cream to six good-sized, well-boiled potatoes mashed fine and salted, add flour to roll out as pie crust—handle as little as possible. Put the meat in a deep earthen baker with a cup of the liquor in which it was boiled (excluding fat), cover with the potato crust and bake to a delicate brown.

OYSTER SHORTCAKE.

One pint of flour, 2 rounding teaspoonfuls of baking powder, a scant ½ teaspoonful of salt, a scant ¼ of a cup of butter, and about one cupful of sweet milk. Sift salt and baking powder with the flour and rub in the butter with the hands till fine and smooth. Stir in milk until it is of the light, spongy consistency. Take half of it out onto a well-floured board and with a little handling as possible roll into shape with a well-floured rolling-pin. Moisten the surface with melted butter. Roll out the remainder and lay it on the first layer. Bake until a fine brown, and thoroughly cooked through. When done, tear apart, butter lightly and pour over it the following:

CREAMED OYSTERS.

Wash and carefully pick over a pint of oysters, removing all bits of shell, seaweed, etc. Drain and parboil by placing them in a saucepan without water. Watch closely, and as soon as they are hot turn them. When the edges ruffle and they are well plumped, pour over them a pint of rich cream sauce. Make the sauce as directed for creamed potatoes with the addition of an extra tablespoonful of flour, and instead of a pint of milk use one-half pint of milk and the same amount of sweet cream. Serve as promptly as possible lest the oysters become tough. This dish is as delicious as it is unusual.

BOILED FISH.

Wash and clean fish, tie in a cloth, put in fish kettle and cover with boiling water, boil until cooked, then take out, remove cloth, and lay fish on a platter. Have ready a sauce made of one and a half pints of milk, a good-sized piece of butter, and thicken with flour, cook in double boiler, stirring often, have hard-boiled eggs ready, pour sauce over fish, slice eggs, garnish your dish round with them, and lay slices of egg over fish. Be careful not to have your sauce too thick. A little mustard used with boiled fish makes an improvement.

SALMON SHAPE.

One can of salmon, three eggs, three tablespoonfuls of melted butter, one half cup fine bread crumbs. Drain off the liquid for sauce, mince the fish, rub in the butter and crumbs, season, and lastly add the beaten eggs. Put into a well-buttered pudding dish and bake three-quarters of an hour.



Good King Kriskoss.

King Kriskoss has just come home from the royal races. "I'm growing tired of all this," he said to himself. "We have trials of skill, but how do men use their skill? They make the most of it to cheat each other. We have trials of strength, but the strong impose upon the weak. We have trials of speed, but the swift are not helpful to the slow. I'll have no more such nonsense! I'll have a trial of good deeds, and see if this will set people to thinking in the proper way. I'll give whatever the winner may choose for a prize, and let all try for it, young and old."

So a day was fixed for the trial, and on the next day all the people were to assemble at the palace, and one by one were to be received, to tell the king what good thing they had done.

When this day came, the king heard many queer stories. One said he had searched the kingdom over, and could not find any good to do.

"H'm!" said the king; "if you had mended your garment somewhat, it would have been better than nothing."

Another owned that he had seen many little things to do, but had hurried on all day in search of some great thing worthy to win the prize.

"Stupid!" cried the king; "not to know you could have come to the great only by way of the small."

One declared that he had given half his property to the poor.

"And if I award the prize to you, what is your choice?" asked the king.

"May it please Your Majesty," he said eagerly, "it is my dearest wish to possess your noble castle."

"Which you well know is worth one hundred and ninety-nine times all you have given," said the king. "The prize is not yours."

And so it went on all day. King Kriskoss repented of having offered a prize for good deeds. He saw that they could not be called good deeds that are done for a prize.

Last of all came a little girl that lived with her mother at the foot of Rose-bud lane. And as she stood before the throne, in her plain, clean frock, with her neat hair and honest blue eyes, the king felt sure that she had done better than all the rest but together.

"Well, little daughter," said he, "what good deeds can you claim?"

"May it please Your Majesty," she replied, "I had no time yesterday to do any good deeds."

"No time to do any good deed!" cried the king. "But what did you do all day?"

"Why, my mother was very busy indeed, so I fed the chickens, and picked up chips, and swept the porch, laid the table, and played with the baby to keep him still."

"Good," said the king. "And didn't you wish to try for the prize?"

"O very much," said she. "There was something I wanted very much, but I had to give it up, for I was so busy. And I don't know how to do good deeds anyway."

"But I think you do," said the king, "and I am going to give you the prize. So, my little girl, what is it you want so much?"

At this she blushed and stammered, quite overcome by surprise. It was only because of her great desire that she managed to say, very softly: "May it please Your Majesty, I wanted a little wagon for baby to ride in."

UNCLE TOM'S DEPARTMENT.

MY DEAR NEPHEWS AND NIECES,—

I have not had a real chat with you since last year (just think!) and already it is February. How time flies! We shall have only become accustomed to putting 1899 at the top of our letters when we shall have to change again to 1900. How strange it will seem to begin with 19 instead of the familiar 18 we have used so long. How long? Next year will be the last year of this century—an era of wonderful progress in all branches of science; so wonderful, indeed, that one scarcely knows what to look for next, and the word "impossible" bids fair to become useless: everything seems to be possible.

One of the latest inventions of which I have heard is an electrical apparatus to communicate, either by telegraph or telephone, with moving trains, no matter at what speed they may be traveling. It also automatically warns the engineer of obstructions, open switches, or other dangers ahead. When we can sit in our own homes and converse with people hundreds of miles distant, exactly reproduce a song or conversation years after it has been sung or spoken, and even see through the human body, surely nothing is impossible. The recollection of these wonderful achievements should give us courage when we are ready to despair of overcoming trifling difficulties.

These inventions have not been the result of chance, but have been secured only at the cost of unlimited research, untiring energy, and unwavering perseverance. It is told of Edison that he used to become so absorbed in his work that he forgot everything else, and that on the morning of his wedding day he was busily engrossed in some experiment when a friend entered and said: "Say, Tom, I thought you were to be married to-day." With an exclamation of dismay, Edison arose and said: "By George! so I am! I had quite forgotten." It is right to take an occasional holiday (especially when such events as the above are on the tapis), but if you mean to reach the top in any undertaking you must concentrate all your best energies and apply them to that end; and I advise you never to aim at anything lower than the top. The very fact that "every arrow that flies feels the attraction of earth," instead of deterring us from a lofty aim, should add an incentive to it, lest the earthly attraction should draw us too low.

Many of my boys and girls have become men and women and are filling responsible positions—no position lacks responsibility—in different walks of life. To them I would say, do the very best of which you are capable, make your employers' interests your own, and further them by every honorable means in your power. He who tries to do as little as possible soon finds his services no longer required, while the faithful employee is indispensable and is happy in the consciousness of having done his duty. Young people going out into the world are in danger of being thrown into company of but indifferent reputation. As nothing more accurately portrays one's character than the choice of associates, be careful in the selection of such. Wealth or poverty cannot guide you here, for often "virtue peereth in the meanest habit." A fairly safe rule to follow is never to associate with anyone whom you would not bring as a friend to your mother or sisters. See to it that your own character is such as will admit you to the best society, and avoid whatever might debar you from it. To explain what I mean by "best society" I will quote from a modern writer: "The best society is that in which the virtues are the most shining, which is the most charitable, forgiving, long-suffering and modest . . . that in which there is the least hypocrisy and insincerity of all kinds, which recoils from and blasts artificiality, which is anxious to be all that it is possible to be, and which sternly reprobates all shallow pretense, all coxcombry and foppery, and insists upon simplicity as the infallible characteristic of true worth."

Your loving—UNCLE TOM.

Puzzles.

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

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

1—CANADIAN TOWNS IN CHARADE.

- 1. (a) expresses determination; (b) a pronoun; (c) saint; (d) a village.
2. (a) a tree; (b) to fire; (c) a kind of meat.
3. (a) a man of dress; (b) a boy's nickname; (c) not; (d) a verb.
4. (a) a consonant; (b) to count; (c) skill; (d) a preposition.
5. (a) total; (b) a pronoun; (c) a consonant; (d) party.
6. (a) a title; (b) a pronoun; (c) a pronoun; (d) used in making liquor.
7. (a) a vehicle; (b) a kind of sweet; (c) part of the head.
8. (a) a pronoun; (b) cunning; (c) a consonant; (d) to know; (e) to probe.

2—CHARADE.

My FIRST is a body of water
On which many people do sail;
My SECOND a vessel to carry
O'er my first in a blinding gale.

My WHOLE is like a constructure
That is made for the water or gale;
'Tis kept for the use of the people
Who can go through the storm and sail.

UNA SHEPHERD.

3—

I am something complete. Behold me, I am an opening. Behold me again and arrange my remains different, and I am a boy's name.

MARION A. ASHLEE.

4—TRANSPOSITION.

Etl em otn ni fmo lunru sbemur,
effi si ubt na yepm mraide!
ofht olsu si ddae aht sbubmerl
nad ighnts rae ont tawh ehty mese.

ESTHER C.

5—DROP-LETTER.

Early explorers.

- 1. a-d-v-l-e. 5. -ol-m-w-.
2. -a-o-. 6. C-r-e-e-l.
3. m-r-o-o-o. 7. a-t-e-.
4. -e-r-z-u-. 8. -h-m-l-i-. "DICK."

6—BIRDS TRANSPOSED.

- 1. cealg. 4. hrthsu.
2. jybteau. 5. braowln.
3. relvutu. 6. yraacn. ESTHER B.

7—DOUBLE ACROSTIC.

1, to charge; 2, sweet smell; 3, the Turkish council of state; 4, the first letter of the Greek alphabet; 5, the angular curve formed by the crossing of two arches; 6, a place of public contest; 7, temperate; 8, a Mohammedan pilgrim to Mecca; 9, nimble (curtailed); 10, the relation of one thing to another. Initials—An island in the Eastern Hemisphere, especially noted for the export of spices. Finals—The largest city on this island and its capital. "DICKENS."

8—ANAGRAM.

"I can tan acher Ade!"
Her tooth ached; oh my! how it pained,
Yet in no way did she show it.
She quite handily the grim toothache feigned,
So that we hardly did know it.

Her name was Ada—nice and plain,
As a Total she was good;
I called her "Ade," a rude nickname,
But I hardly think that I should. "DICKENS."

9—LIVING LETTERS.

What letter, when born in Holland, becomes a lady of high rank?
Why would the letters a, c, n, o, s, t, prove faithless lovers?

What letter, if named Samuel, would be unchangeable, but if named Thomas its many changing "characters" seem endless? When it has its hat on it is very disagreeable, being always at enmity, but with a cap on it is a most comfortable companion to have around.

When a drunkard takes a certain letter into partnership he is sure to be shot.

Another letter will make everyone appear exalted and lifted up when it is before them.

What letter makes men mean and puts a stop to their prayers if they happen to see it before them?

What letter, when suddenly addressed in an exclamatory tone, will change into a huge animal? "OGMA."

10—HOURGLASS.

- 1. Hollow like a pipe.
2. A click.
3. To put in circulation.
4. A man's name.
5. A consonant.
6. Always.
7. The white of an egg.
8. To vie with.
9. Pertaining to the hand.

Diagonals—From left down, "one who deals in fruit;" from right down, "trick." "DICK."

11—SYNCOPE.

- 1. Take a word meaning "pain" from "stranded" and leave "a piece of furniture."
2. Take a "catch" from a "spectator" and leave a "liquor."
3. Take "one and one-quarter yards" from a "roar" and leave "part of a ship."
4. Take a "planet" from "a plant" and leave "mire."
5. Take a "young woman" from "negligently" and leave "to confide in."
6. Take "past tense of a verb meaning to flow" from "notorious" and leave "skill." "DICK."

12—WORD SUBTRACTIONS.

(Example—Take an animal from crying and leave to guess: weeping—pig=weon.)

