

**PAGES
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FARMER'S ADVOCATE

AND HOME MAGAZINE

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

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Vol. XXXII.

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No. 424.

EDITORIAL.

Reader, can you not, with advantage to your farm and direct profit to yourself, add a small flock of well-bred sheep to your stock for 1897? Utilize the practical series of letters on this subject by some of the foremost flockmasters in Canada just published in these columns.

Reader, can you not, by an earnest and systematic course of feeding, weeding, and breeding, make your herd of dairy cows a better paying part of the farm stock? More and better milk at less cost would be a good motto for 1897, whether the milk goes to the cheese factory, creamery, or is worked up in the farm dairy.

The U. S. Secretary of Agriculture.

President-elect McKinley, of the United States, has chosen as Secretary of Agriculture, in his Cabinet, Hon. James Wilson, Director of the Iowa Experiment Station. Mr. Wilson is a native of Ayrshire, Scotland, where he was born in August, 1835. With his parents he came to Connecticut, at the age of 16 years, but in a short time they moved West. He received a public school and college education and was brought up a thoroughly practical farmer and stockman. He served in the Iowa Legislature, in Congress, on the Iowa Railway Commission, and on the boards of several important educational institutions. In 1891 he was chosen Director of the Iowa Experiment Station and Professor of Agriculture in the Iowa Agricultural College at Ames, where he is to be succeeded by Prof. C. F. Curtiss, whose visits to Canada to secure subjects for his famous sheep and lamb feeding experiments are well remembered by our readers. The work that Prof. Curtiss has already accomplished augurs well for his future in the more responsible position to which he has been called.

The New Quarantine Regulations.

In pursuance of the memorandum of agreement between the Minister of Agriculture for the Dominion and the Secretary of Agriculture for the U. S., relating to quarantine of live stock, published in our last issue, a new set of regulations has been issued by each of the parties to the agreement. We append a list of points which have been declared quarantine stations:—

In Canada: P. E. I.—Charlottetown; N. S.—Halifax; N. B.—St. John; Que.—Quebec (Levis); Ont.—Point Edward (Sarnia); Man.—Emerson; N.-W. T.—Estevan, Wood Mountain, Willow Creek, East Milk River, West Milk River; B. C.—Kootenay, Bedlington, Waneta, Fort Sheppard, Osoyoos, Huntington, Douglas, New Westminster, Vancouver, Victoria.

In the United States the following points are designated: Maine—Vanceboro and Houlton; Vermont—Beecher's Falls, Island Pond, Newport, Richmond, and St. Alban's; New York—Rouse's Point, Ogdensburgh, Charlotte, Suspension Bridge, and Buffalo; Michigan—Port Huron; Minnesota—Duluth and St. Vincent; Washington—Port Townsend.

It will no doubt strike breeders of pure-bred stock, especially in Ontario and Quebec, that the number of stations in these Provinces is entirely inadequate for the probable requirements of importers, and that there ought at least to be facilities for inspection and quarantine, if necessary, at some point between Montreal and Quebec, and also at Niagara Falls or Fort Erie. We observe, however, a clause in the regulations providing that "the Minister of Agriculture is empowered to cancel, as stations, any of the places above mentioned, and to select such other sites in exchange for or in addition to the above as he may from time to time deem expedient." Time and experience will doubtless determine whether additional stations will be required, or other alterations needed, and intending importers from the Eastern States should state

their case to the Minister in good time so that it may have his consideration and decision.

If the cattle imported have been subjected satisfactorily to the tuberculin test at the point where purchased, which is the only wise course, there should be little difficulty in procuring a permit to enter at any railroad point on the frontier.

With regard to the importation of cattle from Europe, we are in a position to state that the interpretation of the Minister of Agriculture of clause 3 in the regulations published in our last issue is that there must be an understanding between the Canadian and United States governments before either can raise that quarantine. There is pleuro-pneumonia in England at present, and therefore we must maintain our 90 days' quarantine against England as against all other European countries. It has been removed against the United States because pleuro-pneumonia has been effectually stamped out there.

Management of Swine, and a Warning.

We need offer no apology for devoting considerable space in this issue to the subject of hog raising. Considering the care they often get, and the quarters occupied, what farm animal gives, year in and year out, a better return for food consumed than swine? We believe it is also true that no animal requires greater judgment and care in feeding. With the growth of winter dairying more fall litters are being raised and more winter feeding done, and this is just the season when hogs are found crippled up and otherwise ailing from injudicious feeding. Several of our experienced readers are contributing on this subject; breeders of Berkshires, Yorkshires, Chester Whites, feeders and experimentalists being represented, and others will follow.

In this connection we would remind the proper authorities of the need for keeping a sharp eye upon contagious swine diseases. The *Iowa Homestead* puts the loss in that one State for cholera last year at the enormous sum of \$15,000,000. Other swine-raising States have been devastated in like manner and the authorities there are simply at their wits' end at the appalling magnitude of the task of "stamping out" before them. Let us take warning. With infinite care in breeding and feeding for the past ten years, Canada has built up a splendid reputation abroad and an industry has been developed which must not be jeopardized through any laxity either on the part of Government, feeder or breeder.

The Outlook for Horse Breeding.

In consequence of the exceedingly low prices prevailing for horses in the last few years farmers generally have been so discouraged with the business that they have largely discontinued the breeding of horses. This was probably good policy on their part. It certainly was in so far as it applied to ordinary or low class horses, for the country was manifestly overstocked with that class, which mainly accounted for the great fall in prices experienced. The introduction of the trolley cars in cities has to a large extent removed the market for the scrub class, and they have consequently been a drag on the whole industry; but it is gratifying to find that there has been sufficient demand for them at some price to reduce their number to such an extent that the market for horses generally is experiencing an upward tendency in prices, and that the outlook, so far as really good horses are concerned, is decidedly encouraging. A review of the returns of the Ontario Bureau of Industries for the last three years shows a gradual decrease of the number of horses in the Province. The returns give the total number as follows: 1894, 674,777; 1895, 647,696; 1896, 624,749; a decrease of 50,028 in three years. There is one feature of the report which is specially worthy of consideration and should serve as an index for the guidance of breeders, and that is that the greatest proportionate decrease is in the num-

ber of breeding mares. This fact is confirmed by dealers everywhere throughout the country, who are agreed in the statement that it is steadily becoming more difficult to find a sufficient number of first-class horses in all classes to supply the increasing demand for such. It is confidently predicted by those competent to judge, that the crisis in the horse industry is past. A shortage of good drafters, drivers, and export chunks is reported by dealers right at the threshold of an urgent demand.

Perhaps no man in America has better facilities or is more closely in touch with the market for high-class heavy harness horses than Mr. W. D. Grand, of New York, who handles a large proportion of the horses of this class which find their way to "Gotham," and much interest naturally attaches to his opinion as to the available supplies as recently expressed through the *Rider and Driver*, from which we quote:—

"As differing from last and previous seasons, which saw large consignments from the West and Canada and the disposal of many high-class animals, the current year, according to information at hand, will witness much smaller shipments generally. While, without an exception, every consignor who has made shipments to this market in the past has booked dates for sales this season, the offerings will in every case be much lighter than heretofore, owing to the great scarcity throughout this country and Canada of horses adapted to this market.

"That this scarcity actually exists in all sections I can vouch for from reliable reports from the principal horse centers, and from what I personally observed on a recent trip through Canada and the West. Breeding operations having practically ceased some three or four years ago, when values dropped to such a low standard, and the drain upon mature stock having caused a wholesale depletion of material in the hands of breeders, it is not to be wondered at that those who cater to the market have great difficulty in finding horses of the quality demanded here.

"In view of this condition of things, it seems to me that it should be apparent to the more conservative breeders that it is policy, from a business standpoint, to replenish their stock and enlarge the scope of their breeding operations."

Subsequent reports from other dealers and sources re the state of trade, demand for and scarcity of suitable horses more than confirm Mr. Grand's predictions.

These remarks apply equally to the supply of really first-class heavy drafters. There is an increasing demand for these, and prices have improved considerably. Reports have reached us of high-class heavy draft mares and geldings having been sold for as high as \$150 to \$200 each, and we have reason to believe that more of this class would be taken at similar prices if they were available, but they must be strictly first-class and large, weighing from 1,500 to 1,800 pounds, with good sound feet and plenty of clean, hard bone. The wide range in prices, even for heavy drafters, shows very clearly the folly of being satisfied with the raising of average horses, which are bringing all the way from \$50 to \$70, while many are being sold for much lower prices, when we consider that it costs no more to raise one that will bring \$100 and upwards.

The lesson to be learned from these facts would seem to be clearly that those who have mares of a good class will do well to put them to breeding, and should be especially careful to mate them only with first-class stallions of the type to which they belong or to which they most nearly approach. These remarks apply equally in the case of heavy drafts and to the most desirable types of carriage, saddle, and driving horses, for there is little room to doubt that there will be a demand at fair prices for tops in all classes. Let it be a fixed determination in the mind of every breeder to let no narrow thought of a present saving tempt him to adopt a false idea of economy by using a cheap sire that is below the standard of first-class, but to use only the best, the services of which are now held at a reasonable rate.

THE FARMER'S ADVOCATE AND HOME MAGAZINE.

THE LEADING AGRICULTURAL JOURNAL IN
THE DOMINION.

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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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Our Premiums.

Owing to the extra amount of valuable reading matter and advertising with which our space is crowded just now, we withhold the full page of premium announcements that has been running for several issues, but the premium offers are not withdrawn. One or more of these splendid premiums can yet be earned in almost any locality. For particulars read previous issues. Every mail is bringing us thankful letters from recipients, and what we appreciate even more, very strong expressions as to the practical service the paper is giving the farmers of the country. Old as well as new subscribers write on this point. There is yet ample time before spring work begins to secure many new readers. As an example of how much satisfaction our premiums are giving we might mention the case of one reader who earned a copy of the Bagster Bible and so pleased was he with it that he since set about a further canvass and earned two others, sending in nine new subscribers. We must also bespeak the patience of some of our contributors whose letters we are obliged for the reason above stated to hold over till a later issue.

Poultry Keeping.

Readers, have your hens been taking part in a go-as-you-please race in the past? By giving them a fair chance to pay their way they will likely return you a good dividend on what they eat. The general idea seems to be that, as ordinarily kept, they do not pay a money profit outside the eggs and fowls consumed on the farm, if, indeed, they are not kept at an actual loss. In our Christmas number Mr. G. W. Green forcefully pointed out that poultry keeping was an industry that might at a profit be far more generally carried on than it is at present. Several of our readers are taking up this subject elsewhere in a way that will prove of timely and practical value.

Better than Any Other Two.

"Enclosed please find \$1 to renew my subscription for FARMER'S ADVOCATE. I have just been taking it 2 years and I must say I would rather have the ADVOCATE than any other two papers I take. I wish you every success, as I think it's just what the agricultural classes want."

Mr. Macpherson's Letter Criticised.

To the Editor FARMER'S ADVOCATE:

SIR,—I have been much interested in reading Mr. D. M. Macpherson's article, in your issue of Feb. 1st, on "How can the ordinary farm be made to pay?" As a subscriber, and somewhat of a student of all methods of "intense" farming, will you kindly allow me a short space to offer a few criticisms upon his radical suggestions to our Governments, and also upon the phrase "ordinary farming" as applied to his methods.

There can be no doubt that the system adopted by Mr. Macpherson is the best known for the renewing of wornout farms and the maintenance of a maximum degree of fertility upon them. It is the system long pursued by the most successful farmers of England and Scotland and our own foremost Canadian agriculturists. But while eminently satisfactory from a pecuniary point of view to the individual farmer, it is not a self-contained system of farming (therefore not ordinary farming), because they obtain the stockers and feed to a large extent from outside sources, drawing thereby from the natural fertility of these contributing farms and pastures and depositing it upon a comparatively small plot of ground.

The only instance of natural enduring fertility of lands under cultivation is the Nile Valley, where Central Africa, by the annual overflowing of the Nile, contributes of its vast store of natural fertilizing elements to the lands impoverished by the growing of food necessary to man.

But the farms that are producing the raw materials necessary for Mr. Macpherson's farming operations are doing it, as he acknowledges, at a loss, and are furnishing him with steers, cows, bulls, feed and fertilizing elements at a price far below their value. They are only enabled to do this by drawing upon their natural store of fertility, which is gradually but surely being exhausted, when a Mr. Macpherson and his system will require to be put upon them and some other place be made barren that they may in turn be made to produce \$40 per acre yearly, and so on, *ad infinitum*.

The principal factor in Mr. Macpherson's system is the purchasing of cheap steers, county bulls, and cheap ordinals, as pea meal, bran, shorts, etc. (all of them ordinary farm products), and converting the whole into high-priced foods and a highly-estimated fertilizer balance. But if his suggestions were adopted by our Government, and all the counties of Ontario, for instance, be eventually brought under this system, where will they obtain the cheap bran, shorts, pea meal and oil meal to carry on their extensive feeding operations? Who will grow the steers at 2½ cents and the bulls at 1½ cents laid down on the farms to enable all these farmers to make a large profit by buying and feeding \$2,700 worth each of unfinished product? For I notice that Mr. Macpherson sells 60 veal calves—his proximity to the Montreal market enabling him to dispose of a large number easily. But if all the farmers of Canada—850,000—were to produce even 40 each annually, where will they obtain sale for 26,000,000 veal calves?

Mr. Macpherson does not tell us that it is profitable to raise them. We infer that he does not consider it is when he sells them for the extremely low figure of \$2.50 on an average.