- 1. Take a female from the remains of a burnt body and leave a preposition.
2. Take ourselves from defeats and leave to decay.
3. Take a portion from a separate office and leave infatuated.
4. Take the last of anything from despatching and leave to utter with melodious sounds.
5. Take repetition of words by memory from changing shape and leave a utensil.
6. Take a demon from hopped and leave instructed.
7. Take a bed for insects from uprightly and leave pious.
8. Take a slight coloring from a strict disciplinarian and leave a female horse.
9. Take a number from to advance and leave a barnyard fowl.
10. Take to destroy from a hand and leave one of the sex that begets young.
11. Take a cave from a sum and leave to join something to another.
12. Take Oriental from gay and leave a model.
13. Take a girl's name from babyhood and leave a preposition.
14. Take to make brown from the study of plants and leave a child.

(Primals of words subtracted spell "a prominent person of a society." "DICKENS.")

13—SQUARE.

- 1. A fluid. 4. To blot out.
2. To venerate. 5. To lease again.
3. The whole. "OGMA."

14—OBLIQUE.

Diagram. Down and across the same.
x
x x x
x x x x x
x x x x x x
x x x x x
x x x x x
x x x x x x
x x x x x x
x
SOLVERS TO JANUARY 2ND PUZZLES. "DICK."

COUSINLY CHAT.

"Dickens."—Yes, your puzzles are good now. You will find several of them in this issue.

"Margaret."—A misunderstanding about the time for sending in work for the Christmas number was the cause of the non-appearance of our customary budget. I do hope your brothers will get you to work again. "Mai," I presume, will be quite too sedate to take part in anything so frivolous as our corner, but I hope not. Indeed, I think we should have two contributors now instead of one. What do you think, Mr. J.—I No, "Margaret," that was not printer's copy.

H. C. G.—Where are you this time? I expected another consignment of your clever originals. Yes, I'm the same circle as you, "Cassa," etc. I wonder where that wonderful packet is now. The absence of puzzles in the Christmas number has made an unpleasant break in our work, but now we are in running order again.

Not the Truth.

It is easy to say to men, "Be original;" but it is better to say to them, "Be true." There is no affectation more disagreeable than a conscious effort at originality. It is better to say a true thing which needs to be said, even though a similar thing has been said before, than to seek to attract attention by a startling utterance which is not the truth.—SEL.

WINONA NURSERY CO.

Offers for
Spring of 1899.

A full line of stock, both fruit and ornamental, at very moderate prices. No agents' commission to pay.

Send for price list and catalogue. Dealers will find it to their interest to correspond at once with

J. W. SMITH,

MANAGER.

Winona, Ontario.

NICHOLSONS,

OF SYLVAN, ONT.

Will offer for Sale, by Public Auction,

at their farm, on

The Eighth (8) of March, 1899.

30 Head of Shorthorns,

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

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

CATALOGUES READY 1ST FEBRUARY.

R. & S. NICHOLSON, Sylvan, Ont.

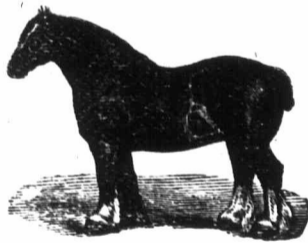
Capt. T. E. ROBSON, Ilderton, Auctioneer.

FOR SALE...

IMPORTED AND
CANADIAN-BRED

Clydesdale Stallions

From One to Four Years Old. Also



SEVERAL THREE YEAR OLD FILLIES,

All registered and warranted sound. Inspection invited.

ROBT. DAVIES,

Thorncliffe Stock Farm, TORONTO.

DO YOU WANT TO BUY

CLYDESDALE

Stallion, Brood Mare, or Filly?

If so, it will be to your interest to correspond with us. We have them of all ages and of the best breeding strains. In the pedigrees will be found the names of such sires as Grandeur, Macgregor, Macpherson, Barnley, and Good Hope.

I. DEVITT & SONS, FREEMAN P.O.
Farm quarter mile from Burlington Station, G. T. R.; nine miles from Hamilton, C. P. R.

COACH STALLION For Sale.

The aged stallion, King Fairfield. Sound, gentle, and sure; is an AI stock horse. He is half-brother to Princess Royal, the silver medal mare at Toronto this year, and grandsire of Prince George, winner of the silver medal for the best stallion, any age, at Toronto this year. Will be sold cheap.

W. C. BROWN, MEADOWVALE, ONT.
Meadowvale Station, C. P. R.

PLEASE MENTION FARMER'S ADVOCATE.

GOSSIP.

The annual meeting of the Nova Scotia Farmers' Association is to be held at Annapolis, on February 22nd, 23rd and 24th. The N. S. Fruit Growers' Association meets at Wolfville on February 20th.

Ayrshire breeders throughout America will be interested in the dispersion sale of Mr. D. Drummond's grand herd of up-to-date Ayrshires, at his farm, at Petite Cote, near Montreal, on February 16th. The annual meeting of the Canadian Ayrshire Breeders' Association is fixed for February 15, in Montreal, so that the two events may be covered by one trip. Mr. Drummond is entitled to a good sale, for no man has done more to raise the standard of Ayrshires in Canada, and it is safe to say his cattle will be found well up to the standard of the best of the breed, and that the sale will be honorably conducted. Catalogues will be sent on application.

Jas. A. Russell, Precious Corners, Ont., writes: My herd is now in the best of condition, and the young stock all healthy and vigorous. The Yorkshire boars that I advertise for service are extra good ones. The younger Yorkshires are choice and I can supply pairs not akin. The Berkshire sows that I advertise safe in pig are the right bacon type and are bred to a first-class show boar. The following is a list of my winnings in the fall of 1898: Bowmanville exhibition—Berkshires—First for boar over one year, first for sow over six months, second for sow over one year, first for sow over one year, second for sow over six months. Orona exhibition—Berkshires—First for boar over one year, first for sow over one year, first for sow over six months; Yorkshires—Second for boar over one year, first for sow over one year, first for sow over six months. Cobourg exhibition—Berkshires—First for boar (aged), first for boar of 1898, first for sow (aged), first for sow of 1898, diploma for best boar and two sows; Yorkshires—First for boar (aged), first for sow (aged), first for boar of 1898, diploma for best boar and two sows. Peterborough exhibition—First for boar over one year, first for boar of 1898, second for sow over one year, third for sow of 1898; Yorkshires—First for boar over one year, first for sow over one year, first for sow of 1898, diploma for best boar and two sows. Millbrook exhibition—Berkshires—First for boar over one year, first for sow of 1898, first for sow over one year; Yorkshires—Second for boar over one year, first for sow of 1898, second for sow over one year.

Mr. W. D. Platt, Hamilton, Ont., reports the following recent sales of Shorthorns from the Trout Creek herd: To Henry King, Byng, Ont., the roan 2-year-old heifer Myrtle Stanley, a lengthy, well-formed heifer of superior quality, sired by Duncan Stanley, a son of Stanley, sweepstakes winner at Toronto Exhibition, which was the sire of Lord Stanley, first-prize and sweepstakes winner at the World's Fair, Chicago; to Isaac Moore, Cypress River, Manitoba, the red 2-year-old heifer Hamilton Queen, a thick-fleshed, blocky heifer, of the approved early-maturing sort, by Scottish Prince 4th, and out of Ethel, by imp. Baron = 2570 =, and having for grandam on the sire's side Rosamond, by imp. Royal Bampton, a champion winner and sire of the famous Bampton Hero, a champion and sire of many champions; to M. F. Gillanders, Chilliwack, B. C., the red yearling bull Elvira's Prince, a strong, thrifty young bull of fine quality, and from an extra good milking strain. He was sired by Prince Ury, a son of Village Boy 6th, of the same family as Young Abolition, the champion of the World's Fair, Chicago. His dam was by Royal Saxon, a 1st prize winner at the Toronto Exhibition, and his pedigree shows a succession of first prize winning sires. To F. E. Bowman, Berlin, Ont., the red 10-months bull calf, Trout Creek Prince, a smooth, even, stylish calf, of fine quality and of the famous Strathallan family, sired by the imp. Cruickshank bull Northern Light, dam by imp. Vice-Consul, a sweepstakes winner at Toronto Exhibition; to C. D. Wagar, Enterprise, Ont., the large roan 2-year-old bull Beauty's Saxon, by Elvira's Saxon, a son of Royal Saxon, a 1st prize winner at Toronto Exhibition. This bull has fine quality and breeding, being of an exceptionally good milking strain, and should do excellent service in producing high-class general purpose stock, good milkers and good beefers combined.

CLYDESDALE TRANSACTIONS.

Messrs. D. & O. Sorby, Guelph, Ont., report that they have lately disposed of a number of stallions and mares, amongst the purchasers being Mr. John A. Turner, of Balgrogan Ranch, Calgary, N.-W. T. He secured five stallions, all sired by their noted stallion Grandeur, No. 1, Guelph Grandeur (2302), foaled 1887; dam, Lady Fleming (imp.), a breeder of winners. This is a good, thick, strong colt of the right quality, well set on his feet. No. 2, Stanley Prince, foaled 1898; dam, the well-known Miss Stanley, winner of 1st prize at World's Columbian Exhibition in the three-year-old class, and 2nd for grand sweepstakes, being only beaten by her dam, the renowned Lady Macgregor, who won the championship award. This colt is as promising as any Messrs. Sorby have ever bred, and will make a record in the showing yet under Mr. Turner's care. No. 3, Samsie Lad, foaled 1898; dam, Samsie Lass; g. dam, Samsie; g. g. dam, Sunbeam (Lumsden's). Samsie Lass won 1st and sweepstakes at London, 1898. Samsie, g. dam of Samsie Lad, won 1st prize in class for 2-year-olds at the Royal Northern Society's Show, at Aberdeen, 1898, also winning the cup for champion female at same show; and her dam is the noted prize mare Sunbeam, by Macgregor. This is a remarkably good, strong colt, and will make a show horse of excellent quality. No. 4, Enterprise, foaled 1898; dam, Venus (imp.), by Queen's Own, by Prince of Wales (673), by Prince of Wales (673). This filly is a remarkably good one, like all Venus's offspring. She has won first at Toronto, Ottawa, and Montreal. This filly, along with her full sister, "Venus of Medist," a year younger, was sold to Mr. Eastwood, of Cooksville, Ont.

To the Farmers of this Canada of Ours!

Gentlemen,—We thank you for your ever-increasing patronage, and remember we do not class our Queenston Cement with the water limes and hydraulic cements now on the market, but we guarantee our cement equal to the Imported or Domestic Portland Cements for all farm structures, such as Basement Walls for Stables, House or Cellar Walls, Cisterns, Hog Pens, Poultry Houses, and for all kinds of stabling. Kindly investigate our system of ventilation. This system is fully covered by letters patent, but to our patrons we make no charge. Write us for our new pamphlet for 1899, containing valuable information, prices, etc.

ISAAC USHER & SON,

Queenston, Ontario.

AUCTION SALE

OF THE

Valley Home Herd

SHORTHORN CATTLE,

On Wednesday, March 22nd, 1899.

At our farm one mile from Meadowvale Station, C. P. R.

OUR entire herd of Shorthorns, consisting of 30 head, comprising such well-known Scotch families as Nonpareils, Minas, Jills, Ceccillas, Bessies, and Duchesses of Gloster. Sired by the best imported Cruickshank and Campbell bulls. Among the lot are some very fine show animals, bred from imported stock, as well as cows that are very heavy milkers. The young things are a choice lot, sired by such imported bulls as British Statesman, Comet, Golden Crown, and Grand Sweep. In all ten bulls will be offered, also the imported bull, British Statesman, a first-class show bull, bred from one of the best milking strains in Scotland.

See Catalogue, which will be sent on application. All will be sold without reserve, as Mr. Pearson is giving up farming.

S. J. PEARSON & SON,

MEADOWVALE, ONT.
JOHN SMITH, M. P. P.,
Auctioneer, BRAMPTON.

WE ARE OFFERING FOR SALE

8 HIGH-CLASS YOUNG IMPORTED SHORTHORN BULLS

OF THE BEST SCOTCH BREEDING,

TOGETHER WITH A FEW HOME-BRED BULLS

AND A NUMBER OF COWS and HEIFERS

BOTH IMPORTED AND HOME-BRED.



CORRESPONDENCE OR A PERSONAL VISIT SOLICITED.

CATALOGUES ON APPLICATION.

H. CARGILL & SON., CARGILL, ONTARIO.

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

Dentonia Park Farm

EAST TORONTO

(Coleman P.O.)

W. E. H. MASSEY, Proprietor.

Address, DENTONIA PARK FARM, COLEMAN, ONT., CANADA.

Dentonia Jersey Herd

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

Dentonia Poultry Yards

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

Dentonia Trout Ponds

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

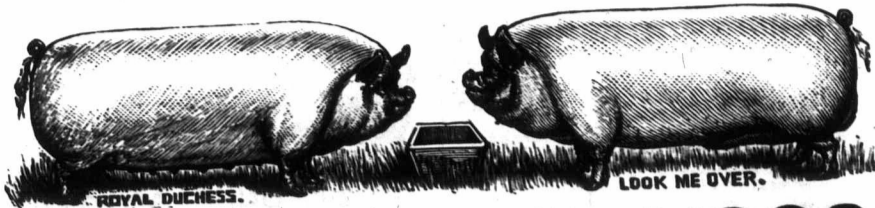
GUERNSEYS. The grandest of dairy breeds; good size, hardy, persistent producers of the richest colored milk and butter when fed in the stable. A few young bulls and heifers from prizewinning stock for sale.

CHESTER WHITES. The farmers' favorite; easy feeders, early maturers, good breeders, giving satisfaction bred as pure or as cross breeds. The largest prizewinning herd in America to select from.

DUROC-JERSEYS. Easiest fed, easiest fattened; will do best when fed on forage crops. Sweepstakes herd to select from. Seventy now for sale.

TAMWORTHS. The ideal bacon hog; two boars fit for service; 10 sows (bred); some prizewinners included. Write

WM. BUTLER & SONS, DEREHAM CENTRE, ONT.



SUMMER HILL HERD OF YORKSHIRE HOGS.
LARGE, LENGTHY, ENGLISH TYPE.
 Among them being the undefeated prize-winning boar, "LOOK ME OVER" 2602. Also Royal Duchess, a first prize sow at the Royal Show of England in 1898, and several choice young sows bred to Look Me Over; also, young stock of both sexes, single or in pairs, not akin. We ship to order, prepay express charges. Guarantee stock as described.
D. C. FLATT, MILLGROVE P. O., ONTARIO.

Prevention of Cruelty to Horses.



Many a poor horse, utterly run down by impoverishment of blood and its accompanying ills, is blamed for laziness and harshly treated. The use of

Dick's Blood Purifier

would strengthen such an one, would fortify him to endure fatigue; enable him to accomplish work without loss of tissue and make him a cheerful, willing worker.

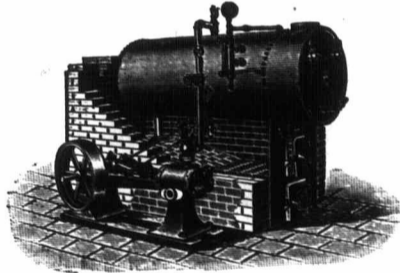
It pays to use Dick's Blood Purifier. It greatly increases the flow and richness of a cow's milk. 50 CENTS A PACKAGE. TRIAL SIZE 25 CENTS.

LEEMING, MILES & CO., Agents, Montreal. DICK & CO., Proprietors.

ENGINES AND BOILERS FOR CHEESE AND BUTTER FACTORIES.

DURING 1898 WE SOLD

95 Engines

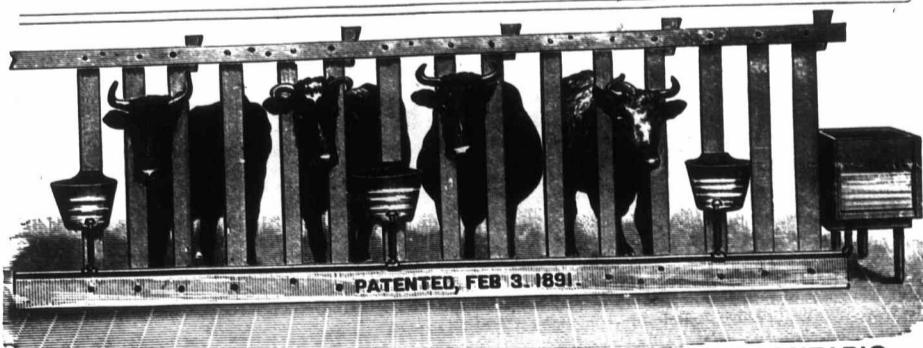


130 Boilers

FOR ABOVE PURPOSES.

E. LEONARD & SONS, LONDON, CANADA.

Estimates on ICE and REFRIGERATING PLANTS of any size, for CREAMERIES, COLD STORAGE, Etc., Etc.



RANEY, SELBY & COMPANY, BOX 620, KINGSTON, ONTARIO.

The Tooth Test

Let us tell you why the tooth test—the test of flexibility—is the supreme test in a weeder; tell you why the flat, flexible tooth has accomplished what other weeders have failed to do; why

Hallock's Success Anti-Clog Weeder AND CULTIVATOR

does as much work as three ordinary cultivators, better, cleaner, quicker work than twenty men and twenty hoes; why it is the only really practical weeder and cultivator on the market to-day. Benefit by the experience of others. Read what hundreds of farmers accomplished last year in the saving of time and money, increased crops, cleaner fields, by the use of this great implement. Send for circulars to-day.

A SPECIAL PRICE on the first order from every district where we have no agency.
D. Y. HALLOCK & SONS, Box 828, YORK, PA.

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

GOSSIP.

W. C. Shearer, "Sprucedale Dairy Farm," Bright, Ont., writes:—"We have sold nearly all of the Barred Plymouth Rocks we care to spare at present, and have a large number of choice Tamworth pigs to dispose of—the real bacon type, having long deep, evenly-fleshed sides. Your readers will notice the change of advertisement in this issue."

D. J. Gibson, Bowmanville, Ont., writes:—"The young Tamworth boars and sows I offer in this issue are good ones, and right in every way; also the aged sow, Red Skin 2nd—841—, bred by H. George & Sons, Crampton, is from imp. stock on both sides. The Berkshires are of excellent quality and very lengthy, sired by a Prince Lee boar and from a McAllister sow, which breeding will speak for itself. My collie pups are from an imported sable collie dog and a Canadian-bred bitch, being the best sheep and farm dogs I ever saw."

Mr. James Leask, Greenbank, Ont., one of the most successful cattle feeders in the Dominion, writes:—"The cattle are all wintering well; have plenty of feed to put them out on grass in good condition. Royal Banner, the bull calf I bought from W. B. Watt, winner of 1st prize at Toronto, is doing nicely; so is the steer calf that won 1st at the fat stock show. The two bulls I have for sale are good ones. They are just like their sire, Moneyfuffel Lad, naturally thick-fleshed, with straight top and lower lines, and on short legs. One especially is very much like the old bull was at the same age."

The American Chester White Record Association held its annual meeting at Columbus, Ohio, on January 11th. Report of Secretary-Treasurer Freigau showed balance in treasury and due the Association \$638.96. Result of election: President, L. H. Martin, Alexandria, Ohio; Vice-President, I. T. Cummins, Cedarville, Ohio; Secretary-Treasurer, Carl Freigau, Dayton, Ohio; Board of Trustees—T. N. Harrod, Bellecenter, Ohio; J. L. Beringer, Marion, Ohio; F. A. Branch, Medina, Ohio; W. H. Pool, Delaware, Ohio; Willis Whinery, Salem, Ohio; Albert Rummell, Kenton, Ohio. Executive Committee—Willis Whinery, Albert Rummell, T. N. Harrod. For resolutions adopted and other proceedings, address the Secretary.

D. C. Flatt, Millgrove, Ont., writes:—"My herd of Yorkshires is wintering fine, and are in a very healthy condition. Orders are coming in far beyond my expectations. I am shipping pigs to several different States, the Northwest Territories, and to Eastern Provinces. Although I already have several imported animals in my herd of individual merit, I intend to largely increase the number by bringing out from England one of the largest importations of Yorkshires that ever came to Canada. I am selecting my stock from the most noted breeders and prize-winning producers, regardless of cost. I expect the importation to arrive in February. A number of the sows are due to farrow in March and April. We invite personal inspection of our Summerhill herd of Yorkshires."

Wm. Stewart & Son, Menie, Ont., write:—"We have sold to Easton Bros., Charlottetown, P. E. I., the Ayrshire stock bull, Dainty Lad of Elmshade. Color, white with red markings; fine symmetry, very showy, and a fine stock-getter. Dainty Lad has been a prizewinner from a calf up to the present at all the leading shows in Ontario and Quebec. This year he travelled over a circuit of fourteen hundred miles, winning in every ring he entered amongst the best stock in the country. Easton Bros. are to be congratulated on securing this fine young bull to head their herd, and we predict for him a very promising career in the future, as he is fit to head any herd, being descended from the very best stock procurable in Scotland, and no doubt in Easton Bros.' hands he will make his mark in P. E. I."

Messrs. B. H. Bull & Son, Brampton, Ont., report the sale of three Jersey cows to Mr. Wm. Henry Hill, Swanton, Vermont, who since their arrival has written as follows:—"It is now about two weeks since Corinne, Lisgar and Laurel came, and in that time I have had a good opportunity to look them over thoroughly. Corinne and Laurel being in milk, I have watched more closely, and Lisgar, now showing quite an udder development, will shortly calve. I may add again, I am very highly pleased with time to time you will surely have the first opportunity to cover my wants. I want to also say to you and thank you for your very open, candid and conscientious treatment all through our negotiations."

I. Devitt & Sons, Freeman, Ont., write:—"Our Clydesdales are wintering well. Here is the records of some of them as breeders: Topsy, a grand block of a mare, not as large as some, but an excellent breeder, is eight years old and has produced four fillies and one horse colt, all of them prizewinners, some of them at the Toronto Industrial. She was sired by the Lord Erskine horse Duke of Flemington, and is in foal to Douglass Macpherson. Another is Nellie Macclay, sire Macclay, a grand-son of Prince of Wales, of Druid, and out of Isabella, by Clyde Boy. Isabella was a winner at Toronto on several occasions, being once 1st in team and several times second. Grandam Nellie of Guelph, by that grand old horse Ontario Chief. Nellie Macclay has also carried honors from Toronto on several occasions in strong competition. She has produced four, all of them good ones, and she is in foal again to Douglass Macpherson. Bess, another 7-year-old mare by same sire, and out of a Boydston Boy mare, is doing well. She has several times beaten her companion Nellie at local fairs, and has to her credit a fine filly by Douglass Macpherson, which promises to be a grand mare. There are several others of good quality that have commenced well, and will no doubt be as successful as their ancestors. The stallion, Douglass Macpherson, is in fine condition, as fresh as a 3-year-old. Grandeur II. is doing nicely, and will make a horse fit to head any stud. Have made several sales since last writing, at good prices. Prospects at present are good for heavy horses. We are having inquiries from different parts of Ontario, as well as from Manitoba and Northwest Territories."

HEREFORDS AT AUCTION.
 Mr. J. Bergen, Cornwall, Ont., announces in our advertising columns that he will offer for sale at his farm near that town on February 18th, fourteen head of Hereford cattle, with a number of grade Herefords, also a lot of valuable driving and French Coach horses.



Persic Sheep and Animal Wash

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

THE PICKHARDT RENFREW CO., Limited, STOUFFVILLE, ONT.

CLYDESDALE STALLIONS FOR SALE
 Prizewinners of such noted breeding as Prince of Wales and Darnley. For particulars, write—
Kelly Siding, JAS. HENDERSON, Station, G. T. R. BELTON, ONT.

FOR SALE, Imported Percheron Stallion,
 13 years old. Address, **WALTER K. McLEAN, Eardley P. O., Ottawa County, P. Q.**

CLYDESDALES, AYRSHIRES AND POULTRY.

We are now offering a limited number of imported stallions and mares, and booking orders for young Ayrshires from our show cows. Shetland ponies and fancy poultry. **R. Ness & Sons, Howick, Que.**

Three Imported CLYDESDALE STALLIONS.
 One a winner at the Royal Northern Show, 1898. For particulars, address—
GEORGE ISAAC, BOWMANTON, ONT.