Why does he not do some self-contained farming, and raise those 60 calves to maturity, thereby obviating the necessity of a yearly outlay of \$1,500? and also why does he not grow the necessary food required on an ordinary farm of 125 acres?

The farmers who are selling their stockers and their grains need not an agricultural awakening, but a commercial awakening to the fact that they are selling at a great loss to their farms what Mr. Macpherson and other large feeders are converting into profit on purchase money and fertility into their old wornout farms.

Why do not those farmers feed their own grains and finish their own beef and pork, the most profitable part of farm work, as Mr. Macpherson himself testifies?

It is plain to the most obtuse understanding that any system of farming adopted and propagated by a government, if it is to be for the benefit of a whole agricultural country, must be a self-contained system, or else one part of the country will contribute to the other to its own positive loss.

Northumberland Co., Ont. R. C. ALLAN.

Figures from Feeders Wanted.

To the Editor FARMER'S ADVOCATE:

SIR—I notice in the last issue of the FARMER'S ADVOCATE some very good letters on feeding cattle. All of the writers feed pea meal. Why not add bran with the meal? Bran is the safest and best feed to mix with meal that I know of. I have fed a few lots of cattle and I never had good success in feeding meal alone. Some of them feed three gallons of meal per day to each bullock. I would like very much if some one would figure out a profit in feeding three gallons of meal per day to cattle from the 1st of February to the 20th of May, with two feeds of hay and roots per day. I cannot believe it can be done with cattle at 4 cents per lb., and it does not look as though we can expect a better price than this.

Peel Co., Ont.
[NOTE.—No doubt some of the feeders who have been giving their experience in these columns will respond to the above request for information as to the profit of feeding meal.—EDITOR.]

STOCK.

The Feeding and Management of Swine.

The development of the Canadian pork industry in recent years has been most gratifying, but there are doubtless considerable quantities produced at a little or possibly no profit, and as we know that a loss for such an industry need not be sustained when the best methods in care and feeding are practiced, we are anxious to publish for the benefit of our readers the methods in vogue on the farms of men familiar with this branch of stock rearing. We therefore append the following questions, which, answered in the light of experience, will cover the ground fairly well. If any points of importance are omitted, our readers will feel free to deal with them as may be necessary. The subject is of peculiar importance at this time of dairy development, especially so when we recognize the high estimation in which Canadian bacon and hams are held in Great Britain, together with the extensive market yet awaiting our hog products in that country. The questions are as follows:—

- 1.—At what age do you choose to have sows farrow their first litters, and do you prefer one or two litters the first year, and also after that time?
 - 2.—(a) Which do you find most success with—fall or spring litters? and (b) how do you manage your spring-farrowing sows during the winter season with regard to quarters and food with a view to economy in feeding and welfare of the offspring?
 - 3.—How do you summer your brood sows, and what value do you place upon pasture and by-products of the dairy as summer foods for them?
 - 4.—How do you manage the sow and pigs from the birth of the litter to weaning time, and at what age do you prefer to wean them?
 - 5.—What would you recommend in the housing, general care, feeding, and exercise of pigs from weaning till marketing, looking to growth and good health?
 - 6.—At what age and weight would you market live hogs or dressed pork in order to obtain the greatest profit?
 - 7.—What is your estimate of the advantage or disadvantage of keeping the young pigs gaining rapidly without a halt from the time of weaning until they go to market?
 - 8.—What do you consider the most profitable ration to feed during the last two months of fattening?
 - 9.—Have you made any calculations as to the cost of a pound of pork, live or dressed, according to your method of producing it, and with what result?
- If any important points are omitted our readers will oblige by dealing briefly with them.

Successful Management in Swine Breeding —Extra Care for Fall Litters.

1.—I prefer having a sow farrow her first litter at about a year old, and as to her having one or two litters in a year, it depends very much on circumstances. To be successful with fall pigs the first thing to be considered is, have you good warm quarters for them, and if so, at the price pork is now selling and feed so low, I think they can be made profitable; but as a rule fall pigs do not do as well as spring pigs, as they cannot at all times get sufficient exercise, which I think is essential. I would not advocate turning young pigs out of a warm pen into the barnyard on a cold day, and we usually have a good many of them in winter; and as I have seen so many people make failures of fall litters, I think it is probably best to not have too many fall pigs, and to have them come as early as possible, say in September or early in October.

2.—I have been as successful with fall pigs as I have with spring litters, but they require more care. I never feed young pigs in winter cold slop feed till they are three or four months old, as it is apt to chill them. I always provide my spring-farrowing sows comfortable sleeping quarters, and allow them exercise in the barnyard part of each day; and as to what I would advise as the best and cheapest food depends on the price the different kinds of grain are selling at. I think barley is probably the cheapest food we have, and after they are safe in pig a few pulped roots might be mixed with the barley meal.

3.—I usually turn my brood sows out on grass in summer where they have access to water, and unless it is a very dry season I don't give them any feed. If the pasture is good, a brood sow that cannot make a good living on it should be disposed of.

4.—For the first few days after farrowing, feed sparingly on lactative food, and about a week after farrowing she may have full feed, and when the pigs are about three or four weeks old they should be provided with a trough, apart from the sow, and supplied with a little sweet milk for the first week or so; after that a little meal or shorts might be added. I prefer letting them remain with the sow till they are six or seven weeks old.

5.—Young pigs should be provided with comfortable quarters, and if the weather is warm I prefer letting them run out when they like; if not, let them have a run every day for a few hours, as they will as a general rule do better.

6.—Market when about 200 pounds, live weight, as after they attain about that weight it costs more to make a pound of pork. It costs much less to make a hundred-pound pig weigh 200 pounds than it costs to make a 200-pound hog weigh 300 pounds.

7.—I think it more profitable to attain the desired weight as soon as possible.

8.—That depends on the price of the different grains. I consider barley at the present price is the cheapest feed. I always feed it ground as fine as possible. But it is not always best to feed one kind of food exclusively, as I think a change is desirable.

9.—I have never made any exact calculation as to what a pound of pork has cost me, but I am satisfied at the present price of pork and feed it can be fed at a profit.

York Co., Ont. THOMAS TEASDALE.

Handsome Profits on the Right Stamp of Hogs.

The most suitable age for a sow to farrow should be determined by the condition of development. If she is well grown ten months would not be too young, but, generally speaking, from twelve to fourteen months is preferable, and if the sow be well cared for she should produce two litters per year. Spring litters are much more desirable than fall pigs. I have frequently seen pigs farrowed in March that would be fit for shipment almost as early as pigs that were farrowed in November. If fall pigs are produced it is well that they come early enough to attain a good size before cold weather. During winter I allow my sows as much exercise as they are willing to take, by giving them a good-sized yard to run in, and with warm, dry sleeping quarters. They are fed upon raw turnips, with a small quantity of mixed grain chop. When managed in this way the offspring arrive healthy and vigorous. Breeding sows can be fed during the summer by having access to clover pasture, with the addition of the product from the dairy. Great care should be taken that the young pigs arrive in a warm building; if chilled they seldom recover, and the sow is more liable to destroy her young when she hears them squealing from the effects of cold. The sow should only receive light rations until the pigs are from eight to ten days old. I have known many cases of serious results caused from full rations to the sow immediately after farrowing; rich food at this time has the effect of stimulating the flow of milk to such an extent that the young pigs become too fat. This is more likely to occur when the litter is not numerous, and the young pigs frequently die of apoplexy, or what is commonly known as "thumps." This difficulty may be prevented in two ways: judiciously when the pigs are young, and cause the pigs to take exercise. Allow the young pigs to remain with the sow until seven or eight weeks old, and I think it is economical that the pigs should be kept in the pen—if it is possible to have an outside yard to the pen so much the better—but I fail to see the economy of allowing pigs that are intended for the market to run at large. Put them in a pen, feed liberally, and get them ready for sale in as few months as possible. In the summer time endeavor to have some green food, such as clover, oats or corn, that may be cut and given to them. In winter, ensilage or roots of some kind. This is most important, as the good health of the pig depends upon a variety of feed, and some vegetable food must be given. One often hears the expression that "feeding for pork does not pay." I am fully aware that a large percentage of the hogs are kept at a loss, but this is usually caused from a want of knowledge in feeding and managing. If the right stamp of hog is bred there is no reason why a handsome profit cannot be realized, especially at the present price of coarse grain and mill feed. I do not think that there has ever been a time when the prospects for hog breeding were brighter than at the present, particularly when they are kept in conjunction with the dairy. Hogs are now very scarce and are in great demand, and farmers who are fortunate enough to have a number on hand will realize good paying prices for them. The most profitable age to sell is just as soon as they attain the weight that is most suitable for the export trade, viz., from one hundred and eighty to two hundred pounds (180 to 200 lbs.), and this should be attained at the age of from five to seven months of age, but in order that this may be accomplished no time should be lost, but keep them steadily growing from farrowing time to time of selling.

Hogs in Rape--How to Maintain Good Health.

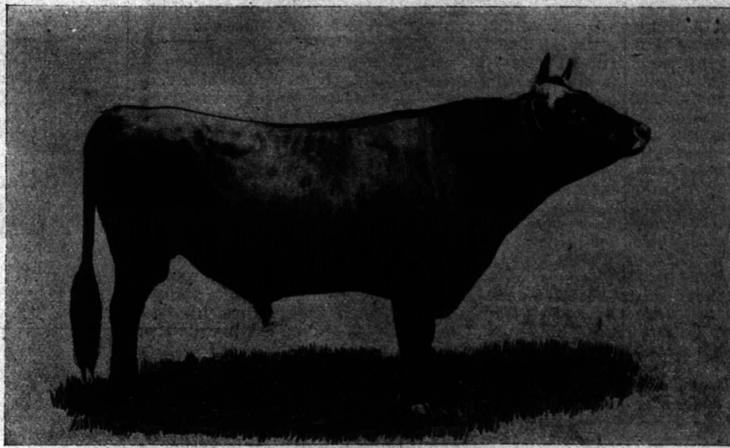
1.—I try to have my sows farrow at eleven or twelve months, and want two litters each year.
 2.—I find most success with spring litters, on account of there being more demand for them as breeders, but for slaughter only I don't find much difference. The fall litters sell for a higher price when fit for market, which pays for the extra labor. I let the sows have their liberty. Feed a few roots, with an occasional feed of grain. By giving them a comfortable place to lie, and access to water, they will take no harm until within two weeks of farrowing; they then require to be put by themselves in a quiet place, and fed liberally on soft, easily digested food.
 3.—I let the brood sows have the run of the pasture and nothing else (as we have no by-products from dairy) until the pasture fails, then feed any green grain, corn, etc., until the rape comes in, after which they are no more trouble, for I think a hog in rape is far more at home than "in clover."
 4.—After farrowing, I give the sow little or nothing for two or three days but house swill, then

commence giving a little bran and shorts, with a few boiled potatoes, gradually adding a little boiled peas, which you can keep on increasing until they form the greater part of the feed. At three weeks I castrate the hog pigs. I prefer letting them run with the sow until seven or eight weeks old, but in spring our object is to get them weaned as soon as possible, so as to get the sow bred again. We like the fall litters to arrive as early as possible.

5.—We have our pen convenient to the horse stable so that we can mix the manure of each together, which I think is an improvement to both. I don't think there is anything particular about housing of pigs, only to be sure to have them dry and comfortable, and not crowded. It is a wrong idea to think pigs will thrive in a dirty, crowded pen. When I wean young pigs I feed three or four times a day for the first month on warm milk or house slop, with shorts $\frac{1}{2}$, oat chop $\frac{1}{2}$, pea chop $\frac{1}{2}$ added. I then separate barrows from sows. Spay sows; in a few days they can be allowed to join the barrows again. In winter season I boil roots (pulped) and mix with meal (a mixture of grain), feed twice a day, and mix one meal ahead. In summer season I let them run at twelve weeks old in clover, and throw them a few peas; just let them pick the peas off the ground. Pigs need exercise every day, and if allowed to run each day they will require no medicine; but if severe weather and the ground is covered with snow, they must have salt, ashes, lime, sulphur, charcoal, and earth from the root cellar; mix all together, and let them have their will of it; even then they require exercise to keep them right. Exercise is just as necessary as feed, for they can't be kept growing and healthy without it.

6.—I market them at from 160 pounds to 200 pounds, live weight, and 120 pounds, dressed weight. At those weights we get the best prices.

A Sweepstake Jersey Bull.



(PRINCE FRANK 33972).

Sweepstake Jersey Bull at the Western Fair, 1896. Owned by Messrs. Humpidge & Laidlaw, London, Ont. For particulars see Stock Gossip, page 94.

7.—I think the only way to get profit out of pigs is to keep them constantly gaining. The food is all lost that they consume while not growing, besides the pig gets into a stunted, deranged state which it seldom outgrows. To obtain the best results they should be kept in good condition all the time, and then if the market takes a jump you are sure to have some that will go.

8.—The most profitable ration to feed the last few months is to feed as I have stated above; if fed in that way they want no extra finishing touches; they are ready on call. The demand is not for fat hogs; nowadays they want what they call long, lean fellows.

9.—I have made no accurate calculation of the cost of production, but I think that if a farmer can manage without hiring extra help on account of keeping hogs that pork can be raised at 3c. per pound, live weight, especially now when coarse grains are so cheap. Just now there is nothing a farmer can devote his attention to that will pay like pork, owing to pork selling well at this season of the year and coarse grains exceptionally low.

Roots for Wintering Brood Sows.

1.—I prefer to have young sows ten to twelve months old before farrowing their first litter, so as to give them a chance to mature, but I do not see any reason why she should not suckle two litters each year after, until she ceases to breed good, even litters. Perhaps breeding while young has a tendency to increase the milking qualities.

2.—I find spring litters the most profitable, as there (a) is the greatest demand in the spring for breeding stock, but from the standpoint of producing bacon for the export trade I believe early fall litters the most profitable, if fed plenty of roots, with some corn and the by-products of the dairy. Not only is the price higher, but the manure is made much better use of than is generally done in

summer. (b) I am wintering my sows almost exclusively on turnips and mangels.

3.—My brood sows in summer keep fat enough on pasture, unless I want them for exhibition.

4.—I feed my sows while suckling their young on mangels, shorts, swill, milk, etc. As to weaning the young, it depends largely on how they are thriving. If they begin to show signs of unthriftiness I would wean them, but if they continue to thrive I would let them suck seven or eight weeks and occasionally longer.

5.—I would recommend a comfortable place to lie in out of the sun and storms, but believe in a small range of clover (especially for pigs that are easily kept), along with a limited quantity of grain or meal, with free access to ashes, salt, and water.

6.—At from six to eight months old, sometimes six to eight weeks old.

7.—There is no good reason for letting pigs halt in thriving between weaning and marketing, if they have outdoor exercise.

8.—That will depend largely on the market prices of grain. Peas, barley or corn are, I believe, the best finishers.

9.—No. As you are aware, any person exhibiting hogs always has more or less heavy boars and sows that are not profitable as feeders, but they are fed from the same bin as the younger animals.

Middlesex Co., Ont. R. H. HARDING.

The Cost of Producing Summer Pork.

1.—At ten months. If a sow has the first litter when she is about ten months old she can have two or more litters after that.

2.—Spring litters are the most successful. We have a good large pen with boiler in it. We boil roots and mix with middlings. Give them a good dry bed. Let them run out in a small yard.

3.—We let them run on clover pasture, giving them a little swill, milk, middlings, and a small quantity of peas.

4.—After the first few days we feed them on middlings, milk, and swill. We prefer to wean them when eight weeks old.

5.—We house them warm and dry, letting them run on wheat, pea, and other stubble. When that is done we then house them.

6.—If littered in April, we market them in Oct.

7.—From the time of weaning we keep them gaining, but do not feed peas till four months old.

8.—As to rations, we feed chopped peas, with a little middlings in water for drink.

9.—As to cost, we have found for a summer litter it would be 3c. per pound, live weight; a winter litter costs a little more. We do not know of any further suggestions to make except that it is essential to keep them clear of insect vermin. Keep pens clean and bedding dry.

COWIE BROS.
Wentworth Co., Ont.

Swine Rearing at the Central Experimental Farm.

1.—A sow in good condition may have her first litter at twelve months old, give her a chance to grow, and have the second litter at two years, and you may have two litters each year successfully.

2.—Spring litters are preferable for many reasons. Give the dam roomy, well-ventilated, comfortable quarters; six weeks before farrowing give her a pen by herself. She should get a liberal ration of succulent, nourishing food, such as roots, skimmed milk, bran, ground oats, or small quantities of any other ground grain that may be on hand. Turnips or potatoes should be cooked. During the first two months roots should be the larger part of ration.

3.—We give them roomy, clean quarters, protected from the cold or dampness. We have not got a clover run for them, but room enough for exercise. With a clover run and fresh water, skimmed milk, and the refuse from thinning root crops and other unmarketable stuff, sows can be summered very cheaply with success.

4.—Provide absolute protection from cold or damp or drafts. Feed the dam clean, fresh, rich food composed of a small quantity of roots, skimmed milk, shorts, ground oats, and well-boiled barley. In no case give her sour food. When the litter is two weeks old place a small, flat trough where the little pigs can reach but the mother can not. Give them a little fresh milk, and after a few days add some shorts. They should have access during the daytime to a run where there is sunshine. At six weeks old the mother should be removed each day for a short time at first, when the pigs are two months old remove the dam altogether.

5.—A careful, intelligent caretaker; also clean, dry quarters to sleep in; clover paddock for exercise and food. Feed them three times each day, such quantities only as they will eat up clean each meal. The following makes a very good ration: Skimmed milk, roots (cooked), ground barley and peas soaked about thirty hours, with ground corn soaked the same time, the corn to be fed sparingly

at first and increased as maturing time approaches; also to have free access to salt and ashes, sods or soil.

6.—At six months old a fair pig should dress 170 to 190 pounds.

7.—A pig should never be stunted in its growth, it never will compensate afterwards for a halt; they should be pushed as rapidly as health will permit from birth until marketing.

8.—You might increase the corn somewhat with good results, still I would not get very far from the balanced ration.

9.—I would refer your readers to the Central Experimental Farm reports: 1891, pages 83 to 87; 1892, pages 64 to 70; 1893, pages 71 to 76; 1894, pages 78 to 86; and 1895, pages 191 to 195.

We can produce pork, live weight, during the summer for 2 1/2 to 3 cents per pound.

JOHN FITZGERALD, Farm Foreman. Dominion Central Experimental Farm.

Feeding Fat Cattle and Young Dairy Stock.

I have fed cattle for export for a number of years; always bought my steers from farmers. I bought the best I could find. It paid well when cattle sold for five and six cents per pound, live weight, but times have changed; we have to do things differently to compete with other countries. I found that I could not feed cattle if I did not build a silo, so I built one and liked it so well I had another built the next year, and I have been feeding ensilage for five years. It was the first in this section, and the farmers are commencing to see the benefit of the silo. There have been quite a few built the last two years, but not as many as there ought to be. As a rule, I have fed steers to be ready for May market, and also some pretty well finished to put on grass about the 20th of May. I never had cattle do better than when fed on ensilage made from corn when matured, with cut straw and cut cornstalks (what you will very often see in a great many of the farmers' barnyards tramped under their cattle's feet and going to waste), with a little meal, about 3 pounds a head per day for the first three months, and from 4 to 6 pounds at the finish. With this ration I can turn them out fit for any market. The meal should be mixed with one-third bran. I always let my cattle out every day for exercise; if weather is too cold, only when stables are being cleaned. They should be washed with kerosene emulsion, say three applications, when first tied in, about ten days apart, and carried between applications. They should also be curried once a day the last three months. I do not believe in turning them out to "curry themselves on a knotty pole." When cattle are uneasy they are not putting on beef. If cattle are free from vermin and have the proper care and food, you will find them quiet and contented; this is a sure sign they are putting on flesh. To have cattle fatten fast you must get your work done as soon as possible and get out of the stables in the forenoon, so they can lie down and rest until the next feeding. Allow no strangers in your stables to disturb cattle until evening feeding. If these rules are carried out you will have fat cattle fit for export in six months, if you put in the right quality of steers.

The last two years I have given my attention to dairying. I am making butter. Keep from 60 to 75 cows. I am raising the heifer calves from my best milkers, and also my best steer calves. The first year I raised nine calves for an experiment, on skim milk. After the calves were ten days old they got nothing but skim milk fresh from the separator, and when a month old and beginning to eat, fed a little clover hay and whole oats. The way I teach them to eat oats is, as their nose is always moist place some on it and they will take them in with their tongue and will soon learn to eat. I find whole oats better for calves than ground oats or chop; it gives them better stomachs for feeding when grown to be older cattle. The first nine did so well I raised 23 last year; they are about a year old now. I think they are as large as the common run of two-year-olds. The yearling heifers I am having bred so they will be milking next fall. I believe in having my cows to come in in the fall, say September, October, and November; you will have more milk in the year from your cows, for when they strike the grass in the spring they will milk as well as new-calved cows. The fall calves when turned on the grass in spring grow like weeds. You all know how they grow. As for taking care of the young stock in winter, I tie everything up in the cattle line, even the calves, so I know just what each one is getting. I let them have plenty of exercise every day in yard or barnyard; calves should have a couple of hours' exercise in a warm place. I do not believe in feeding young cattle very much grain when growing; ensilage, when well matured and fed with plenty of rough fodder, such as cornstalks and straw, and a little bran and some clover hay, will make fine feed for young cattle and will bring them out in fine condition for grass.

JOHN SHEPPARD.

Bothwell, Ont.

R. C. ALLAN, Northumberland Co., Ont.:—"Permit me to congratulate you upon your Christmas number, which, in artistic merit and the excellence of its contents, exceeds anything in farm journals that I have ever seen. No farmer can afford to be without the ADVOCATE, and it has a place among my reading that no other paper seems to fill."

Winter Care of Brood Mares.

BY JOHN SPENCER, V. S., CHAUTAUQUA CO., N. Y.

At this season of the year, especially where the breeder is cramped for room, and in inclement weather when we do not wish to turn our idle brood mares out in the barnyard, some provision for exercise is quite desirable, and, in fact, in some cases decidedly necessary. It is a well-established fact that if a mare does not receive sufficient exercise the foal is liable in his movements in the womb to become abnormally placed, and any man who has found it necessary to have a colt taken from a mare can readily understand and appreciate what that means, for it is next to impossible to save a colt after several hours' labor, and if the mare escapes with her life she is most dangerously exposed to metritis (inflammation of the womb), as well as several other conditions undesirable. Yet exercise is not all a brood mare needs in the winter, but if it be possible to furnish every mare in foal with a large, roomy box stall, well ventilated and sufficiently lighted, it will pay good interest on the investment every time.

Some—yes, a great deal—attention is also necessary in feeding such animals. Too rich and stimulating food produces great damage, as does entire liberty at foods of coarse quality. Too much rich food produces too great plethora, which renders any animal more susceptible to febrile conditions, consequently more dangerously exposed to metritis, mammitis, peritonitis, laminitis at parturition, and a host of less important maladies; and after the foal is born the result upon it is anything but beneficial, providing it escapes that fatal form of indigestion peculiar to young colts—the direct result of too rich milk, traced back to the mare's abundant supply of rich, heating grain; or, if it escapes this, the bowels become overtaxed, and either diarrhoea or constipation results, either of which is very fatal.

Again, on the other hand, too much coarse food, such as straw, chaff, pea straw, too many roots, etc., have their bad effect, producing indigestion (acute or chronic), colic, lymphangitis, constipation—any of which are sufficient to produce abortion, especially so from a sympathetic, spasmodic contraction of the womb, or from pressure upon it from the distended bowel, from generation of gases; and here let me say that mares in foal are peculiarly susceptible to conditions of indigestion when closely approaching parturition, which may terminate in enteritis, constipation, and death; or anemia may result, as shown by the swellings in the legs and most dependent portion of the abdomen.

Too much clover hay has been known to produce very bad results in mares far advanced in foal, bringing about a premature secretion of milk, which appears to have a very weakening influence on the colt. I presume from the fact that nature intended only to supply the young from one source, and when the milk is secreted long before the little animal is born the umbilical supply is modified or diverted, both supplies not being kept up, and in such a case the colt, if not born dead, is so weakly that he soon dies. Therefore it pays to avoid extremes in feeding mares from which we expect good returns, and I would suggest that as a diet a moderate allowance (not abundance) of good, clean, well cured hay, sufficient oats and bran to maintain a strong, healthy condition; occasional bran mash, containing a regular allowance of salt, or a mess of boiled oats and bran every other or even every night, with a comfortable, roomy, well-ventilated box, and plenty of exercise, or better still, moderate work in careful hands, avoiding extremes of pulling and backing, especially the latter, and never allowing full liberty to ice cold water in winter. When the country was new and farmers had to work their mares right through the year, very rarely any of the difficulties with which we have to contend presented themselves, and many a mare had to be unhitched from the plow to foal, usually resting only a few days.

Tar for Sheep Cough.

To the Editor FARMER'S ADVOCATE: SIR,—I read a number of letters in your paper on feeding sheep, which I think are very useful. I brought home a small flock of thirteen last fall, and when we had them a few days I saw that almost all the old ones were coughing. I treated them to a good dose of pine tar on their noses, and made them swallow a little. I then fed twice a week raw flaxseed, a small handful to each sheep. It cured them all. I find there is no better grain than field beans to feed sheep to keep them healthy and make wool good, either in the straw or threshed. We mostly thresh ours so we can tell best how much we feed.

Manitoulin. THOMAS H. THOMPSON.

Tuberculin Test.

In reply to an enquiry addressed by us to Hon. Sydney Fisher, Minister of Agriculture, as to who were qualified veterinarians authorized to apply the tuberculin test, under the new regulations published, we have the assurance that the Government, feeling the responsibility of the correctness of the test, has decided, before making any appointments, to hold an examination, both written and oral, of all applicants for the position. A Board has been appointed by the Government to conduct the examinations, and they will take place as follows:—London, the 19th inst., at 10 o'clock a.m.; Toronto, the 20th inst., at 10 o'clock a.m.; at the Ontario Veterinary College; Kingston, 22nd, at 10 a.m., in the Dairy School Building.

Annual Meetings of Live Stock Associations.

Canadian Horse Breeders' Meeting.

The second annual meeting of the Canadian Horse Breeders' Association was held in Toronto on February 5th, 1897. President Robert Davies occupied the chair. Secretary Henry Wade stated in his report that the object of the Association is to encourage and assist the improvement of all the better classes of horses, and especially so by holding and assisting shows at different times of the year. The committee appointed last year waited on the Provincial Government and explained that the same grant as was given last year (\$2,000) to the Association in the interest of the Canadian Horse Show was again necessary in order to insure success at the coming show. The committee was given to understand that the grant would in all probability be renewed.