IF WEST'S FLUID

IS PROPERLY USED IT IS A POSITIVE PREVENTIVE FOR SUCH DISEASES AS Contagious Abortion and Hog Cholera

AND A MOST EFFECTIVE DISINFECTANT, SIMPLY BECAUSE IT IS A STRONG ANTISEPTIC AND DESTROYS THE GERMS UPON WHICH SUCH CONDITIONS DEPEND, AND DOES NOT CONTAIN CORROSIVE OR IRRITATING PROPERTIES. FULL INSTRUCTIONS ON APPLICATION.

THE WEST CHEMICAL CO., TORONTO, - - ONTARIO.
 Agents wanted in all counties.

SPRING GROVE STOCK FARM

Shorthorn Cattle and Lincoln Sheep. Herd prize and sweepstake at Toronto Industrial Exhibition, 1897 and 1898. Herd headed by Imported Blue Ribbon—17095—and the famous Moneyfuffel Lad—20521—, High-class Shorthorns of all ages for sale. Also prizewinning Lincolns.
 Apply
T. E. ROBSON, Ilderton, Ont.

HERD ESTABLISHED 1855.

SHORTHORNS, BERKSHIRES.

TEN YOUNG BULLS
 And a few heifers, by Isabella's Heir—19550—, and richly bred on their dam's side; also a few young BOARS fit for service.
JAMES DOUGLAS, - - - CALEDONIA, ONT.

SHORTHORN CATTLE AND LINCOLN SHEEP.

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

J. T. GIBSON, DENFIELD, ONT.

30 HEAD CHOICE AYRSHIRES BY AUCTION.

The undersigned will sell by auction, at his farm at Petite Cote, on FEBRUARY THE 16TH, 1899,

without reserve, the whole of his farm stock, implements, etc., including his choice herd of AYRSHIRE CATTLE.

All Cattle are Tuberculin Tested. Catalogues are being prepared and will be sent on application to DANIEL DRUMMOND, PETITE COTE, QUE.

TERMS: - \$50 and under, cash; over that amount, approved notes at 12 months, with interest at 6 per cent. per annum.

WM. WYLIE, 228 BLEURY ST., MONTREAL, OR HOWICK, P.Q. Breeder of high-class Ayrshires. Young stock always for sale; bred from the choicest strains procurable.

TROUT RUN STOCK FARM. Ayrshire herd now headed by Royal Star of St. Anne's 1916, 1st prize two-year-old at Toronto, 1st and diploma at London, 1898.

MAPLE CLIFF DAIRY and STOCK FARM. Ayrshire cattle, Berkshire and Tamworth pigs. Two bull calves dropped in February.

FAIRVIEW STOCK FARM AND BERKSHIRE PIGS. Traveller of Parkhill at the head of herd, while my herd is descended from cows purchased of Mr. David Benning.

CHOICE AYRSHIRE BULLS FROM IMPORTED STOCK. I offer for sale three (3) bulls, 9, 10 and 13 months old, all sired by prizewinning imported bulls.

AYRSHIRES AND YORKSHIRES. A CHOICE LIGHT-COLORED BULL. Young bull calves, from imported stock. Young sows in pig.

MEADOWSIDE FARM, J. YULL & SONS, Props., Carleton Place. Breeders of high-class, deep-milking Ayrshires. Sweepstakes young herd at Ottawa.

AYRSHIRE CATTLE, BERKSHIRE PIGS. The bull Tom Brown and the heifer White Floss, winners of sweepstakes at World's Fair, were bred from this herd.

HIGH-MILKING AYRSHIRES. Descended from some of the most noted prizewinners at the World's Fair, Chicago, and other important competitions.

6 AYRSHIRE BULLS from 7 to 10 months old. By Douglas of Loudon 1384, and out of descendants of imported Red Rose.

F. W. TAYLOR, Wellman's Corners, Ont.

HEREFORD SALE. The subscriber will offer for sale FOURTEEN HEAD OF HEREFORDS. With a number of grades, at his farm, near the town of Cornwall, Ont., on SATURDAY, THE 18TH DAY OF FEBRUARY next, at the hour of one o'clock p. m.

INGLESIDE HEREFORDS. UP-TO-DATE HERD OF CANADA! TAMWORTHS. Orders booked for Spring Pigs. Pairs not akin. Send for Illustrated Catalogue. Address, H. D. SMITH, COMPTON, QUE.

HAVEN'T YOU SEEN Our Advertisement? There is no quarantine law, and now is the opportunity for you to get as good Holstein cattle as there is in the United States.

"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.

HOLSTEIN-FRIESIANS. BULL CALVES from Queen DeKol 2nd, winner of Prince of Wales prize over heifers of all breeds in public test; Lady Akkrum 2nd, 6 1/2 lbs. milk in one day and 24 lbs. butter in a week.

Holsteins, Tamworths, and B. P. Rocks. Am offering 1 yearling heifer in calf, 2 August bull calves, 1 two-year-old heifer in calf.

NORTH HASTINGS HOLSTEIN HERD. Contains blood of De Kol 2nd, Pauline Paul, Pietertje Hartog, Mechthilde, Inka, and Karndyke strains. Headed by a son of Manor De Kol.

Brookbank Holstein Herd. 50 CHAMPIONS FOR MILK AND BUTTER. 50. A number of desirable young BULLS on hand, from one to eight months old, from our great milkers.

HOLIDAY OFFERING. Will sell a few very choicely-bred Holstein Bulls at a reduced price if taken before or during holidays; also B. P. R. Cockerels.

4 HOLSTEIN-FRIESIAN BULLS from 9 to 12 months old, of choice breeding. Apply to William Suhring, Sebringville, Ont. PLEASE MENTION FARMER'S ADVOCATE.

GOSSIP. Alex Hume & Co., Menie, Ont., advertise in this issue Ayrshire cattle and Yorkshire hogs. Their stock has always been of good standard and up-to-date in type and quality.

Mr. H. Fraleigh, Forest, Ont., advertises high-class Jerseys. He has spared no expense in securing the best strains of blood, and claims to have up-to-date individuality, based on inheritance of large capacity for working in butter.

Messrs. R. & S. Nicholson, Sylvan, Ont., advertise in this issue an auction sale of Short-horn cattle on March 8th, when they will offer 20 females and 10 bulls. The Sylvan herd has had a successful career in winning honors at the leading shows in Canada.

Robert Davies, Thorncliffe Stock Farm, Toronto, reports the sale to W. W. Ballantyne, Stratford, Ont., of a young Ayrshire bull, by imp. Oliver Twist, dam imp. Clara 3rd of Ballowart, a Royal winner, by White Cockade.

Edgar Silcox, Shelden, Ont., writes: "My herd of Jerseys are doing remarkably well this winter, my average for butter alone, last year, being \$53.00 per head for twenty cows, and prospects good for beating that record this year."

A COMING SALE OF SHORTHORNS. S. J. Pearson & Son, Meadowvale, Ont., announce in our advertising columns in this issue, that on account of the retirement of Mr. Pearson from farming they will sell their entire herd of Shorthorns, consisting of 30 head, on Wednesday, March 22nd.

Feed Bolders. The galvanized steel feed boiler advertised by the McClary Mfg. Co. in this issue is meeting with a tremendous sale, and usually where one goes others follow, so satisfactory are they.

A Good Book. A copy of that excellent story entitled "Overcoming the World," by Charles M. Sheldon, author of "In His Steps," "The Redemption of Freetown," etc., has been sent to us by the Poole Printing Co., Limited, Toronto, Ont.

A Satisfactory Feed Cooker. Economy of time, labor and fuel are each worthy of consideration in a feed cooker. The claim is made that the Improved Reliable Feed Cooker, Tank Heater and Steam Generator manufactured by the Rippley Hardware Co., of Grafton, Ill., possess the qualifications of economy in a marked degree.

GUERNSEYS. This is the dairy breed for ordinary farmers. Large, vigorous, and hardy, giving plenty of rich milk. Several fine young bulls for sale at very reasonable prices. A few heifers can be spared.

Two Choice Bull Calves AND Five Heifers for Sale. Tamworth and Berkshire Pigs. W. H. & C. H. McNISH, LYN, ONT.



ROCK SALT for horses and cattle. Per 100 lbs., 70c., or 500 lbs., \$3.00, Toronto. Cash with the order. Also in car lots. TORONTO SALT WORKS, Toronto.

J. E. CASSWELL, Loughton, Folkingham, Lincolnshire. breeder of Lincoln Long-wooled Sheep, Flock No. 46. The flock was in the possession of the present owner's great-grandfather in 1785, and has descended direct from father to son without a single dispersion sale.

W. W. Chapman, Secretary of the National Sheep Breeders' Association, Secretary of the Kent or Romney Marsh Sheep Breeders' Association, and late Secretary of the Southdown Sheep Society.

SHROPSHIRE FOR SALE: 30--Ram and Ewe Lambs--30. Mostly sired by the imp. ram Newton Stamp 99631. A prizewinner at Toronto in 1897. GEORGE HINDMARSH, AILSA CRAIG, ONT.

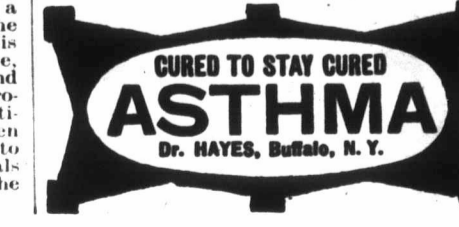
HILL HOME FLOCK OF SHROPSHIRE. At Hill Home are a few of the best rams and ewes and ewe lambs that money can buy. Write for prices before you buy. D. G. GANTON, SIMCOE COUNTY, SAURIN P. O.

Shropshire Sheep, Chester White Hogs, BRONZE TURKEYS, W. E. WRIGHT, o GLANWORTH, ONT.

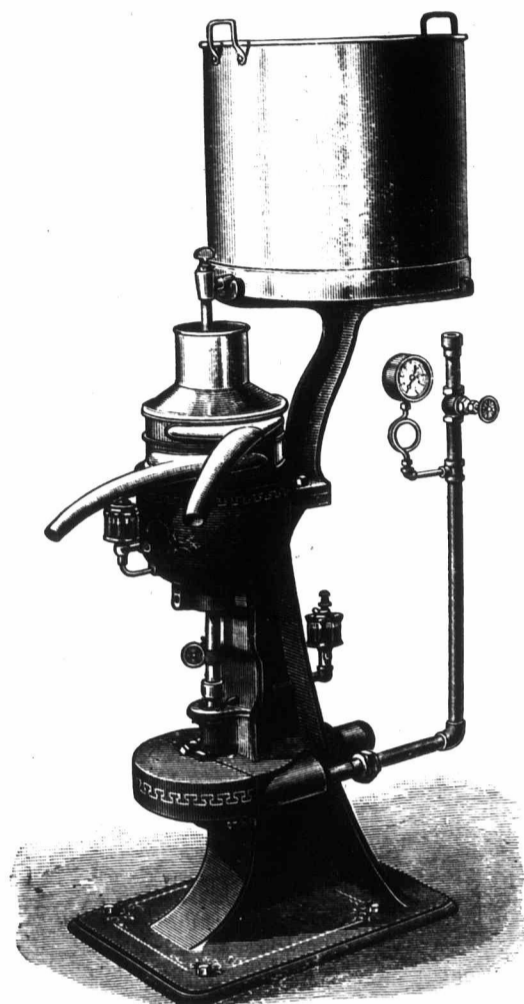
HENRY ARKELL, ARKELL, ONTARIO. Importer and breeder of OXFORD DOWN SHEEP. Ewes in lamb to Royal Warwick and imp. Hero 5th. FOR SALE. om PRICES REASONABLE.

SCABBY SHEEP. \$500 REWARD. To any party who can produce a scabby sheep which the Lincoln Dip will not cure. Write for particulars. Lincoln Sheep Dip Co., 855 Elliott St., Bldg. Buffalo, N. Y. Canadian Office: WEST CHEMICAL COMPANY, 15 Queen Street East, Toronto, om

SHEEP BREEDERS' ASSOCIATIONS. American Shropshire Registry Association, the largest live stock organization in the world. Hon. John Dryden, President, Toronto, Canada. Address correspondence to MORTIMER LEVERING, Secretary, Lafayette, Indiana. om



CHAMPIONS OF THE WORLD!