The financial statement showed that the receipts for the year, including the grant, were \$2,939.24, and the expenditure \$2,349.35, leaving a balance on hand of \$589.89.

The following directors were elected: To represent the Hackney Association—Robt. Beith, M. P., Bowmanville; John MacDonald, Toronto. Clydesdale—R. Miller, Brougham; Robt. Davies, Toronto. Thoroughbred—Dr. Smith, Toronto; W. Hendrie, Jr., Hamilton. Trotters and Pacers—Dr. Hodgson and J. Ross Robertson, M. P., Toronto.

Delegates to the Toronto Industrial Exhibition—R. Beith, M. P., and H. N. Crossley, Western Fair—R. McEwen and Mr. O. Sorby, Ottawa Exhibition—Wm. Hutcheson, M. P., and Robert Graham, Montreal Fair—Jas. A. Cochrane and Robt. Ness.

At a meeting of the directors held after the adjournment of the annual meeting the following officers were appointed from among themselves: President, Robert Davies; Vice-President, Dr. A. Smith; 2nd Vice-President, R. Beith, M. P.; Secretary-Treasurer, Henry Wade.

Horse Breeding.—Mr. R. McEwen, Byron, read a highly appreciated paper on the subject of "Horse Breeding." In the outset the writer acknowledged that the present lot of the horse breeder is not altogether a happy one. Many stables now contain numbers of mature horses that could well be done without, but unfortunately they are not of the sorts wanted by the market. Too many who attempt to breed horses fall because of a want of purpose. Every breeder must have an object in view to avoid increasing the ranks of the nondescript sort, and to produce a salable animal. Reference was made to the fact that a few years ago a company of remount officials visited Canada to investigate the chances for a supply of cavalry horses in this country, and determined that we had not a sufficient number of their class of horses to warrant their depending upon us, which indicates that we can well pay attention to the breeding of horses suitable for remounts, and thus secure a market that is waiting for us. Mr. McEwen stated that too often the best mares are kept at work, and those which are worn out or otherwise inferior are kept breeding. Success depends upon proper mating and proper keeping. A bad horse cannot be made a good one by feeding, nor can a well-bred colt ever grow to a good horse without good care and feeding. A wise breeder will investigate the cause of failure and profit by the lessons received. The same stallion cannot get good colts from all sorts of mares. The object in view must be considered in both the sire and dam. One of the great mistakes made is that of starving colts, which prevents them ever developing as they should. Our horse shows should be a great teaching factor, as no starved colt ever became a prize winner.

Hackney Horse Association.

The Canadian Hackney Association held its fifth annual meeting in Toronto on February 4th. President Robt. Beith, of Bowmanville, occupied the chair, and H. Wade filled the position of Secretary.

Reference was made by the President, in his address, to the remarkable progress made in Hackney breeding in Canada since the inception of the Association. A good deal of money has been spent on importations during that time, and now the fruits of good returns are being realized. The admirable quality and excellence of the Hackney breed was touched upon in the concluding remarks.

The Secretary reported that thirty-three Hackneys had been recorded during the last year, which now makes the number sixty-seven stallions and eighty-five mares, which will no doubt be soon published in volume form. The financial statement showed receipts, including a balance of \$101, to be \$234, and expenditures \$101.90, leaving a balance of \$132.10.

A circular from the English Hackney Society was presented, offering to affiliated associations two silver medals as premiums—one for males, the other for females—with the following options: (a) For best Hackney mare or filly registered in the English Hackney Stud Book; (b) for best Hackney mare or filly imported sire and dam, both registered in the English Hackney Stud Book. When not less than \$125 are offered in classes for Hackney stallions and entire colts, a silver medal is for (a) the best Hackney stallion or colt registered in the English Hackney Stud Book, or (b) for best Hackney stallion or colt from imported sire and dam, both registered in the English Hackney Stud Book. Affiliation is secured by paying to the English Hackney Society one guinea. It was resolved to apply for the medals for (a) home-bred stallion and mare at the Canadian Horse Show, and for (a) imported stallion and mare at the Toronto Industrial.

A letter was read from Mr. Jas. A. Cochrane, of Hillhurst, suggesting that mares by Standard-bred or Thoroughbred stallions, and out of full registered Hackney dams, be eligible for half registry. This matter was left to a committee composed of Messrs. Crossley, Cochrane, and Beith, to consider and report at the time of the horse show.

It was proposed to draw up a memorial on the death of the late Mr. George Haslam, who occupied the position of second vice-president of the Association.

A paper prepared by Mr. R. Gibson, of Delaware, was read by Mr. R. McEwen, of Byron, on "Lessons from the Horse Shows," who pointed out that the Hackney horse sixteen hands what has not the sort to struggle after, but rather to follow quality. Action is not the all-important feature; we must possess that breediness that marks the finest of the race. It is important that the shoulders be well laid and sloping, and that the limbs be clean, hard, and flat. A suggestion was expressed to further popularize the breed. This is even more necessary with mares of the "dudes" on the long white lines. In crossing as much as possible of Thoroughbred blood. In choosing Hackney sires the families producing the most prize winners should be adhered to.

It was resolved to appropriate \$100 to the following: \$25 for the best Hackney stallion at the Canadian Horse Show; \$25 for the best Hackney mare at the same show, and the same prizes at the next Toronto Industrial.

Officers for 1897.—President, Robt. Beith, M. P., Bowmanville; 1st Vice-President, H. N. Crossley, Rosseau; 2nd Vice-President, John MacDonald, Toronto. Vice-Presidents from the Provinces—Ontario, A. G. Ramsay, Hamilton; Quebec, Amherst; New Brunswick, Hon. D. McLellan, St. John; Swan Lake, Directores—O. Sorby, Guelph; Robert Graham, G. Pepper, Toronto; Dr. A. Smith, Toronto; Brougham; John Holderness, Toronto; Robt. Bond, Toronto. Delegates—To Industrial Exhibition, H. Wade; to Western Fair, R. McEwen and A. G. Bowker; to Montreal Fair, James Cochrane; to Ottawa Fair, R. Beith, M. P. Recommended as directors on the Board of the Horse Breeders' Association—R. Beith and John MacDonald. Mr. R. Gibson was recommended as judge at the coming Canadian Horse Show. The following

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expert judges were recommended for Toronto, London, Ottawa, and other shows: A. R. McLaren, Aurora, Ill.; R. P. Starbuck, Springfield, Ill.; H. K. Bloodgood, New Marlboro, Mass.; A. J. Cassatt, Philadelphia; John Holderness, Toronto; and R. Gibson, Delaware.

The Clydesdale Association.

The Canadian Clydesdale Association met in Toronto on Thursday, Feb. 4th, with President Robt. Davies, Toronto, in the chair, and H. Wade as Secretary.

The President in his address expressed a hope for better times for the Association and for its individual members in the near future. A recent conference between our Dominion and Provincial Ministers of Agriculture and the American authorities at Washington resulted in giving our Ministers a hope that Canadian certificates would soon be recognized in the United States on equal terms with American registration. The importance of breeding all the good draft horses possible was emphasized. Prices for good heavy draft horses have risen fifty per cent. in the last year and a half. Buyers of horses are spoken of, and to bring this about shipping accommodation was spoken of, and to bring this about the President and Mr. John Sheridan had waited on the Deputy Minister of Marine and urged the necessity for better accommodation, and received from him an assurance that an Order-in-Council to this effect would be passed as soon as possible. In conclusion Mr. Davies referred to the excellent display of Clydesdales made at the last spring show and also expressed a hope that the coming one would be still better.

Secretary Wade reported that one hundred registrations and thirteen transfers had been made during the year, as against seventy-six registrations in 1895. It was expected that the probable acceptance of our certificates across the line would result in a still greater increase of registrations. The financial statement showed receipts, including balance from last year of \$38.85, to be \$289.85; the expenditures amounted to \$197.18, leaving a present balance of \$92.67.

On motion, it was resolved that \$100 be granted to the Canadian Horse Show for draft teams sired by Clydesdale stallions, and that it be divided into three prizes of \$50, \$30, and \$20.

It was also resolved that a class be made for colts foaled in 1896, and recommended that the prizes, \$25, \$15, and \$10, be subtracted from older classes of Clydesdales.

Officers.—The election of officers resulted as follows:—President, Robt. Davies, Toronto; 1st Vice-President, R. Graham, Claremont; Vice-Presidents for Provinces—Ontario, D. Sorby, Guelph; Quebec, R. Ness, Howick; Nova Scotia, Col. Clarke, Blain; New Brunswick, A. S. Murray; Prince Edward Island, Hon. James Clow; Manitoba, J. E. Smith, Brandon; Northwest Territories, A. Turner, Calgary. Directors—R. Beith, M. P., Bowmanville; John Davidson, Ashburn; Geo. Cockburn, Baltimore; R. Miller, Brougham; J. Vipond, Brooklin; G. Clayton, Peapabun; A. D. Doherty, Ellesmere. Delegates to Toronto Industrial Exhibition: W. Smith, Colburn; O. Sorby, Guelph. Delegates to Western Fair—R. Graham, Claremont; E. G. Charlton, Duncrief. To Ottawa Industrial Fair—John Davidson. To Montreal Industrial Exhibition—R. Ness, Howick. To Canadian Horse Breeders' Association—R. Miller, R. Davies.

The following judges were recommended.—Messrs. W. Graham, R. Ness, J. Lee, and R. Miller. Mr. Robert Beith was suggested as judge of Clydesdales at the Canadian Horse Show.

Shire Horse Association.

The seventh annual meeting of the Canadian Shire Association was held in Toronto on Feb. 4th, 1897, with President H. N. Crossley, Roseau, Ont., in the chair and H. Wade as secretary. The President in his address referred to the good work done by the Association, but a great degree of prosperity cannot be expected until the general tide of affairs has improved. Reports from all quarters show that all horseflesh is on the rise, especially those of the draft breeds. During the past year the Shire breed has been well represented at the large shows. Many good draft stallions have been purchased by syndicates during the last year, which cannot but do much good to the sections into which they have gone. The mining boom which is now attracting so much attention will doubtless create a demand for heavy horses to work and transport the ore. The Shire was referred to as the best of draft breeds for heavy work.

The Secretary reported that eleven animals had been recorded, being one more than during the previous year. The Association has now on record the pedigrees of 366 stallions and 115 mares, but the pedigrees of 92 stallions and 7 mares are still lost by the fire. The financial statement showed receipts \$57 and expenditures \$26, leaving a balance of \$11 in the treasury.

The following officers were elected for the coming year:—President, H. N. Crossley, Roseau; Vice-President, W. E. Wellington, Toronto. Directors—John Gardhouse, Highfield; W. Hendrie, Jr., Hamilton; W. Wilkie, Toronto; J. Y. Ormsby, Woodstock; J. M. Gardhouse, Highfield; G. Garbutt, Thistleton; John Semple, Tottenham. Delegates—To Industrial Exhibition, J. Gardhouse; to Western Fair, Henry Wade, H. N. Crossley.

Joint Committee Meeting of the Canadian Horse Breeders' Association and Country and Hunt Club.

A meeting was held in the Queen's Hotel, Toronto, at 8 p. m., February 5th. The following members were present: Representing the Horse Breeders' Association—Robt. Davies (chairman), John Macdonald, H. N. Crossley; Robt. Miller, Brougham; Robt. Beith, M. P., Bowmanville; Dr. A. Smith, and Henry Wade, secretary. Representing the Country and Hunt Club—Major J. D. Hay, Edmund Bristol, J. Lorne Campbell, C. W. Clinch, R. O. McCulloch, and Stewart Houston, secretary.

It was resolved that the dates of the Canadian Horse Show be Thursday, Friday and Saturday, April 29th, 30th, and May 1st. A joint arrangement was made between the two organizations, the Breeders taking over the Roadster classes and the Saddle Horse classes, so that the \$2,000 granted by the Government should be used for breeding horses.

It was also decided that the partnership basis of the prize list should be \$3,500, not including special sweepstakes; all other donations to go to the common fund, and the profits or losses to be equally divided between the Breeders and the Hunt Club.

Dominion Shorthorn Breeders.

The eleventh annual meeting of the Dominion Shorthorn Breeders' Association was held in Toronto on February 3rd, 1897, with President Arthur Johnston, Greenwood, in the chair, and H. Wade as secretary.

President's Address.—Mr. A. Johnston, of Greenwood, Ont., President, spoke as follows: In addressing you at the beginning of another Shorthorn year, I think I cannot do better than refer for a short time to the past history, the present state, and the future prospects of the breed in this country and in the United States, from a business point of view, and in doing so I wish to call your attention to some of the causes which, in my opinion, have led up to nearly all, if not all, the depressions we have experienced during the past thirty years or more.

First, then, as to the past history, I may say it has consisted of a series of three distinct and widely different states, viz., the healthy, even and progressive business periods, when any man of known honesty, intelligence, and perseverance could make a success of the business, as well as a little money, out of what I think a pleasant calling, and at these periods I think I may say that few excepting such men have been engaged in the trade. During the period of straight business and honest

effort on the part of the breeders and importers of thirty odd years ago, success depended, as it ought to do, on producing good animals with sound, old pedigrees. Those good ones sold at good prices, though no better than their merits deserved, and also, alas, of judgment or fancy for the animals themselves, but who entered the business solely to make money out of it, and to make it quickly. Those men by their lavish expenditure of money and extravagant advertising soon monopolized the foremost ranks among breeders, though they took the time to breed at all, between public sales. Certain animals bred or imported by the genuine breeder and fancier brought good prices on their individual merits, and this circumstance induced the speculator to fly off and buy all the sisters, aunts, and all of which were absolutely certain to figure in an extensively advertised sale within a year or perhaps in a very much shorter period.

For a time this method seemed to succeed. Animals of no real merit, from the genuine fancier's point of view, soon supplanted the best of the breed and monopolized all attention; the attention, I mean, of what became a fraternity of jobbers in pedigrees, instead of enthusiastic breeders or producers of good cattle. From this it was an easy descent to the so-called line-breeding or pedigree craze which culminated in the famous New York Mills sale, when a cow sold for the enormous sum of forty thousand six hundred dollars; one of the worst days for the shorthorn trade in its whole history. After this sale, for a time, good cattle became comparative drug in the market, unless they were bred in a particular line; and if they had the good fortune to be so bred, individual merit might almost be said to be unnecessary in order to fetch a big figure.

After lasting long enough to almost kill the legitimate breeder for merit, this period was followed by a more rational one, when during the eighties, while cattle were required to good prices, pedigrees without individual merit in the cattle were, as they ought to be, of little value. When this period succeeded, nearly the whole of the speculators—and I am sorry to say, most of the moneyed men—dropped out of the business, and in this way vast sums of money were withdrawn from the trade, which could have no other effect than to feel in recent years, and I am sorry to have to say we are still feeling it in the low prices that we obtain for our stock. While we are still feeling the depression, I am bound to say that at the present time, I believe, we are not suffering from the hard times any more, if as much, than most other lines of business.

Another and a very potent cause of the recent depression in Shorthorn matters has arisen from the rush of so many of our farmers into the so-called milking breeds, caused to a great extent, no doubt, by the undoubted increase in the consumption of and demand for dairy products all over the British world. The force of this (in many cases) foolish rush has, I believe, been spent, and a reaction is unquestionably taking place.

With regard to the present state of the Shorthorn trade, I think I may say that while it cannot be called good, there is nothing a farmer can produce that meets with a readier market or pays better than really good young Shorthorns of reliable breeding, and by good, reliable breeding I mean animals bred from really good ancestors on all sides, and especially the more recent ancestors.

As to the future prospects of the business, or, as I would like to call it, profession, I may say that it is dangerous to predict even now when everything looks favorable, as is the case as regards Shorthorn matters at the present time. In the first place, really good cattle of any breed are well known to be scarce and in demand, though prices are still low in their case as in all others.

The dairy boom has, I firmly believe, spent its force to a very great extent, so that while suitable districts and certain well-qualified men may still continue in the milk business, it will not, I am certain, be followed so indiscriminately by unskilled men and in unsuitable districts as has been the custom in recent years. Not only this, but the demand for good feeding cattle, and the consequent rise in their price that must take place, are certain to draw farmers to the good old standard general purpose breed, the only breed that can be relied on to produce good milkers and at the same time furnish the very best of steers and heifers for the butcher.

We have now, as I said above, got rid of the speculators to a very great extent, and we have, I believe, seen the end of the injurious effects of the withdrawal of so much money from the business. This lands us on a sounder basis than we have in recent years occupied. During the big price period credit was almost invariably the practice, as speculators counted on selling their cattle before paying for them. There is vastly less credit now than at any former period during the past thirty-five years, and this is another promising feature in the trade, and not the least promising.

On the whole, I cannot but look with greater confidence on the future of the Shorthorn business than I have been able to do for many years. There never has been a keener or more general demand for young bulls than we have experienced during the past two months, notwithstanding great stagnation in almost all other lines of business as well as the low prices obtained for beef, pork, and indeed almost all kinds of farm products. It is true that we have sold at possibly the lowest prices obtained in many years, but even the prices obtained are quite as good as the prices realized for other farm commodities, and I believe better, all things considered.

If I were asked my opinion as to the greatest want in Shorthorn matters in this country and in the United States, I would unhesitatingly answer that of moneyed men who take an active and participating interest in the and in all other matters pertaining to agriculture. In the Old Lands it is widely different. There, from the royalty down to the tenant farmer, all take a patriotic pride in being connected with the soil on which they live, other than mere ownership and the consideration of our men of wealth. It is not to be hoped that the wealthy can make money in this way only the very poor farm; and if men of wealth and social standing hold aloof from the soil, the more moderately wealthy will also avoid it; whereas, if our wealthiest citizens made it fashionable to take up some lines of agriculture, moneyed men of less means would imitate, and the certain result would be improved methods and more ambition. In England and Scotland, and indeed all the Old Lands, the tenant farmer has many opportunities during the year of meeting on equal terms with his lordship of high degree who is engaged in farming in the vicinity. Even the Queen and the Prince of Wales are largely engaged in farming and pure-bred stock raising.

In conclusion, I desire to say that no class of business men in the world have stood higher, from a moral standpoint, than the real breeders and importers of Shorthorn cattle during the past fifty years. This has been not only in Canada, but also in the United States and Great Britain. If we do not, save, but I believe it will not be contradicted. If we do not number in our ranks men of great wealth, we do number among us men of great ability and considerable influence, and I venture to say that in every neighborhood in which they are found they will at least carry a full share of the respect and any knowledge.

Motion.—On motion, the following resolutions were carried: "That the sum of \$110 paid in 1896 to the Ontario Fat Stock Show be approved of for 1897."

"That from now forward the date of over age animals for registration be set at two years instead of eighteen months."

"That in case the Prince of Wales prize be given to a Shorthorn Breeders' Association, that it be given to a bull and four females under two years old, bred by exhibitor."

"That the sum of \$300 be put into the hands of the Execu-

tive Committee, with instructions to award \$150 to the Fat Stock Show of Ontario, and the other \$150 be placed as they think best on Canadian Shorthorns or Shorthorn grades winning at the Chicago Fat Stock Show next autumn.

That the sum of \$100 be placed in the hands of the Executive Committee to duplicate prizes in the dairy departments offered by the different fair boards if won by Shorthorns."

"That the Executive Committee be instructed to communicate with the Dominion Government, urging upon them to take steps to bring South American buyers of pure-bred stock upon them the fact that they can purchase as good animals in this as in any other country at much lower prices than they are now paying in Great Britain." This Association is willing to spend some of its funds in such a cause.

Statistical.—The report of the Secretary (Mr. Hy. Wade) and Executive Committee showed that the paid-up membership roll has increased 74 in the last year. The income from fees for 1896 was \$1,228. The expenditure for the year was \$1,004.90, leaving a cash balance in the treasury of \$2,124.55. The entire assets of the Association amount to \$12,835.55.

There have been within the year 2,357 registrations, 3,017 certificates issued, and 370 changes of ownership. Transportation.—A letter prepared by the Cattle Breeders' Association to the General Freight Traffic Manager of the C. P. R. was read. It contained several grievances of shippers of breeding stock. The following suggestions were made: Bulls over one year and under two should be changed from 3,000 pounds to 2,500; heifers over one year and under two, from 2,000 pounds to 1,500. The letter also suggested a reduction of charges per 100 pounds, that the grouping of young bulls be the same as cows in the same car, and a change in the regulations requiring a man to go in charge of cattle shipped 100 miles or over.

Special Manitoba Car.—With regard to the car which the Cattle Breeders' Association is arranging with the railway companies to take stock to Manitoba and the Northwest, it was pointed out by the President that all arrangements have been completed except that of getting the stock together at the place of starting. The cost of sending a single mature animal is not to exceed some \$5.00. The car is to go out about once a month.

The President also announced that stock can now be transported 100 miles without an attendant provided he receives a permit from local freight agents and guarantees to withstand any damage or loss sustained that would have been prevented by the presence of an attendant in charge.

The following interesting papers were read and discussed during the afternoon:—"A Retrospect," by Mr. R. Gibson, Alexandria, Bridgen; "Why do We Breed Shorthorns?" by Mr. A. Smith, Maple Lodge.

Election of Officers.—President, Arthur Johnston, Greenwood, Ont.; 1st Vice-President, James Russell, Richmond Hill; 2nd Vice-President, John I. Hobson, Mosborne; Vice-Presidents from Provinces—Robert Miller, Brougham, Ont.; Hon. D. Ferguson, M. P., Charlottetown, P. E. I.; J. H. Lader, Ladak's Landing, B. C.; James Cochrane, Hillhurst, Que.; Josiah Wood, M. P., Sackville, N. B.; J. S. Ross, Moosomin; O. Chase, Church Street, N. S.; John E. Smith, Brandon, Man. Board of Directors—Alex. Smith, Maple Lodge; H. Cargill, M. P., Cargill; John Isaac, Markham; W. G. Pettit, Freeman; C. M. Simmons, Ivan; Edward Jeffs, Bondhead; E. Smith, Hay; T. E. Robson, Ilderton; F. I. Patten, M. D., St. George's, William Dawson, Victoria; W. J. Biggins, Clinton; David Rae, Fergus; James Tolton, Walkerton; William Linton, Aurora; John Davidson, Ashburn. Executive and Finance Committee—James Russell, Richmond Hill, Ont.; John I. Hobson, Mosborne, Ont.; William Linton, Aurora, Ont.; Robert Miller, Brougham, Ont.; Arthur Johnston, Greenwood, Pres. Delegates to Industrial Exhibition—Hon. J. Dryden, Brooklin, Ont.; John I. Hobson, Mosborne, Ont. Delegates to Western Fair—H. Smith, Hay; C. M. Simmons, Ivan, Ont. Secretary and Editor, Henry Wade, Toronto. Delegates to Ottawa Exhibition—W. C. Edwards, M. P., Rockland; R. R. Sangster, Lancaster.

The Hon. John Dryden, Minister of Agriculture for Ontario, in a short address expressed a hope that some of the surplus money of this Association be used to advance the interests of the breed. While he feels that some portions of Canada are particularly suited to dairying and dairy breeds, the expert breeder cannot be had without the Shorthorn sire. Mr. Dryden lamented that the tuberculin test is demanded to be applied to all breeding cattle coming into or going out of Canada. If we pay big prices for cattle in Great Britain it is a great hardship to have to lose all that should be a healthy animal respond to the test adversely. While the United States and Canada accept each other's certificates of health, our breeders feel a great delicacy about having their herds tested, because should an animal respond the whole herd is condemned from a fellow-breeder's standpoint. Besides this, the Americans will not accept a certificate of health from an inspector not authorized by our Government. When we remember that some of the American States—Massachusetts, for example—hold a quarantine against surrounding States, we cannot soon expect them to accept our cattle without a guarantee that they are healthy and especially free from tuberculosis, so long as our Dominion Statutes class tuberculosis in the list of contagious diseases. The Hon. Mr. Dryden is now conferring with the Hon. Mr. Fisher to arrange something better for the future. Mr. Dryden's plan is to have tuberculin prepared in Canada, at say the O. A. College Bacteriological Laboratory for Ontario and McGill College, Quebec, so as to insure purity, reliability, and economy. It is also his plan to have veterinary officers, such as Dr. Reid, with authority to conduct the test and provide for his free services to those who may apply for them. Breeders can then have their stock tested privately. Mr. Dryden realizes the great risk to a herd's reputation to have animals go forward to a quarantine station to be tested, because the least indication of disease would cause the herd in the public eye, which would be a serious injustice.

Herd Books.—Mr. Dryden, on being asked to say something about the chances of having Canadian herd books recognized by American Associations, expressed a confidence that with the assistance of the various breeders' associations he will succeed in getting a satisfactory arrangement in the near future. The American Shorthorn Association now accept the certificates of our books, and it is expected that others will fall into line as we approach them reasonably and wisely.

Dominion Ayrshire Breeders.

The tenth annual meeting of the above Association was held at the Albion Hotel, Toronto, on Tuesday, February 2nd, at 2 p. m. Owing to the serious illness of Mr. Crosbie, the Vice-President, and the unavoidable absence of the President, Mr. Eyre, and several of the members, the attendance was far below the average. Mr. W. W. Ballantyne occupied the chair.

The Secretary's report showed that there were nearly 1,500 pedigrees ready for the next volume. There had been 445 head registered in 1896, as against 549 the year previous, and the registration fees amounted to \$395. Fifty-one members have paid their subscriptions, which totalled \$153, the membership in 1895 having been 56. The amount paid for office work was \$165.65. An expert accountant was employed to audit the books. The financial statement showed that the total receipts during 1896 were \$221.03, and the expenses \$247.99, leaving a balance in hand of \$373.04. The report was adopted.

The election of officers resulted as follows: President, John Crosbie, Campbellford; 1st Vice-President, W. M. Smith, Fairfield; 2nd Vice-President, Alfred Kain, Byron. Directors—Wm. Stewart, Jr., Menie; Jas. McCormack, Rockton; Joseph Yullie, Carleton Place; R. G. Steacy, Ivan; J. C. Nichol, Plattsville; W. W. Ballantyne, Stratford; Wm. Baldock, Mount Charles; J. C. Smith, Hintonburg; Robt. Davies, Todmorden. Delegates: To Toronto Industrial Exhibition—J. McCormack, Rockton; W. W. Ballantyne, Stratford. To

Western Fair - M. Ballantyne, St. Mary's; A. Kain, Byron, To Ottawa - J. C. Smith, Hintonburg; J. Yull, Carleton Place. The list of expert judges drawn up last year was again approved of, with the addition of the name of T. M. Bell, St. Mary's.