"ALPHA" NO. 1 STEAM TURBINE.



The unqualified superiority of the "Alpha-De Laval" to all other cream separators in thoroughness of separation, actual capacity, necessary power, greater "churnability" of cream, and in all other essential respects, is the universal basis of its sale, and is subject to practical demonstration in actual test or otherwise.

SEND FOR "DAIRY" CATALOGUE NO. 268,
OR "FACTORY" CATALOGUE NO. 508.



"BABY" NO. 3.

CANADIAN DAIRY SUPPLY CO.,

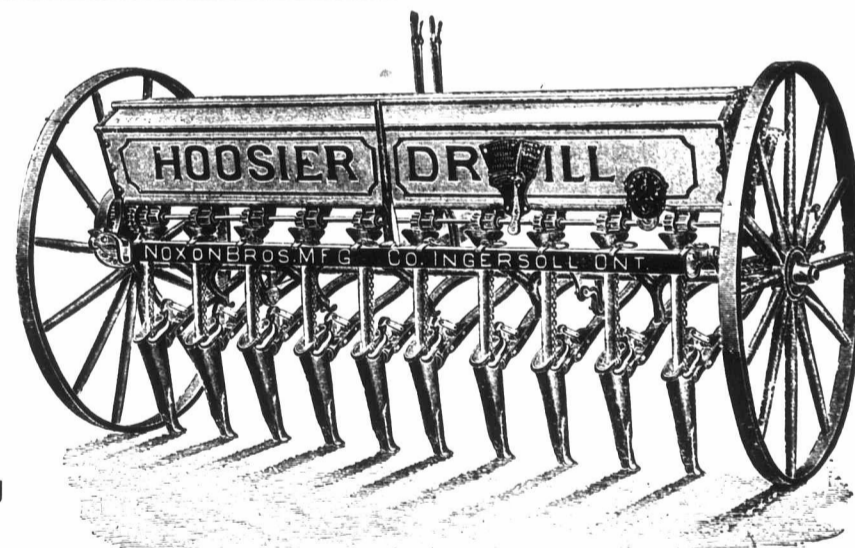
SOLE AGENTS FOR CANADA. MONTREAL.

The Hoosier Needs No Introduction.

Over 40,000 Drills and Seeders of our manufacture in use in Canada. The only Drill made with lever for instant and perfect regulation of depth of hoe in all kinds of soil while team is in motion. Sows absolutely correct to scale; saves seed, as every kernel is deposited at a proper depth to grow. Purchase only the best and you will be satisfied. We also manufacture Binders, Reapers, Mowers, Rakes, Cultivators, and Pulpers, as good as the best. Send for illustrated catalogue.

NOXON BROS. MFG. CO., Limited, Ingersoll, Ont., Canada.

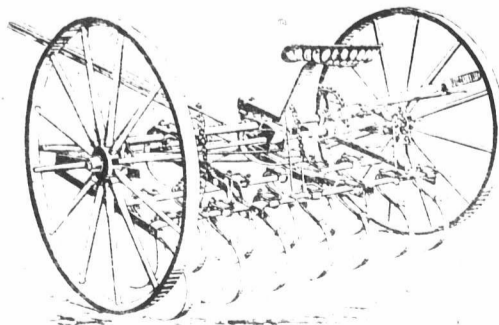
THE BEST DRILL MADE.



NOXON STEEL HOOSIER DRILL

THE No. 12 CULTIVATOR IS A MARVEL OF SUCCESS.

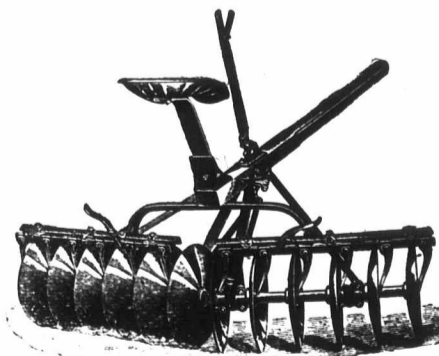
The only Cultivator made that both lines of teeth will cut an even depth in the ground. Examine it and you will see why. The only Cultivator with a movable tooth seat so that the angle of the teeth can be regulated to suit any condition of soil. Pressure can be regulated to act differently on every section requiring it. The teeth are carried between the wheels instead of trailing behind, as in other machines, thus securing lighter draught. This machine is furnished with grain and grass seed box when required. It has reversible diamond steel points for the teeth; also extra wide thistle-cutting points can be furnished. Examine it and you will buy no other.



NOXON BROS. MFG. CO.,
Limited, Ingersoll, Ontario,
Canada.

The Buffalo All-Steel Disc Harrow.

This is the only Disc Harrow made or sold in Canada having independent adjustable spring pressure upon the inner ends of the gang discs, allowing any amount of pressure to be thrown upon the inner ends of the gangs by the foot of the operator. By this means a perfectly flexible action is secured, and the ground can be worked at a uniform depth. Examine this machine carefully and compare with others.



NOXON BROS. MFG. CO., LIMITED,
INGERSOLL, ONTARIO.

LARGE YORKSHIRES OF HIGHEST QUALITY.



IMPORTED and Canadian boars and sows of all ages. My stock of hogs is larger and better than ever.

J. E. BRETHOUR, BURFORD, BRANT CO.

YORKSHIRES.

6 - BOARS READY FOR SERVICE - 6 In-pig sows - bred to boar

12 lately imported by J. E. Brethour. 12 A large number of young boars and sows on hand.

E. DOOL, HARTINGTON, ONT.

PINE GROVE FARM HERD OF LARGE YORKSHIRES.

Imported and Canadian-bred, from the Hasket family, which has taken more prizes at Chicago than any other family of Yorkshires in America.

JOSEPH FEATHERSTON, Streetsville, Ont.

TAMWORTHS, YORKSHIRES, SUFFOLKS, Also Poultry. My Tams have won a large share of the best prizes offered at the large and small fairs.

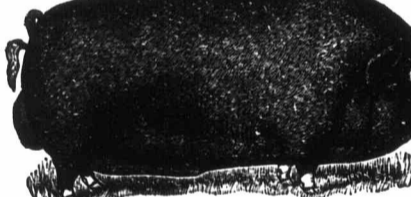
John Hord & Son, Parkhill, Ont.

YORKSHIRES and BERKSHIRES. Yorkshire boars, fit for service, extra quality; boars and sows from two to three months old, not akin.

JAMES A. RUSSELL, Precious Corners, Ont.

ELM GROVE FARM For Pure-bred YORKSHIRE HOGS

For breeding purposes; ready for spring service. Prices right. Apply to SPICER BROS., YEovil P. O., ONT.



A choice lot of Large English Berkshires from one to three months old; also some fine young sows ready to breed.

W. H. SPENCER, GUILDS P. O., ONT. Blenheim Station or Ridgeway.

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

in pig to a show boar; also boars fit for service, and fall pigs of good length and quality.

H. J. DAVIS, Woodstock, Ont.

ENGLISH BERKSHIRES. Two sows eleven months old, one boar eleven months old, one boar twenty months old, and young pigs of either sex.

H. BENNETT & SON, St. Williams, Ont.

BERKSHIRES For Sale. Boars and sows from April and May litters. One 2-year-old boar, 2 brood sows, and several fall sows.

JOHN RACEY, JR., LENNOXVILLE, QUE.

BERKSHIRES. Two sows due to farrow in February, 1899. My pigs are all of the up-to-date bacon type.

J. B. EWING, Dartford, Ont.

FOR SALE! TWO BERKSHIRE BOARS. Farrowed March, 1898. \$10 each. Also 4 boars and 4 sow pigs, farrowed October 15th, 1898. \$6 each or \$9 for pair.

WM. CLARK, Meyersburg, Ont.

SHOW BOARS: BERKSHIRES.

Two Choice Boar Pigs, three months old, sons of imported Premier Belle and imported sire. Will make prizewinners. Well up to the standard of the best. Address—

J. G. SNELL ESTATE, SNELGROVE, ONT.

English Berkshires. Herd headed by three first-prize boars; large size, strong bone, fine quality; and a choice lot of breeding sows.

GEORGE GREEN, Fairview P. O., Ont. Stratford Station and Telegraph Office.

DUROC - JERSEY SWINE

The earliest established, the greatest prizewinning and most reliable herd in Canada. If you want length, try them. If you want depth of side, the Duroc-Jersey will give it.

TAPE BROS., Ridgeway, Ont.

OXFORD HERD OF POLAND-CHINAS

The home winners of the imported boars, Conrad's Model and Klondike, assisted by Bacon Boy and Lennox. Has won 64 out of a possible 69 first prizes.

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

5 POLAND-CHINA BOARS

Five months old, sired by imported Corwin Ranger -1065-; d. Kent Beauty -1204-; by imported Black Joe -708- Sows all ages. Booking orders for fall pigs.

JOS. M. SMYTH, Box 619, Chatham, Ont.

Springridge Poland-Chinas

Now offering the 2-year-old sire, Blackmoore, and a few of his young females, and booking orders for young stock from the royally-bred Goldbug, lately added to the herd.

WM. J. DUCK, MORPETH, ONT.

POLAND-CHINA SWINE.

Brood sows; young stock, both sexes. B. P. Rock Cockerels, L. Brahmas, Rouen Ducklings, Bronze Turkeys at reasonable prices. Farm three miles east of town.

J. F. M'KAY, PARKHILL, ONT.

CHESTER WHITES

Sows two to eight months old. Bred and ready to breed. Boars two months old.

Bred, Formed and Priced Right. HENRY HERRON, AVON P. O., ONT.

BORNHOLM HERD IMP. CHESTER WHITES.

Stock for sale at all times, all ages. Nothing but first-class stock shipped. Inspection invited. Correspondence answered.

Daniel DeCourcy, Bornholm P. O., Ont.

REGISTERED CHESTER WHITE PIGS.

Six weeks old at \$5 each; ready to ship by Feb. 14th. Sired by Imported U. S. King. Also Jersey Bull Calves, CHEAP.

F. BIRDSALL & SON, BIRDSALL, ONT.

Tamworth and Chester White Boars

Sows ready to breed, and a choice lot of fall pigs now ready to ship at rock-bottom prices from the sweepstakes herd at the leading exhibitions of Ontario and Quebec in 1897. We pay express charges to your station, and guarantee the safe arrival of all stock shipped.

H. George & Sons, Crampton P. O., Ont.

CHRIS. FAHNER, Crediton, Ont.

I have to hand a choice lot of young TAMWORTH SOWS ... Some carrying their first litter and others carrying their second litter. These sows will be sold at cut prices, by writing at once. Also, write for my new Catalogues.

Amalgamation of Ayrshire Breeders' Associations.

At the last annual meeting of the Dominion Ayrshire Breeders' Association, held at the Albion Hotel on Feb. 10th, 1898, a committee was appointed to meet a committee from the Canada Association of Montreal, at Ottawa, to endeavor to accomplish amalgamation. This was done, and the following minutes explain the result:

On March 10th, 1898, a meeting of delegates from the Canadian and Dominion Ayrshire Breeders' Associations was held at the office of the Central Canadian Exhibition Association, Ottawa, at which there were present from the Quebec Association: Robert Ness, Howick, Que.; David Benning, Williamstown, Ont.; John Morrin, Belle Riviere, Que.; Daniel Drummond, Petite Cote, Que.; and F. W. Stephen, Trout River, Que. From the Ontario Association: W. W. Ballantyne, Stratford; Joseph Yuill, Carleton Place; J. C. Smith, Hintonburg; F. W. Hodson, Toronto; and H. Wade, Toronto.

At this meeting it was moved by Jos. Yuill, seconded by D. Benning, and resolved, That it will be to the interest of the breeders and owners of Ayrshire cattle that the present two Ayrshire Associations do amalgamate.

The present financial standing of the two Associations is as follows: The Quebec Association has \$210 on hand, and the Ontario Association, on the 1st of January last, had \$118.49. The Ontario Association has nine directors, a president and vice-president. The Quebec Association has ten directors, a president and vice-president.

The delegates from the Ontario Association explained that by a resolution passed at their last annual meeting, they were empowered with authority to enter into amalgamation, if they thought proper to do so.