A letter was read from Mr. W. Stewart, Jr., Manly, asking if some steps could not be taken towards amalgamating the Association with the one in Montreal; also suggesting a reduction of the annual membership fee. It was decided to take no action as regards the former suggestion. On motion of Mr. Ballantyne, a resolution was brought forward giving notice that at the next annual meeting he will introduce a motion to reduce the annual membership fee from \$3 to \$2. It was also decided to issue a circular notifying the members that the next volume of the Herd Book is to be proceeded with immediately, and that to secure the insertion of pedigrees in it they must be sent in at once.

A communication was read from Mr. G. S. Macdonald, of the committee appointed at Ottawa last session by members representing agricultural counties, in reference to the classification of cattle shipped in less than carload lots by rail. It was decided that, in the main, with the exception of the regulation requiring a man to be sent in charge of single animals and his passage to be paid as well, there and back, the classification was fairly satisfactory, some other slight amendments being suggested.

As regards the proposition to offer special prizes for Ayrshires at the next Provincial Dairy and Fat Stock Show to be held next December, it was resolved to offer \$25 for the best Ayrshire cow, in addition to the regular prizes offered for the breed; and also to give \$25 to the winner of the sweepstakes prize in the dairy test, should it be won by an Ayrshire. In both cases, the animals winning such prizes must be recorded in the Dominion Ayrshire Herd Book.

Mr. Ballantyne gave notice that at the next annual meeting he will bring forward a motion to abolish the Appendix to the Association's Herd Book.

Mr. Yull gave an instance of the injury done to his business by the railroad companies' regulation requiring men to go in charge of single animals shipped over 100 miles. From Carleton Place to Châteaufort their charges, including a man's return ticket, were \$40.50, while the express company carried the animal for \$20. He did not think it necessary to send a man, except with aged bulls.

Mr. Yull read a practical paper on "The Care and Management of Dairy Cattle." This should commence with the calf at birth. He has a few box stalls, and places his cows in them a week or so before calving. He removes the calf, as soon as it is dropped, behind a partition where the cow can lick it, but arranged so that the calf cannot suck its mother. If a cow is in high feed he reduces her in condition by administering salts both before calving and after. The cow and calf are left in the box stall, with the partition between them, for three days, until all danger from milk fever is over. The calf is given all it can take of the first milking, and the rest is drunk by the cow. If there is any danger of milk fever it is not advisable to milk the cow dry. To test whether the milk is fit for use, heat it in a vessel on the stove; if it thickens when cool it is unfit for use; if no thickening takes place it has got into its normal condition. It should be all right about the eighth milking. When the calf gets only skim milk, which is when it is three weeks old, it is necessary to add something to the milk to make up for the cream removed. Mr. Yull gives each calf a teaspoonful of linseed which has been steeped for 12 hours in a quart of warm water. The seed itself is not given, only the essence. As soon as they show signs of eating, he gives them a little hay, which is changed every day if not all eaten. Some meal is spread over the bottom of a box not less than twelve inches square. The spreading of it about insures its being better digested than when it is in a heap. As soon as they eat the meal, flaxseed is added, and later on, a mixture of four pounds oats, two pounds peas, and one of barley, with its own weight of bran. This is their feed till spring. They then run on grass by day and are kept in at night until the flies get troublesome, when they are allowed out at night and remain in the stable during the heat of the day. His heifers calve when two years old, and every year after.

Mr. Yull brings his dairy cows into the stable as soon as frost comes, never letting them out once till spring. The morning milking takes place at 5.15 a.m. The milk is separated while breakfast is going on, one of the members of the family looking after the separating. After that the calves are fed and the cows watered in the stable, and a basketful of out beaver hay and peas and oats, followed by ensilage, is given to the latter. If the ensilage does not contain much grain, some is added, mixed in the same proportion as for the calves. While the cows are feeding the stables are cleaned out. They then remain undisturbed until 3.30 p.m., when they are given a feed of clover hay and rations as in the morning, and again cleaned out. Milking takes place at 5.30 p.m., and the separator is run during the supper hour. After that the calves get their evening meal of milk.

The great secret in attending dairy cattle is punctuality and kindness. Milking takes place on Mr. Yull's farm at the same hours on Sunday as on week days. No cow repays care and attention better than the Ayrshire cow, although she can stand harshly well.

Some discussion followed, during which Mr. Ballantyne gave his plan of watering, which is done by means of an iron bucket, which only contains about two inches of water at a time, but into which a fresh supply comes as soon as the previous amount is drunk. By this system the watering arrangements are kept clean more easily, and each cow has its own supply, untainted by that of another animal.

Canadian Holstein-Friesian Association.

The annual meeting of the Canadian Holstein-Friesian Association was held in Toronto on February 2nd, with President H. Bollert (Cassell, Ont.) in the chair and G. W. Clemons as Secretary. A fairly good representation of breeders was present. The President in his address expressed a hope that the testing of pure-bred dairy breeds would be continued at the important shows, as he felt that winnings from actual dairy tests were of more value to the interests of the Holstein-Friesian breed than any other effort could be.

After the minutes of last year's meeting were read and confirmed, the Auditors' report was read, which showed the treasury to contain \$421.43 of a balance, besides some 200 volumes of the Herd Book.

Officers for 1897: - President, R. S. Stevenson, Ancaster; 1st Vice-President, A. C. Hallman, New Dundee; 2nd Vice-President, W. G. Ellis, Bedford Park; 3rd Vice-President, T. W. Charlton, St. George; 4th Vice-President, Alfred Rice, Currie's Crossing. Directors for two years - Messrs. William Shunk, Sherwood, and Wm. Armstrong, Locust Hill. Secretary-Treasurer, G. W. Clemons, St. George. Auditors - Messrs. J. S. Patton, Paris, and Wm. Suhring, Sebringville. Inspectors of imported cattle - Messrs. Bollert, Stevenson, Hallman and Shunk. Delegates to Fair Boards - Toronto Industrial, Messrs. Shunk and Ellis; London Western - W. B. Scatcherd, Wyton, and J. W. Johnston, Sylvan; Montreal - Neil Sangster, Ormstown, and G. A. Gilroy, Glen Buell; Ottawa - G. A. Gilroy and J. Fletcher, Oxford Mills; Fat Stock and Dairy Show - G. W. Clemons and H. Bollert; Winnipeg Industrial - Jas. Glennie, Longburn, and R. McKenzie, High Bluff.

On motion, the Secretary was instructed to correspond with the Secretaries of the above Fair Boards to ascertain whether or not delegates will be admitted as members of the board, as is the rule with the Toronto Industrial Board, and if not, to urge that appointed delegates be given the powers and privileges of board members.

On motion, it was resolved that travelling expenses of delegates to fair board meetings be paid by the Association to attend the annual and special meetings of the various boards.

The following expert judges were recommended for Toronto - M. R. Seeley, North Farrington, Mich.; S. Burchard,

Hamilton, N. Y.; and D. J. Hinkley, Brookfield, N. Y. For London - Messrs. Bollert, Shunk, and Suhring, Montreal - Messrs. Charlton, Shunk, and Ellis, Ottawa - Messrs. Hallman, A. Kennedy (Ayr), Charlton, and Shunk.

On motion, it was resolved that the amount of money appropriated last year to the various shows be again given, with the exception of Montreal, which sum is to be given to Ottawa. The following are the fairs and the amounts: Toronto, \$100; Ottawa, \$50; Winnipeg, \$50; and Ontario Fat Stock and Dairy Show, \$50; half of which sums to be offered as prizes for tests of cows of any pure-bred dairy breeds.

On motion, it was resolved that all Holstein-Friesian cattle imported into Canada from the United States must not be accepted in the Canadian records except the importer furnish the Secretary of the Canadian Holstein-Friesian Association a certificate from the port of entry that the cattle have been proven free from tuberculosis.

The following resolution was also carried: Whereas the C. H. F. A. desires incorporation in order that they may have legal status in the courts of the land; and whereas our Association is not organized for purposes of making money, but simply to preserve records of birth and breeding of pure-bred Holsteins and furthering the interests of said breed of cattle; and whereas this Association desires to prevent the forming of cattle registry associations in each Province rather than having only one for the whole Dominion, the evil results of which have already been made evident by the two Ayrshire Associations; and whereas this Association's membership extends to all parts of the Dominion and has cattle registered from all Provinces, and are continually receiving applications from and doing business with the different Provinces, we feel any incorporation other than Dominion incorporation will not meet our requirements, and there is not at present any act which meets the requirements of a Dominion live stock association; then be it resolved that this Association request the Dominion Government to take this matter into their consideration and pass such suitable act as would meet the requirements of a pure-bred live stock registry association; and that a copy of this resolution be sent to Hon. Sydney Fisher.

Lice on Cattle.

For several years our stable, like many other warm ones, has been infested with lice, and watch as carefully as we might the hair would begin to drop, and though washed immediately and the lice killed the stock were disfigured until they received their spring coats. This year, soon after the stock were housed, we purchased one-half pound of insect powder and a puffer to put it on with, going over the entire herd of twenty-three head every few days in less time than one animal could be properly washed, and the results are not a sign of vermin, and the coats of the cattle are smooth and bright as they are in summer. The powder cost 20 cents per one-half pound, and we have enough to last until spring. J. F. Brant Co., Ont.

FARM.

A Note from Prof. Pantou.

To the Editor FARMER'S ADVOCATE: SIR, - I would place timothy as shallow-rooted under normal conditions, and any roots I ever examined indicated that nature. I do not think the army worm will be in numbers next year, but I believe it would be wise to repeat the precautionary measures. J. HOYES PANTON, Ontario Agricultural College.

Rape in Oats.

J. H. Pullin, Sweaburg, Oxford Co., Ont., writes: "I have found good satisfaction in sowing rape with oats for late pasture. I sowed the rape when I sowed the oats, putting in the seeder two pounds of rape to a bag of oats, thus giving little trouble in sowing. The oats were harvested about the first of August, giving the rape a grand opportunity to grow, which was ready for pasture two weeks after the oats were cut. The rape did not injure the oats, but made the straw an excellent fodder."

A Note of Warning.

To the Editor FARMER'S ADVOCATE: SIR, - I think it would be in the interest of the farmers of this country if attention were called, through the columns of your excellent paper, to the danger to which they are liable by signing joint notes, not knowing the provisions of the law in this regard or failing to think of the possible consequences. A case in point is as follows: The owner of a stallion, failing to find an individual purchaser, suggests the formation of a company or syndicate of say ten or fifteen farmers who will take stock or shares in the company. He gets a few of the leading men to take \$100 shares, getting their individual notes for that amount, which is all they are liable for. Then he draws up a joint note, and if he can manage to get say three or four men who are responsible to go on the note he cares little what is the ability of the remainder who sign it, as he knows he has enough good names. The time comes when the note has to be paid, and if not promptly met is protested, adding expenses to be borne by those who are able and willing to pay their share. Then comes the sheriff and seizure, if payment is not met, thus piling up more expenses, and in some cases working ruin to worthy men, all through being simple enough to put their names to that cursed joint note. Now I would suggest that some worthy representative of the farmers in Parliament introduce and press for the enactment of a law requiring that every joint note have printed across the face of it the statement that each person signing it would be held responsible for the entire amount of the face value of the note. Two friends of mine have recently been caught in such a trap, and though in their case the damage is done and they are not likely to be caught again, yet I think a note of warning should be sounded through the medium of the FARMER'S ADVOCATE, which is rightly regarded as the farmer's friend, and by inserting this you will confer a favor and save others from serious trouble. A SUFFERER.

Quebec Farmers in Council.

The annual convention of the Central Canada Agricultural Association met at Montreal, Jan. 26, 1897.

Hon. S. A. Fisher, President, discussed briefly the objects of the Association, and, continuing, said that stock raising was fast becoming the most important part of farming in Canada. The period of grain raising and selling in the older Provinces had completely passed away, and the attention of the farmers must now be devoted to the raising of stock and the cultivation of the proper food materials for this stock. The cost of production of these food materials was the great problem to be solved by the Canadian agriculturist. It was beyond the power of the farmer to regulate the price of his product; that was settled in the great markets of the world. But it was possible to lessen the cost of production, and in this lay the secret of success or failure. The Canadian farmer of the present day was too wasteful, too extravagant in his methods, and it was the continual leakage of revenue through the practice of improper methods that prevented the more rapid accumulation of wealth.

Mr. Frank Roy read an excellent paper on the farm garden, and presented a sketch embodying his ideal of a model garden, which was well received and approved. He advised the planting of trees further apart than has been customary. He suggested that greater interest in small gardening might be instilled into children in the rural schools with beneficial effects.

At the suggestion of Mr. C. D. Tylee, Secretary of the Association, a resolution was adopted, to be forwarded to the Provincial Minister of Agriculture, asking that an appropriation be made to purchase garden seeds for distribution among country schools to be used for the purpose of educating the children in the science of gardening.

Mr. E. A. Barnard read an exhaustive and instructive paper on the "Advantages of applying barnyard manure to grass land instead of plowed land," in which he strongly recommended top dressing of pastures and meadows, such top dressing to be applied, if possible, in moist weather, in the summer months and early fall, at the latest before winter frosts, for best results.

Prof. Shutt, of the Experimental Farm, Ottawa, addressed the meeting on "Clover as a manure," in which he emphasized the need of a knowledge of the requirements of crops, the food of plants and its sources, and of learning the composition and character of manures or fertilizers to be applied. The speaker went on to explain more particularly the nature of humus and nitrogen and the various ways in which they improve a soil. By turning under clover not only is a large amount of humus furnished but there is also a distinct gain in the quantity of nitrogen it possesses and imparts to the soil. Clover belongs to the class of plants known as legumes, and these alone have the ability of appropriating free atmospheric nitrogen and storing it for the use of future crops.

Prof. Gilbert spoke on poultry raising. He clearly demonstrated the profit the farmer could get from his fowls without neglecting the other branches. He declared that the greatest cause of disease among fowls was overfeeding. They require more grass or its equivalent, less grain, and more exercise.

Mr. A. J. Dawes followed with an address on harvesting and shredding fodder corn. Mr. Dawes exhibited samples of shredded corn and described the machinery he had used. His experience was that corn harvesters were an expensive luxury, as only about once in three years was the corn in a sufficiently standing condition to permit the use of harvesting machinery. In the discussion which followed the general opinion was that the corn harvester in its present stage of development is a doubtful investment.

Mr. John Nesbitt, of Petite Cote, read a very useful paper on growing potatoes, both for early market and main crop, which brought out a very interesting discussion.

An invitation having been tendered the Association to hold its next annual convention at Richmond, it was unanimously resolved to accept the invitation.

The election of directors for the ensuing year resulted in the following being chosen: Hon. S. A. Fisher, W. Ewing, Geo. Hogg, L. A. Massue, Geo. Buchanan, A. E. Garth, W. H. Walker, A. G. McBean, T. Drysdale, Jas. Johnston, T. A. Trenholme, R. Robertson, S. J. Doran, and Jas. Dickson. The directors met and elected officers for the ensuing year as follows: President, A. E. Garth; Vice-President, T. A. Trenholme; Secretary-Treasurer, C. D. Tylee. Executive Committee - W. Ewing, Jas. Johnston, and S. J. Doran.

Nova Scotia Farmers' Association.

The annual meeting of the Farmers' Association of Nova Scotia convened in Middleton, January 26th to 28th inst., inclusive. A representative number of farmers were in attendance, including a large number of delegates from various agricultural societies throughout the Province. President J. B. McKay in his annual address reviewed the work of the Association during the past year, and spoke encouragingly of its possibilities in the future. Education in scientific methods and co-operation were the needed factors to attain success in the profession of modern farming. The Association should be a medium of education to those who were unable to attend agricultural colleges. At these meetings the best thoughts of the most practical

farmers would be disseminated, coupled with the experience of scientific men, and in consequence make the farmers' business more successful.

F. L. Fuller, Superintendent of the Model Farm, Truro, gave a paper on

"Care and Application of Farm Manures," which brought out considerable discussion as to the use of gypsum as a means of preventing the escape of ammonia in liquid manures, the consensus of opinion being that the use of gypsum arrested fermentation and stopped the loss of ammonia.

Prof. Fletcher, of Ottawa, in an able address on "Fodder Plants," treated the subject in relation to suitable fodder plants for Nova Scotia's climate and soil, and reviewed the work of fodder plants tested in other parts of the Dominion. At Ottawa, for general grass culture, the following mixture had met with good success: 6 lbs. timothy, 4 lbs. meadow fescue, 2 lbs. orchard grass, 1 lb. June grass, add 2 lbs. mammoth clover, 5 lbs. Alsike clover, 2 lbs. alfalfa, and 2 lbs. white Dutch clover. Thorough cultivation of the soil before sowing was very essential.

S. C. Parker, on "How to Make the Farm Pay," emphasized the need of intensive farming whenever possible. Study the use and application of commercial fertilizers. The farmer should employ more science, book-keeping, and co-operation, depending more on himself than upon the Government for success, making use of the many aids now at the door waiting to be utilized.

The proposed "Fruit and Produce Shipping Company" was given an afternoon for the discussion of its plans, and received the endorsement of the Association.

An address on "Salient Points in Fruit Growing" was given by Professor E. E. Faville, Director of the U. S. School of Horticulture, which was well received. A review was given of the fruit districts of the Province; the defects and remedies were pointed out; better nursery stock should be purchased, only the sorts of fruits suited to the locality should be planted. In countries near the seaboard and the vicinity of mining centers vegetable growing should be more extensively carried on, and could be made to pay, as proved by experience. Where peaches could be grown in the Province, the Elberta and Louis were promising varieties.

Col. Wm. Blair, of Nappan, addressed the meeting on "The Farming of the Past and Present." He emphasized the need of scientific education in agriculture. It was the advance of science that had placed the farmers where they were to-day. The experimental farms were all doing good work, but the farmers were not profiting by them as they should. The Governments were doing all in their power to benefit the farming classes.

A. G. Goodacre, Grand Pré, one of the best poultrymen in the Maritime Provinces, read a paper on "Poultry Keeping," which was a comprehensive review of the principal points in successful breeding, feeding, and caring for poultry. Short addresses were made by G. W. Chipman, Secretary for Agriculture; and Geo. Forrest, Director Experimental Farm, Nappan. A lively discussion took place in reference to the finances of the Association, which was amicably settled.

The following are the officers chosen for the ensuing year: President, S. C. Parker, Berwick; Vice-President, G. C. Lawrence, Port Hastings, Cape Breton; Secretary, Paul C. Black, Falmouth. Directors—J. Rufus Starr, Port Williams; W. Carning, Yarmouth; F. M. Chipman, Nictaux West; Col. Wm. Blair, Nappan; F. R. Trotter, Antigonish; C. R. B. Bryan, Pictou Co. Auditors—G. B. McGill, Middleton; Wm. McKeown, Dartmouth.

The next meeting of the Association will be held in one of the Eastern Counties some time in July.

Criticism Invited.

To the Editor FARMER'S ADVOCATE:

SIR,—I have a field of light sandy loam that I wish to improve, and I have not got the manure to spare, as it is needed elsewhere. My proposed plan is to sow it with about half bushel buckwheat and one bushel winter rye, 15 lbs. red clover seed, and 200 lbs. gypsum per acre, probably about the last of May or first of June. When the buckwheat is in blossom cut all down for a mulch and the next spring cut the second crop of rye for a mulch, and if the clover has caught fairly well, top dress again with plaster or lime. This soil is excellent for potatoes, but has not enough of humus in it, and for potatoes (which are my specialty) I prefer a clover sod. Would like to hear from some Ontario farm-

ers in regard to this method of green manuring. Will the winter rye grow up again after cutting, and would you advise a heavier or a lighter seeding? Would like criticism on my plan. I am a firm believer in mulching, whether done by barnyard manure or by green crops applied to the surface. You will see that only one plowing will be required (provided everything works right). The question is, How will it be likely to succeed? Will be pleased to hear from some practical farmer through the ADVOCATE.

Rouville Co., Que.

[NOTE.—We trust some of our readers whose experience or observation covers the points raised by our Quebec friend will deal with the subject as requested at an early date.—EDITOR.]

granary and the silo is floored above the same as the granary and is used to store machinery and other utensils. The 24-foot mow at the east end is trussed beneath the floor to avoid having posts in the drive-house beneath. The large front doors of the barn are made to open inwards to prevent slamming in windy weather. They are therefore cut one foot short at the bottom, and a board one foot wide is fastened to the bottom with strap hinges. This board is hooked up with common hooks and staples when the door is to be opened, thus allowing it to swing free of the floor. The roof is covered with Pedlar metal roofing. The barn is sided up with hemlock siding dressed and painted with red oxide of iron. The structure presents a fine appearance and does credit to the framer, Mr. Findlay Fraser, of Fern Hill, and the mason, Mr. Clyde, of St. Mary's.

Manure in the Yard.

To the Editor FARMER'S ADVOCATE:

SIR,—In your issue of Jan. 15th a great deal was stated about making and handling manure, and the majority prefer to take it directly to the fields when cleaning the stables, spreading it evenly, which I am doing at the present. However, I noticed exceptions are made when on rolling land or deep snow; and, again, that manure should not be put in large piles and allowed to heat and ferment. Might I ask one question which I can not fully decide: Should such occur as the snow getting too deep, or the land being rolling, how could I pile my manure to prevent it from heating? Please answer through the FARMER'S ADVOCATE.

B. G. HORST.

Waterloo Co., Ont.

[Select a fairly level space of ground in yard, putting the manure in a broad, even pile, so that the stock can tramp over it daily. Mix cattle, swine and horse manure together. Occasional snow or rain will probably supply sufficient moisture, but if there is a preponderance of horse manure, and it shows a tendency to heat and "fire-fang," water might be poured on the pile.—EDITOR.]

DAIRY.

Western Ontario Dairymen's Association.

(Continued from page 59.)

Practical Cheesemaking was discussed in a paper by Geo. H. Barr, Sebringville. A suitable building is necessary. The curing room must be right. An ideal combined cheese and butter factory was described. From this factory the milk cans do not leave at any time without a quantity of cold water to render washing easy when home is reached. We will publish this paper in full before the cheesemaking season opens.

Discussion led by Mr. Bell referred to the value of observing all the little things in the making of cheese. The most important point is correct settling, the curd being well cooked. A member claimed to have had good results by using a furnace to heat the curing room, the excellence of which was testified to by Mr. R. Robertson, who bought the cheese. A jacket was used around the heater. The claim was made that the heating was more cheaply done than with stoves, and the curing better done.

Curing-Rooms and Curing Cheese, by J. H. Monrad, Ill. He said the patrons must feel an interest and responsibility in upholding the reputation of Canadian cheese. He expressed a hope that bad, dirty factories would be published with names of factorymen. In Switzerland a sample of each patron's milk is put in a little bottle and placed in warm water, then the patron supplying bad milk is called in to smell his sample after 8 or more hours. It will do more good than 10 hours' talk. It is a mistake to send out cheese only two weeks old. Bacterial life must be studied to be able to meet the necessary requirements. We must use moisture meters in curing rooms, also the thermometer, and adhere to the temperature and moisture that has been found most suitable.

Food Cost of Milk, Cheese, and Butter was discussed by Prof. H. H. Dean, of the Guelph Dairy School. Few men can be found who know what their dairy produce costs them. At the Guelph Station, where the grain was bought on the market and pasture paid for at the rate of \$5 per acre, it cost from \$24.36 to \$30.89 per cow, an average per cow of \$31 to feed the dairy herd for a year. Milk was produced at 4.9 cents per gallon from the best cow and 10 cents per gallon from the worst. Cheese cost from the best cow 3.9 cents and from the worst 8.1 cents per pound. Butter from the best

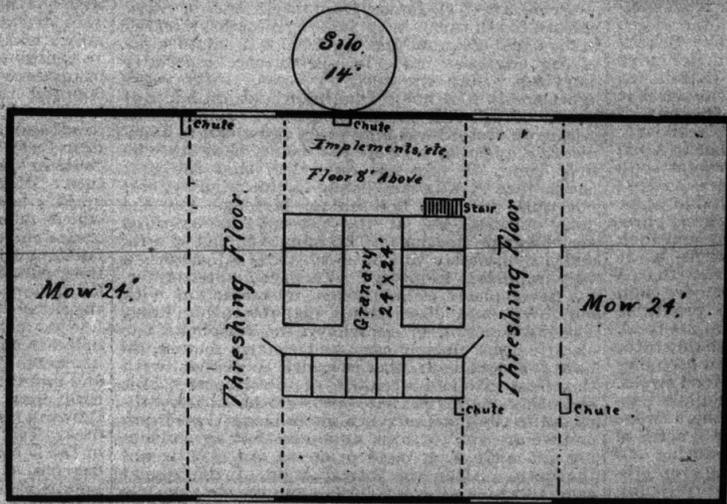


FIG. 1.—UPPER FLOOR PLAN.

A Well-Arranged Stock Barn in Middlesex County, Ontario.

The stock barn plans appearing on this page are those of a structure erected last summer on the farm of Mr. Archie C. Stewart, located two miles east of Ailsa Craig, in the County of Middlesex, Ont. It is 100 feet long by 54 feet wide, outside measurement. The basement stone walls are 8 feet high and 2 feet thick. It is well lighted and ventilated by windows, 2 ft. x 4 ft., marked w in Fig. II., and glass fanlights over each of the stable doors. There are also six tiles leading through each of the front and back walls for ventilation, as well as two shafts leading from the stables to the cupolas on the roof. The floor is of flagstone quarried at St. Mary's. The plan requires little explanation beyond what Fig.

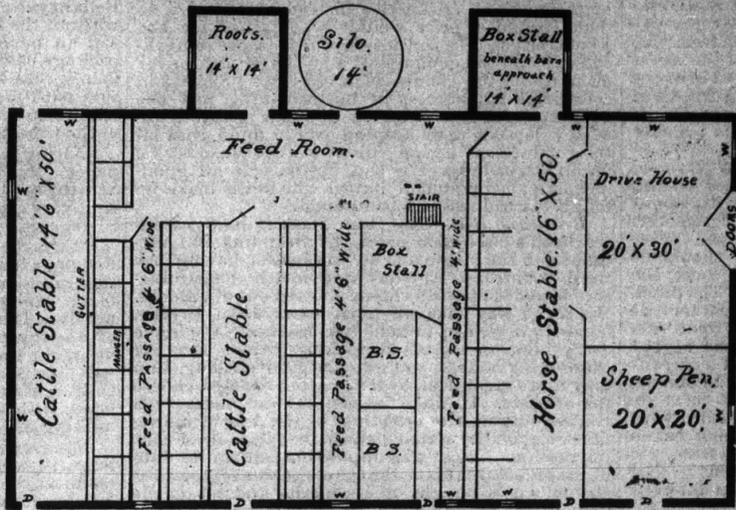


FIG. 2.—BASEMENT PLAN.