The Quebec delegation explained that they would have to report the result of the meeting to a special general meeting of their members, which would be called together specially, after a short notice.

In case of amalgamation it was decided to call the new association "The Canadian Ayrshire Cattle Breeders' Association."

That the number of directors be fourteen, seven from Quebec and eastward, and seven from Ontario and westward, and that they choose from amongst their number a president and a vice-president. That the term of office for directors be two years after the first year. That the annual meeting be held alternately in Montreal and Toronto. When held in Montreal the seven eastern directors' term of office will expire and when held in Toronto the seven western directors' term of office will expire.

The annual meeting to be held in February of each and every year.

After due consideration the following plan of registration of animals and printing of the Herd Book was adopted, viz.: That a new Herd Book, to be called the Canadian Ayrshire Herd Book, be started, commencing with the next to the highest number in the volume of the Quebec book now in print, and that the pedigrees of this book be abbreviated, giving only the sex, color, age, sire, grandsire, dam and sire of dam, and that they be numbered consecutively, irrespective of sex, then quoting as foundation stock the names and numbers of their sires and dams from either the Quebec or Ontario Book, where the rest of the pedigree will be found, thus doing away with the necessity of repeating the pedigrees that have already been printed, and leaving the volumes already printed of as much value as heretofore.

The standard of the new book to be as before, that no animal be accepted that cannot trace to imported stock from Great Britain, on side of both sire and dam. Animals imported after Jan. 1st, 1899, must be recorded in the Scotch Herd Book to be eligible for this. That the fee to become a member be \$2 per annum. Becoming a member entitles each member to a volume of Herd Book, as well as to reduced rates of registration.

Fees to record an animal under two years of age as per Herd Book with certificate to a member. \$0 75

Fees to record an animal, etc., to a non-member. 1 25

Fees for a transfer certificate, duplicate certificate, each. 25

Fees to record an animal over two years, to a member. 1 00

Fees to record an animal over two years, to a non-member. 1 75

Fees for an extended pedigree. 25

It was resolved, That the new books be edited by the Secretary at Toronto, who will pass on and issue pedigrees, under rules furnished by the Executive Committee, and correct proof, for a fee of 35 cents per pedigree, and 10 cents per transfer or duplicate certificate. Also, that a Secretary be appointed at Montreal at such salary as the Executive Committee shall think fit to allow.

It was moved by Jos. Yuill, seconded by F. W. Hodson, and resolved, That all pedigrees that were allowed into the different books by an arbitration, that cannot be clearly traced, be suspended until additional information be obtained by the following committee appointed for the purpose of investigating and finally deciding whether these pedigrees can be accepted for the new book or not. This Committee consists of Messrs. R. Ness, D. Drummond, and H. Wade.

It was also finally resolved that the two Associations shall amalgamate on the basis of the resolutions as above. That the present directors of each Association be the directors of the Joint Association for 1898, and till the next annual meeting in February, 1899, which shall be held in the City of Montreal; also that the president of the Quebec Association be president and chairman of the Joint Association, and the president of the Ontario Association be vice-president of the Joint Association, and that the present Joint Committee be the Executive Committee for the Joint Association up to that date.

It was also resolved that the unprinted pedigrees of the Ontario Book be printed in the first part of the new volume in the same manner as before to prevent confusion in numbering, and that the fifth volume of the Quebec Herd Book, now being printed, be also accepted as a part of the series. It was also resolved that back

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numbers of both the Quebec and Ontario books be sold at the rate of \$1.00 per volume. These resolutions were adopted unanimously by the joint Committee.

On March 25th, 1898, an adjourned meeting of delegates from the Canadian and Dominion Ayrshire Breeders' Association was held at the office of the Exhibition Association, Montreal. Same delegates present as at the meeting held on March 10th, with R. Ness, of Howick, Que., in the chair.

At the meeting held in Ottawa, the Canadian Ayrshire Breeders' Association had stated that they would have to submit the basis of amalgamation as there agreed on to a special general meeting of the members of their Association.

The Secretary, Mr. Berube, then read the following resolution, passed at a meeting of the members of the Ayrshire Importers and Breeders' Association held in Montreal on the 21st inst., at which it was moved by Mr. J. L. Wilson, seconded by Geo. H. Muir, and resolved:

That the report be received and adopted, and that the Executive Committee be empowered to make final arrangements with the Special Committee of the Dominion Ayrshire Breeders' Association and enter into amalgamation.

It was then moved by Jos. Yuill, seconded by D. Drummond,

That we, the authorized delegates from the Ayrshire Importers and Breeders' Association, do hereby agree to amalgamate on the basis of resolutions already reported from the Ottawa meeting, and from this date, March 25th, 1898, there be only one Ayrshire Breeders' Association for the Dominion of Canada. Carried.

Moved by F. W. Stephen, and seconded by W. W. Ballantyne, and resolved:

That all properties now owned by the two Associations, such as cash on hand, Herd Books, pedigrees, and applications for pedigrees, etc., from this date be the property of the newly organized Canadian Ayrshire Breeders' Association.

It was also resolved: That the "Stay There" Ear Markers, made of aluminum, and supplied by Wilcox & Harvey Mfg. Co., of Chicago, Ill., U. S., be used by this Association, and a tag with a corresponding number to the number on the certificate be supplied with each pedigree, with the understanding that it be put in the ear of the animal that is recorded by that number; also that the Exhibition Associations be requested to pass resolutions insisting that these markers be in the ears of all animals of this breed exhibited.

It was resolved that the photograph of the late S. C. Stevenson be procured and published in the frontispiece of the fifth volume of the Canada Ayrshire Herd Book, and that one of Mr. R. Ness, President, and one of Mr. H. Wade, Secretary of the new Canadian Association, be published in the first volume of the new edition of the Canadian Ayrshire Herd Book.

On motion of J. C. Smith, seconded by D. Drummond,

It was resolved that the names of all persons recommended at the annual meetings for judges for the various exhibitions shall be selected by ballot, requiring a two-thirds majority. Carried.

The Constitution and By-laws, as prepared by Mr. Wade, were then read, corrected, and approved of.

CONSTITUTION.

PREAMBLE.

In consequence of the basis of union agreed upon by the representatives of the custodians of the Canada Ayrshire Importers and Breeders' Association and the Dominion Ayrshire Breeders' Association, at a meeting held in Ottawa, Thursday, the 10th day of March, 1898, it becomes necessary to revise the constitution.

ARTICLE I.

Sec. 1.—Name. This Association shall be called *The Canadian Ayrshire Breeders' Association*.

ARTICLE II.

Sec. 1.—Membership. The present members of the Canadian Ayrshire Breeders and Importers' Association and the members of the Dominion Ayrshire Breeders' Association shall constitute the original members of the Association.

Sec. 2.—Any person taking an interest in Ayrshire cattle who, having signified to the Secretary his desire to become a member and pay such fees as may be prescribed by the By-law, may do so.

Sec. 3.—Defining Membership. Every member shall be an annual member.

Sec. 4.—Membership, how terminated. A member may at any time withdraw from the Association by giving three months' notice in writing to the Executive Committee, through the Secretary, providing he has paid up all his fees.

Any member who shall fail to observe any rule, regulation or by-law of the Association, or whose conduct shall be, in the opinion of the Executive Committee, prejudicial to the interests of the Association, may be suspended by the Committee from the privileges of membership, and the Committee shall report all such cases to the general meeting of the Association, when, after the suspended member shall have been heard (if he so desires), it shall be competent for a two-thirds majority of those present and voting to remove such person from the membership of the Association. Information that it was intended to propose such a resolution shall have been given in the notice calling the general meeting.

ARTICLE III.

Sec. 1.—Object of the Association. To preserve the purity of Ayrshire cattle and to further the interests of the breed in every legitimate way.

ARTICLE IV.

Sec. 1.—Income of the Association. The income and property of the Association, from whatever source derived, shall be applied solely towards the promotion and furtherance of the objects of the Association.

ARTICLE V.

Sec. 1.—Enumeration of officers: The officers of this Association shall consist of a President, a Vice-President and one Vice-President from each of the Provinces in the Dominion represented, a Secretary, also Secretary in any Province that may require one.

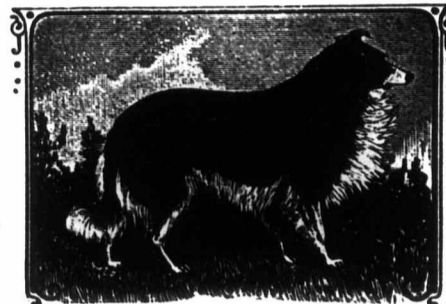
Sec. 2.—The term of office of the President and Vice-President shall be one year, and until their successors are elected. The term of office of the Secretaries shall be during pleasure.

Sec. 3.—Directors elected. The Directorate shall consist of fourteen members, seven from

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Quebec and eastward and seven from Ontario and westward, five of whom shall form a quorum, and that they choose from amongst their number a President and Vice-President. That the term of office for Director be two years, after the first year. That the annual meeting be held alternately in Montreal and Toronto. When held in Montreal the seven eastern directors' term of office will expire, and when held in Toronto the seven western directors' term of office will expire. The annual meeting to be held in the month of February in each and every year.

Sec. 4.—At the annual general meeting in each year the Directors shall elect from amongst themselves six members to serve on the Executive Committee for that year, three from the east and three from the west. The President and Vice-President shall be ex-officio members of the Executive Committee.

ARTICLE VI.

Sec. 1.—Officers' duties. President: The President shall preside at all meetings of the Association and at the Executive Committee; shall appoint all other Committees not otherwise provided for; exercise a general supervision over all the affairs of the Association, and perform such other duties as may be prescribed from time to time by the Association.

Sec. 2.—The Vice-Presidents shall in the absence of, or, if on the request of the President, perform his duties. The Vice-Presidents from the more remote Provinces shall, if necessary, form branch organizations of this Association, to be governed by similar rules, regulations or orders. He shall, when necessary, convene meetings of the members of this Association residing in the same Province, appoint a Secretary, if business of sufficient importance to allow of such being done; if not, he shall act as Secretary himself, reporting all business done to the Executive Committee at headquarters.

Sec. 3.—The Secretary shall keep a full and true account of the proceedings of the Association and of the Executive Committee; receive all moneys paid in for the various purposes of the Association; attend to all correspondence of the office, and sign all pedigree certificates. As editor of the Herd Book, he will examine and revise the proof of each book, and will be the responsible officer of the Association. To be remunerated by a commission.

Sec. 4.—The Eastern Secretary shall keep a full and true account of the proceedings of the Executive Committee of his Province; shall assist breeders to fill up their applications, keep a copy of such forms in the letter book, or enter it up in the ledger, sending the original application for pedigrees, with fees, to the office where the certificates are issued, and do such other service as the President, Vice-President or Local Committee shall require, and to receive what salary such Committee shall determine upon.

Sec. 5.—The Directors shall have power to do all that may be incidental or conducive to the objects of the Association, and shall be generally charged with the administration of its affairs and shall have the power of the appointment and dismissal of the employees of the Association. They shall cause all moneys received by the Association to be deposited in one of the chartered banks, and all payments shall be made by cheques signed by the President and countersigned by the Secretary. The Directors shall convene special meetings of the Association from time to time as occasion may require. A meeting of the Association shall be called at any time by the President at the request of six members of the Association.

Sec. 6.—A regular annual meeting of the Association shall be held in the month of February in each year, for the purpose of the election of members of the Directorate, to receive the report of the audit of the accounts, and to appoint auditors for the ensuing year, and to transact any other business that may be presented.

Sec. 7.—The voting shall take place as follows: Each member who wishes to vote shall give a voting paper with the names of seven members of the Association written thereon for whom the member desires to vote. The Chairman shall then appoint scrutineers, who will meet privately and count the votes and present the count to the Meeting, and the members having the largest number of votes shall be declared elected.

Sec. 8.—All matters, when not otherwise provided for, shall be decided by a majority of votes of the members present, and in case of an equality, the Chairman shall have the casting vote.

BY-LAWS.

Sec. 1.—Persons desirous of becoming members shall notify the Secretary, pay the entrance fee, and agree, if elected, to conform to the rules of the Association, and not to withdraw without giving three months' notice of their intention of doing so.

Sec. 2.—Members shall pay an annual subscription of \$2, which annual subscription shall be due and payable on the first of January of each year.

Sec. 3.—When any one becomes a new member during the last quarter of any year, his annual subscription shall be counted as being paid for the ensuing year, but he will not be entitled to receive the publication of the then current year free.

Sec. 4.—Under the Constitution the Executive Committee may suspend any member, and a two-thirds majority of the Annual Meeting shall remove any person from membership in the Association, should the conduct of such person prove to be derogatory to the character or prejudicial to the interest of the Association.

Sec. 5.—Members shall keep the Secretary advised of their post-office address, and all communications shall be considered as delivered which have been mailed, properly addressed and prepaid.

Sec. 6.—Ten days before any general meeting, notice thereof and the business to be transacted thereat shall be mailed to every member.

Sec. 7.—No member whose subscription is in arrears shall be allowed to take part in any meeting until such arrears are paid.

Sec. 8.—Directors shall meet from time to time, as occasion requires, at the call of the President.

Sec. 9.—A revising Committee, consisting of five members, shall be appointed by the Directors each year, of whom three shall form a quorum, whose duty shall be to investigate all pedigrees reserved for their decision by the Secretary, or the integrity of which may have been called into question. This Committee shall meet at the call of the Secretary. All pedigrees considered not up to the standard shall be reported to the Directorate at the next

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MARS, bright scarlet
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METEOR, salmon, wings pink, veined
MRS. ECKFORD, primrose yellow
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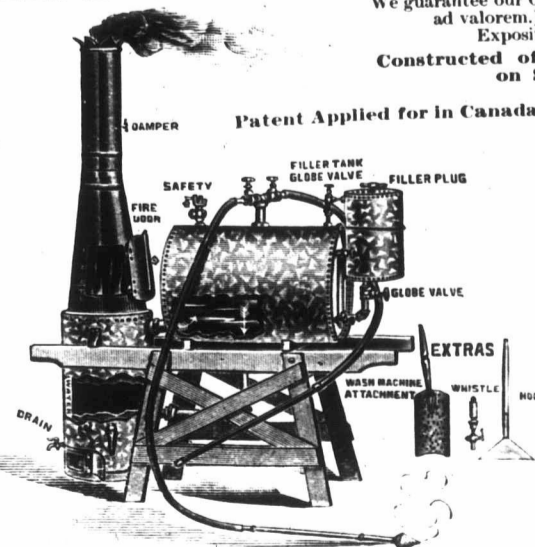
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meeting for final adjudication. The interested party or parties to receive timely notice of the same from the Secretary, that he or they may have the opportunity of attending at such meeting in his or their own interest.

Sec. 10.—The Secretary shall be directly responsible to the Directors for the discharge of the various duties which he may be called upon to perform.

Sec. 11.—All the moneys received shall be entered by the Secretary in the cash book, and shall be deposited in one of the chartered banks. The directors shall pay the Secretary small sums for postage, etc., and accept receipts for postage stamps received and used.

Sec. 12.—No animal shall be admitted for registry in the Canadian Ayrshire Herd Books except those whose pedigrees trace in all their crosses to imported animals registered in the Scotch Herd Book. Registrations in the Scotch Herd Book of stock imported previous to 1890 will not be required; those imported in 1890 must trace to ancestry distinctly designated, but, owing to the difficulty of keeping proper records prior to that date, it will be sufficient to know that the ancestry has been imported.

Sec. 13.—Fees. Quoted in March meeting.

Sec. 14.—After the rules for recording pedigrees have once been adopted and established, no charge thereof shall be made, except by a vote of two-thirds of the members present at the annual meeting, notice being given one year previously of the proposed change, which has been filed with the Secretary and the same published in some stock journal of general circulation in the Dominion.

Sec. 15.—At any regular or special meeting of the Association these By-laws, except section 12, may be changed or amended by a majority of all the members present voting.

The distinguishing symbol in the Canadian Ayrshire Herd Book will be a dash as —100—.

(Signed) H. WADE, Secretary,
DANIEL DRUMMOND.

PURCHASE OF THE PRINCE EDWARD ISLAND HERD BOOK.

At a meeting of the Special Committee to examine pedigrees, held at Montreal on July 23rd, 1888 (present—R. Ness, president; D. Drummond, Petite Cote, Que.; and H. Wade, Secretary), Toronto; the Secretary stated that Mr. Gardiner, of Charlottetown, P. E. I., had offered to sell the copyright and manuscript of the Prince Edward Island Herd Book for \$100. The Committee, as far as they could, authorized the Secretary to obtain the records. It was also thought best to secure the Ayrshire papers from Mr. Rodden, even if it were necessary to pay something for them. The Secretary was also requested to send certificates and tags to the breeders direct, instead of to the Montreal office, where they would have to be remailed at an additional postage.

At a meeting of the special Executive Committee, held at the Agricultural tent on the Industrial Exhibition grounds on the 7th of September, 1888 (present—R. Ness, President; W. M. Smith; Jos. Yuill; W. F. Stephen, Trout River, Que.; F. W. Hodson, and H. Wade), the minutes of the special committee meeting, held in July at Montreal, were read and considered.

It was moved by F. W. Hodson, seconded by Jos. Yuill, and resolved, That this Committee approve of the action taken by the special committee at Montreal in authorizing the Secretary to pay \$100 for the Prince Edward Island Ayrshire Herd Book and goodwill, and confirm the agreement.

F. W. Hodson moved, seconded by Jos. Yuill, that the Secretary be authorized to wait on Mr. Wm. Rodden, at Plantagenet, during the Ottawa Exhibition, and make the best arrangements he can to procure the books and papers belonging to the Association held by the late Wm. Rodden. Carried.

It was moved by W. F. Stephen, seconded by W. M. Smith, and resolved, That the arrangement made by the special committee in Montreal, as regards certificates being sent direct to the breeders, be confirmed, as far as the pedigrees written in English are concerned. As to those written in French, the Secretary be authorized to have certificates prepared with one side printed in English and the other in French, both sides to be signed by the Registrar; the French side to be filled in by the Montreal Secretary.

A general conversation took place as to the amount of salary to be paid the Eastern Secretary. The general opinion of the meeting was that \$10 per month would be sufficient. No motion, however, was presented, and the matter was left in abeyance.

A special meeting of the Eastern Committee was held in Montreal on the 16th of December, 1888. Present—R. Ness, Chairman; John Morrin, Daniel Drummond, W. F. Stephen, and H. Wade.

Mr. Wade explained that he had asked the President to call this meeting to arrive at an understanding by taking stock, and to get a financial statement of the Eastern Association up to the time of amalgamation and since, as well as to fix the amount of salary for the Eastern Secretary, in order to get a settlement with him.

Mr. Berube then presented a statement of their Association up to amalgamation on March 25th, 1888. All that I remember is that there would be a slight deficiency after paying for the 5th Volume. The financial statement since then will be found in the Treasurer's report.

Moved by D. Drummond, seconded by John Morrin, that all the Herd Books, vouchers, and papers, with the exception of the office set of Herd Books, be packed up in cases and sent to the Toronto office; also that a list of the present members of the Canada Association be sent, as it was deemed more expedient to collect membership fees and disperse Herd Books from the one office.

It was resolved that Mr. Wade send out cards to all members of the combined Association, calling attention to the fact that the fee of \$2 will be due on the 1st of January next for 1889, and to send it direct to the Toronto office. It was resolved that a set of rules be provided for the guidance of the Secretary at Montreal, and that one copy be sent him.

The matter of the salary of the Eastern Secretary was taken up. Mr. Berube was called in and stated that he had a great deal of work to do, which was well worth \$25 per month. After much consideration, the Committee agreed to pay him \$100 from the first of June, 1888, to the date of the Annual Meeting in February. After deliberation, Mr. Berube agreed to accept this sum, which was paid to him, he stating that he could not afford to do the work

for the future at the rate of \$10 per month, which was offered to him.
 Mr. Wade stayed over till the next day and had a full settlement up to date.
 The following is a list of books sent to the Toronto office:
 Volume 1.—93 copies bound in cloth.
 Volume 2.—121
 Volume 3.—160 (62 bound in cloth, 98 in paper).
 Volume 4.—114.
 Volume 5.—90 copies bound in paper.
 578 copies in all.
 (Signed) H. WADE, Secretary.

At a meeting of the Directors of the Dominion Ayrshire Breeders' Association, held in the Albion Hotel, Toronto, on Jan. 17th, 1899, the Secretary read the minutes of all business transacted at and since amalgamation. A committee was appointed to draft a resolution in the following manner:
 Be it resolved, That we, as a Board of Directors, having heard the report of the Committee appointed at our last Annual Meeting to investigate the matter of amalgamation, do hereby move that the same be received and adopted.
 (Signed) W. S. STREWART,
 R. S. BROOKS,
 A. KAINS,
 Committee.

Live Stock Associations Meetings
 WILL CONVENE AS FOLLOWS:

The annual meeting of the CANADIAN HOLSTEIN-FRIESIAN ASSOCIATION at the Albion Hotel, Toronto, February 7th, at 2 p. m.
 DOMINION SHEEP BREEDERS' ASSOCIATION.—February 7th, at 10 a. m., the directors will meet at the Palmer House, corner King and York streets, Toronto; and at 2 p. m. the annual meeting will be held in Shaftsbury Hall, 26 Queen St. west, Toronto.
 The annual meeting of the DOMINION SHORTHORN ASSOCIATION at Shaftsbury Hall, Toronto, February 8th, 11 a. m. Directors meet at Albion Hotel, February 7th, 8 p. m.
 DOMINION SWINE BREEDERS' ASSOCIATION.—February 8th, at 7 p. m., the directors will meet at the Palmer House, Toronto.
 The annual meeting of the CANADIAN SHIRE HORSE ASSOCIATION, Albion Hotel, Toronto, February 9th, 10 a. m.
 The annual meeting of the CANADIAN CLYDESDALE ASSOCIATION, Albion Hotel, Toronto, February 9th, 2 p. m.
 The CANADIAN HORSE BREEDERS' ASSOCIATION, Albion Hotel, Toronto, February 9th, 8 p. m.
 DOMINION CATTLE BREEDERS' ASSOCIATION.—February 9th, at 10 a. m., the directors will meet at the Palmer House, Toronto; and at 2 p. m. the annual meeting will be held in Shaftsbury Hall, Toronto.
 PROVINCIAL FAT STOCK AND DAIRY SHOW ASSOCIATION.—February 10th, at 10 a. m., the members will meet at the Palmer House, Toronto.
 The annual meeting of the CANADIAN AYRSHIRE ASSOCIATION at Montreal, February 15th.

GOSSIP.

Winona Nursery Co.—The Winona nurseries are situated in the midst of one of the most favored fruit sections in Canada, between Hamilton Mountain and Lake Ontario, and managed with skill and great care. They enjoy an enviable reputation for the vigor of stock and trueness to name of varieties. They are prepared for a heavy season's trade in fruit and ornamental lines, and do business direct with fruit-growers and farmers, thus saving agents' commission.

W. W. Everett, breeder of Jersey cattle, Chatham, Ont., writes:—"Stock doing fine; have just completed some new stabling, including watering basins (Woodward pat.), put in by the Ontario Wind Engine & Pump Co., Toronto, which are proving very satisfactory; cows increasing in milk flow under unfavorable circumstances. Stock in good demand; sold recently one Jersey cow, Croton's Twinkle 3rd, to F. H. Crow, of Louisville. She is now making 12 pounds of butter per week on farmer's feed; also sold to Mr. Jed Tuttle, jr., of Iroquois, Ont., one bull calf, nearly pure St. Lambert, dam Vita of Glen Allan, by Nell's John Bull; sire Adolphus of St. Lambert, by Rambler Pogis; dam of Adolphus Lady Lill, by Mighty Dollar. I am offering Lady Lill for sale; she is bred to Handsome Rioter, a very fine stock bull, bred by Mrs. E. M. Jones, sired by Lillium's Rioter, dam Hugo Beauty 2nd. We have also some very fine young bulls for sale, very cheap for quality.

SEED WHEAT WANTED.

A farmers' association in Prince Edward Island would be pleased to get the address of any farmers in Western Canada having Russian and Fife wheat for sale suitable for seed. Parties having such for sale may do well by advertising it in the FARMER'S ADVOCATE.

CREAM SEPARATORS.

Write to Headquarters or Ask Name of Local Agents.

LISTER
 (LIMITED)

18 St. Maurice St., Montreal,
 or King St., Winnipeg, Man.

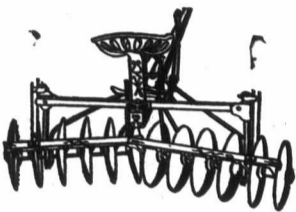
Farm Help Wanted!

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

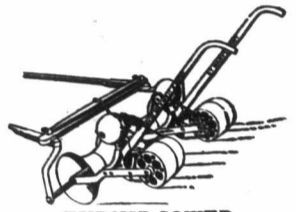
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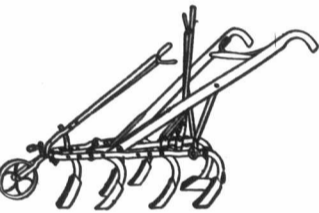
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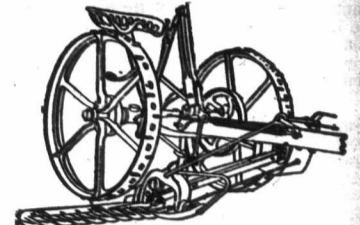
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Binders, Reapers, Mowers,
 Hay Rakes,
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Send for Illustrated Catalogue.

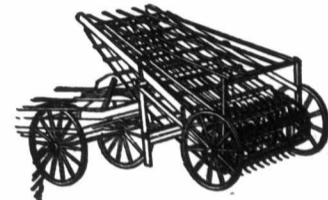
AGENTS WANTED
 IN ALL UNOCCUPIED TERRITORY.



THE MAXWELL MOWER.



TEDDER.



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



CONCRETE STORE OF W. F. FORREST, ATWOOD, ONT.
 Dimensions: 22 x 60 x 29 feet high. Built with Thorold Cement.

Atwood, Ont., Dec. 16, 1898.

Estate of John Battle, Manufacturers of the Thorold Cement, Thorold, Ont.:
 GENTLEMEN,—I desire to say that I used your Thorold Cement in building a store here in Atwood. I found the Cement to be first quality in every respect, and it has given me the best of satisfaction, and I recommend it cheerfully to any who intend using cement in their buildings.
 Yours truly,
 W. F. FORREST.

For Free Pamphlet with full particulars, address
ESTATE OF JOHN BATTLE,
THOROLD, - ONTARIO.
 Agents wanted in unrepresented districts.

PEACH FARM FOR SALE!

Near Leamington, Ontario. One of the choicest young Peach and Fruit Orchards in Canada (Peaches, Plums, and Cherries), just nicely in bearing. Will sell in parcels of five acres or more to suit purchasers, and upon easy terms. This property is in the most southerly and which is considered the best Fruit District in Ontario, and is beautifully situated on the Main Road, along which extends the Natural Gas Co.'s mains. Apply at once for full particulars, personally or by letter, to

EDMUND WELD,
 SOLICITOR, ETC.,
 LONDON, ONT.

NIMMO & HARRISON
 Business and Shorthand College.

I. O. O. F. Building, 2 College St., Toronto.
 Thorough, practical, up-to-date courses: COMMERCIAL SHORTHAND, TYPEWRITING, ENGLISH, CIVIL SERVICE. Individual instruction. Call or write for free information.

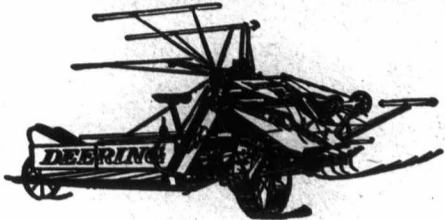
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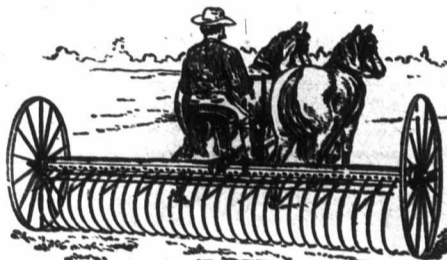
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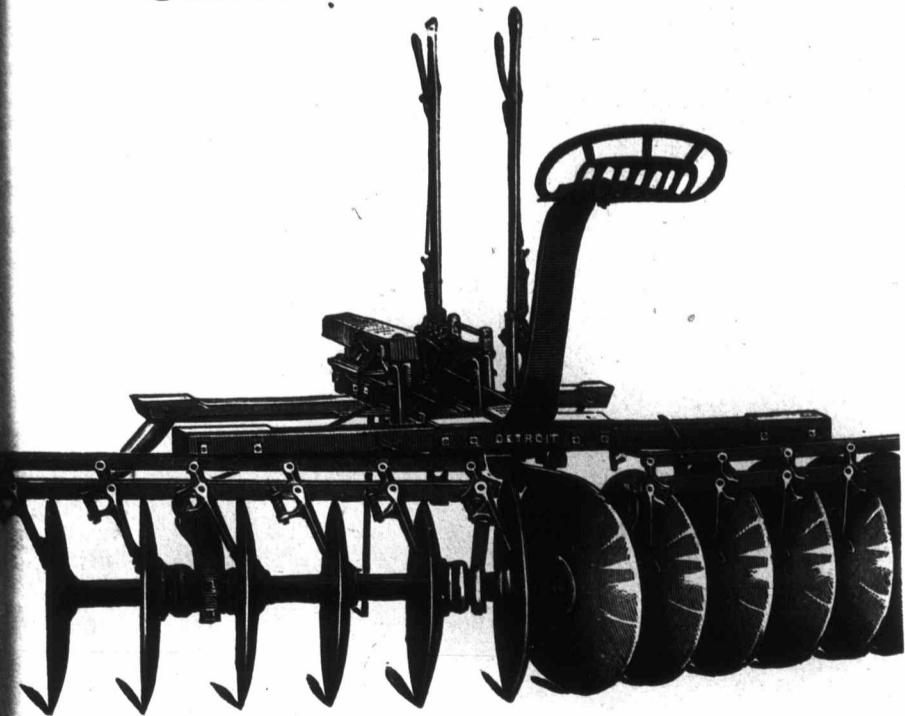
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HEAD OFFICE AND WORKS :

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THE DETROIT DISK HARROW

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

TORONTO BRANCH, 77 JARVIS STR

GOSSIP.

J. M. GARDHOUSE'S SHIRES, SHORTHORNS, AND LEICESTERS.
At Mr. J. M. Gardhouse's farm, near Highfield station on the G. T. R., Ont., a short time ago we saw a well-managed collection of stock in the vigorous bloom which the spirit of the times warrants. Among the Shires are a few strong, useful females, possessing good size and many special individual points of merit. Queen of Highfield, by King of the Castle, and out of Maggie May, by England's Glory, is a splendid type of a brood mare, with sufficient size and plenty of the right kind of bone. She has frequently distinguished herself in the showing by winning the highest honors. In 1896 and 1897 she won all the firsts she competed for, both at Toronto Industrial and the spring shows, including sweepstakes over all ages with imported mares in competition. She is considered to be safely in foal to their new horse Active, and much is expected of the offspring. Some three or four mares are expected to drop foals in the spring to the same sire. We were shown a very promising yearling horse colt, by imp. Blagdon, and out of Smiler, by King of the Castle, that possesses lots of style with a good amount of bone.
At the head of the herd of some 27 Shorthorns is the Scotch bull Prime Minister 15290, by Chesterfield (57049), out of Princess Lovely, by Field Marshal. He is a bull widely known as a sire in Canada, having done valuable service in several prominent herds. He was bred by Mr. Duthie, of Collynie, and imported by Mr. D. D. Wilson, Seaforth, and employed and exhibited successfully by him, before leaving the highest winners in those days, since which time he has performed service in such herds as would warrant the approval of the foremost fanciers of the breed. Previous to Prime Minister's purchase, the imported bull Scottish Pride, by Pride of the Morning (6454), and out of Missie 142nd, did two years of satisfactory service in the herd of the late Mr. R. B. Ross, by Field Marshal, and her two-months calf, by the Collynie-bred bull, My Lord, is a very promising youngster. Verbena's Blossom, by imported Eclipse 1251, and out of Verbena (imp.) 530, is a large, thick, roan cow, which is credited with many good offspring. Her sire, before leaving Scotland, was exhibited and won many prizes at the highest shows, and her two-months calf, by the Collynie-bred bull, My Lord, is a very promising youngster. Verbena's Blossom, by imported Eclipse 1251, and out of Verbena (imp.) 530, is a large, thick, roan cow, which is credited with many good offspring. Her sire, before leaving Scotland, was exhibited and won many prizes at the highest shows, and her two-months calf, by the Collynie-bred bull, My Lord, is a very promising youngster. Verbena's Blossom, by imported Eclipse 1251, and out of Verbena (imp.) 530, is a large, thick, roan cow, which is credited with many good offspring. Her sire, before leaving Scotland, was exhibited and won many prizes at the highest shows, and her two-months calf, by the Collynie-bred bull, My Lord, is a very promising youngster.

NOTICES.

Lane Express Almanac.—The Agri-Almanac for 1899, issued by the Mark Lane Express Company, is a useful compilation of especial interest to British farmers and gardeners. Its many special articles upon horticultural and agricultural topics are exceedingly interesting and instructive, and its illustrations of live stock and other illustrations will enlighten the many well-printed illustrations. It sells for 9 pence, post-paid, in England, and is published by the Mark Lane Express, 1 Essex St., Strand, W. C., London.
More people adapt flower culture to make a success of it, and the trouble largely due to a lack of proper understanding of the nature and needs of the different plants grown. A new and simply written, free from technicalities but full of hints, has recently been written by Mr. Rexford, dealing with soil, watering, insect enemies, propagation, summer house plants, and the growing of many popular domesticated flowers of the day. It is published by the Mark Lane Express, 1 Essex St., Strand, W. C., London.
The name botany, except to those who have studied plant life technically, usually is a hazy and difficult subject to understand in fact, the word science, which simply correct knowledge, is too often repugnant to the average mind. It is not, after all, so wonderful as that, this is the case with most of the books on that subject which are written that none except ardent students will follow them closely enough to all thoroughly the structure and function of the various organs of plant life. Mrs. MacNair Wright, recognizing the work, has recently written a small work, Botany of Plant Life, in a most interesting and readable form. It is divided into twelve chapters, each adapted to a month of the year, and devoted to plants that are in flower during that month. Her treatment is simple and practical. The book is intended for general reading and supplementary study. It sells for 50 cents in binding by the Penn Publishing Co., 923 street, Philadelphia, Pa.

HORSEMEN! THE ONLY GENUINE IS



See large advertisement on page 421, Sept. 1st (1898) issue, and which is of unusual interest to the readers of the FARMER'S ADVOCATE. And any horseman interested in a reliable remedy can well afford to investigate the matter.

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21 Front St., West, Toronto, Ontario.

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MADE IN
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Send for our new Catalogue of Stable Fittings. We make and carry in stock the finest and most complete line in Canada.

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CHAMPION EVAPORATOR

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



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WILL YOU HAVE THE BEST, OR THE OTHER WITH NO REPUTATION?

ROGERS' "PEERLESS" IS THE BEST OIL

KNOWN FOR FARMERS' MACHINERY AND GENERAL PURPOSE. GREAT SAVING TO USE IT. WON 12 GOLD MEDALS. HARDWARES ALL SELL IT. KNOWING ONES WANT IT.

QUEEN CITY OIL CO., Limited, TORONTO.
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FOR SALE!

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

Price, One Hundred Dollars.
Address—**"SCALES,"**
Care of FARMER'S ADVOCATE.

\$8 to \$15 Save on **WIRE FENCE** to weave your own fence of Colled, Barbed or Smooth Wire. 22 inches high, at 25 Cts. per Rod. 300 buys wire for 100 rods. Agents Wanted. Catalogue Free. **CAWTEE** Wire Fence Mfg. Co. Box 58, Newark, O.

YOU CAN USE

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

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