II. contains. It will be seen that the feed room is roomy and very conveniently situated, opening into each of the feeding alleys and the silo and root-house. The root-house and box stall on the north side are built beneath the approaches to the barn floors. The silo is of peculiar construction, being banded around the outside of the studs with two ply of half-inch soft elm, five inches wide, placed two feet apart sixteen feet up from the bottom, and three feet apart from sixteen feet up to the top. Outside of these bands is boarded with inch hemlock dressed and painted the same as the barn. The silo is lined with double inch hemlock with tarred paper between.

The upper barn plan (Fig. I.) is well laid out. The granary, being in the center of the barn, is convenient for all the purposes intended. The space between the

cow was produced at 8½ cents per pound and from the worst at about 19 cents. The best cow's milk, if sold at 4 cents per quart, would yield a profit of \$39.46 for the food consumed; if her butter were sold at 20 cents per pound, the profit would be \$47.30; and if her cheese were sold at 8.7 cents, she would yield \$21.18 of a return over and above the cost of food. To show the value of prepotency of pure-bred cows, it was shown that the daughter of the best cow produced butter before she was two years old at a cost of 9.1 cents per pound. In feeding, the individuality of the cows must be noted in order to avoid under or over feeding.

Wasteful Ways in Dairy Farming.—The Hon. W. D. Hoard, under this heading, talked straight to the patrons of cheese and butter factories who are indifferent to the details of their business. He has known a patron to get a return of \$9.96 per cow for the summer, and another to get \$60 per cow. We must get at least \$30 return from each cow or lose money by them. The \$9.96 is the wages of ignorance and shiftlessness. The Dairy School is for the purpose of educating men to make more profit out of their cows. He advised patrons to have a census taken of the cows and the acres it takes to feed them, and thus find out the cost of feeding them. Have it all put upon a blackboard, and then meet once a week from December to April to discuss their business, when they would soon find out where they are at. Commence to test cows and get rid of the poor, unprofitable ones. Keep good cows or none at all. Keep a good pure-bred sire. Study the feeding question, and look out for the best system of building barns, as it costs no more to build a well-planned barn than a poorly-planned one. Ignorance will cost more than knowledge. Summer soiling is more profitable than pasturing. Silage is the proper summer food. Summer silos should be built narrower than winter ones, as a greater depth must be removed each day in hot weather than in cold to keep the food sweet. Three cows fed on first-class heavy June-grass pasture required ¾ acres, while three others were soiled on the produce of 1½ acres. The ¾ acres of pasture gave 6,582 pounds of milk, producing 303 pounds of butter. The 1½ acres of soiling crop produced 7,173 pounds of milk, containing a corresponding quantity of butter. Many cows suffer more for want of food in summer than in winter. To lessen the wastes in the dairy, men must read more dairy literature. A man must become filled with dairy ideas before he can think dairy thoughts.

A Well-Managed Dairy Business.—Mr. E. D. Tilson, of Tilsonburg, who is known to conduct his dairy operations with intelligence, was asked to say a few words. He milks from 50 to 60 cows, mostly pure-bred and grade Holsteins, which are milked ten months of the year. His heifers are milked from twelve to fourteen months their first milking period. Each cow's milk is weighed at every milking, and tested with the Babcock tester once a week in order to know just what she is doing. The best cow gave 15,000 pounds of milk last year, testing 3.70 per cent. butter-fat, making 647 pounds of butter; the best 2 averaged 13,000; the best 5, 12,400; the best 10, 11,600; the best 25, 10,200; the best 30, 9,500; the best 40, 9,000; the best 45, 8,750; the best 50, 8,300; and the average for the whole 55 was 8,000 pounds. The average per cent. of fat for the herd was 3.5. Mr. Tilson feeds daily 50 pounds of ensilage, 6 of bran, 2 of pea meal, and 3 of corn and cob meal, at a cost of 14 cents per day. He endeavors to raise 20 heifers from the best cows each year, and feed off 20 of the worst cows. Cleanliness in the stable is observed in every particular. During winter the cows are turned out a short time each fine day. At the present time the herd is making an average of 13 cents per day profit per head.

The Curing Room.—Mr. T. B. Millar claimed that the proper temperature for the cheese-curing room should be from 60 to 65 degrees, with about 60 degrees of moisture as shown by the hygrometer. When the atmosphere becomes too dry the cheese cracks. When such occurs, the cheese should be washed with warm water, which will cause the cracks to close and the rind to form. Too much moisture will cause mould. In hot weather the windows should be opened at night to ventilate. When the room is too moist scatter lime on the floor, which will take some of it up. If a current of air can be kept in circulation among the cheese, and good light admitted, mould will not form on the cheese. Mouldy cheese should be washed with whey and then with water before being taken from the factory, when they will appear fresh. A good means of cooling the curing room in hot weather is to set around boxes of ice in different parts of the room near the ceiling.

Agricultural Education.—Mr. Andrew Pattullo, M. P. P., Woodstock, delivered an eloquent and excellent address on the above subject. He said that the most potent agencies were the agricultural fairs, the dairy associations, the farmers' institutes, and the Agricultural College. The boys and girls must be started as though they were to remain on the farm, and not train them for something else. "As the twig is bent the tree is inclined." France provides us a good object lesson, as the primary education is along the line of agriculture, with the result that 75 per cent. of her population live on farms. Her financial standing is good, as her subjects have \$60,000,000 in the Government savings bank. She exports much, while England imports \$80,000,000 worth of food and other stuffs annually where such education is not given. Russia teaches agriculture in the Public schools, which

have gardens and plantations around them. We Canadians need less High school and more agricultural training. Agriculture should be a compulsory subject in both the Public and High schools. Seventy per cent. of our boys and girls live in rural districts, but too many leave it when they grow up. Our history might well deal with the lives of such men as Harrington, who lived for agriculture and added millions to the country. Our geography might dwell upon the soil and products of various parts of our country. Mr. Pattullo advocated the conversion of half of our High schools into elementary schools of agriculture, to be under the direction of the Provincial Minister of Agriculture. These schools would then act as feeders of our noble Agricultural university at Guelph. It is true that the State owes and provides everyone an opportunity of education; then why not have it of a sort that is most needed and most beneficial.

Professor C. C. James, Deputy Minister of Agriculture for Ontario, in an evening address referred in his usual eloquent and vigorous manner to some of the advances made in agriculture, especially dairying, within the last fifty years. Fifty years ago Canada was not a Dominion and we had not a mile of railroad in the (Ontario) Province; our telegraph system was fifty years ago about to commence; and reapers were just being used for the first time. It was not until 1867 that the first cheese factory was established in this country, and not until 1884 the first butter factory. Yet the dairy business has at the present time assumed very large proportions. The annual output of milk and its products amounts to about \$37,000,000, a very important industry. We have had a wonderful development of late years in connection with our towns and cities along manufacturing lines. The introduction of electricity, the telephone, the electric light, electric cars, and electric motors, all have followed each other in quick succession, with the effect that the attention of the citizens of this and other countries has been almost entirely directed to the great advance made along these lines, and we are apt to think at times that agriculture has not made such rapid progress, but such is not the case. After the introduction of the reaper came machine after machine, and now we have the modern cheese and butter factory with all its splendid equipment. In keeping with this we find men producing milk at low cost and disposing of it at much more profit than others who use their brains less. We hear of a gentleman who gets 12 cents per quart for milk by catering to a special class of customers, in Chicago, by conducting his business as intelligently as the most careful business man. Men succeed where others fail because they like their business, and they like it because they understand it. If men in other lines conducted their business with as little purpose and understanding as most agriculturists do, failure would surely be the result. More skill must be exercised in growing of crops and in the feeding of stock. We must understand the nature of the soil and the most suitable crop to grow. If we can by a better understanding increase our crops one bushel per acre it would add millions to our total wealth. The field of horticulture too opens up with great possibilities to those who will give it the necessary attention. Reference was made to the great advantage that would be derived from having our butter made in creameries instead of at home, so that the good price would be obtained for the whole output. In conclusion, Prof. James remarked that "all the goodness of a good egg can never make up for the badness of a bad egg." Success in cheesemaking, success in buttermaking, and the building up of this which is now our greatest industry depends upon keeping ever in mind, that all the goodness of a good cheese will never make up for all the badness of a bad cheese, and all goodness of a good pound of butter will never make up for all the badness of a bad pound.

Branding Bill.—The Hon. Thos. Ballantyne introduced a discussion upon the Branding Bill, setting forth the origin and advantages of having the word "Canadian," the day and month of manufacture branded upon all cheese shipped out of Canada. His claim was that we must treat Great Britain honestly if we are to hold her market. We have everything to gain and nothing to lose by being thoroughly honest, and we can gain nothing, and may lose a great deal, by sending one month's cheese for another. If July cheese has an undeserved bad reputation, the branding of the date of manufacture upon them would show the falseness of that impression. Those who opposed branding the date of manufacture upon the cheese claimed that our cheese is now bought on its merits and not on the date it was made. Prof. Robertson spoke in favor of registration as a means of tracing bad cheese to its source. After some discussion, the following resolution was carried by a large majority:—"That this meeting would recommend that the word 'CANADIAN' be branded upon each cheese and package of butter for export."

Winter Buttermaking was the subject of a paper by J. H. Monrad. Winter feed is cheaper than summer pasture, provided silage is used. Cows can best be dry during the hot, dry weather. A vacation of six weeks or two months is enough for a cow. Some cows should calve in fall and some in spring. We then have better chances of uniformity. In co-operative winter buttermaking the milk should be delivered every day if possible. If this cannot be done the cream should be gathered from local skimming stations. This affords an advantage in feeding the skim milk to calves and hogs.

Temperature is the all-important factor in winter buttermaking. It is therefore important that creameries be constructed so as to give the maker full control of the temperature. A strong claim was made for reliable commercial pure cultures in their ability to give uniform results. Pasteurization was recommended as a good means of getting rid of foreign flavors. While pasteurization is not a panacea for all evils, it is certainly a great promoter of uniformity.

Practical Buttermaking was taken up by Mr. J. B. Muir, of Avonbank factory, who has written a number of practical articles for the FARMER'S ADVOCATE. His paper was largely an epitome of what our readers have already seen from his pen. It consisted of a relating of his own practice and experience in successful winter buttermaking. The feed and care given the cows producing the milk, the condition of utensils and milk has much to do with the final product. Separation is done at from 90 to 95 degrees. Pay close attention to the separators and take a sample of the skim milk every 15 or 20 minutes to determine the quality of the work being done by the separators. Use a good, clean-flavored "starter" for ripening the cream. This is put in early so that correct flavors will become fixed and thus keep the field. Make the starter from fresh skim milk. Use about 10 per cent. of "starter" and ripen at 65 to 70 degrees of temperature. When the cream has become sour, cool quickly below 60. Mr. Muir churns at 53 degrees, which does exhaustive and first-class work. The cream should have from 90 to 95 per cent. of butter-fat to churn well at this low temperature. Allow the cream to stand at 50 to 52 degrees for two or three hours before churning, in order to harden the fat globules. Strain the cream into the churn. Use no color for the English market, and about half an ounce to 1,000 pounds of milk for home markets. Never fill the churn more than half full, and one-third full is better. See that the temperature does not become too high while churning. Churning should not be done in less than 45 minutes. Test the buttermilk daily to see that no loss of fat is being sustained. Wash, with water at 55 degrees, as little as possible so long as the buttermilk is removed. Use as much water as there was buttermilk. Revolve the churn for two minutes in washing, and drain off as quickly as possible. Allow the butter to drain for 20 minutes, then salt in the churn. Put on half the salt to be used, then tilt the churn one way and put on half of what is left, then tilt back the other way and put on the balance. Give the churn a few turns or mix in the salt with a wooden butter-fork. Allow it to stand in the churn or in tubs for two hours for the salt to dissolve. Use one ounce to one pound of butter for home markets, ¾ ounce for British markets. Use fine, easily dissolved salt that has been kept in a clean, dry room free from bad odors. Work the butter just enough to rid it of surplus moisture and distribute the salt evenly. About 12 to 15 turns of the worker will be found sufficient, when the color should be uniform. When butter is salted on the worker more working is necessary. Put up the butter in pound prints or pack it in tubs or boxes.

Butter for the British Market.—Mr. Muir is this winter, together with some half dozen other factories, putting up butter for the Manchester (Eng.) market. The butter is shipped by the Hon. Thos. Ballantyne. The butter is of uniform quality, made without the addition of artificial coloring, and with ½ of an ounce of salt to a pound of butter. The package used is the 56-lb. square package made of ½ inch spruce wood. It is well made and painted inside with melted paraffine and lined with heavy parchment paper, as described by Prof. Robertson at the Creameries Convention reported in last issue.

During the discussion which followed Mr. Muir's paper, Mr. F. J. Sleightholm, principal of the Strathroy Dairy School, claimed that he was getting very close skimming at a temperature of 65 to 80 degrees.

Wise Stabling of Cows.—The Hon. Sydney Fisher gave a practical and highly valuable talk on this question. He recommended the admission of much sunlight, also whitewashing the stables annually. This can be easily and well done by means of a spray pump. Grow food for the cows, and do not make them live on whatever your old rotation will furnish. Study her needs and provide for them. Winter buttermaking must go hand in hand with summer cheesemaking. He advocated milking the cows ten months of the year.

Square Cheese.—There were on the platform two large square cheese—samples of a number being made at the Guelph Dairy School and sent to the London (Eng.) market to ascertain whether or not there is any advantage in sending square over round cheese.

The display of fine "Diamond Crystal" dairy salt made by the Windsor Salt Company was especially worthy of note; also an exhibit made by the T. T. Coleman Estate, of Seaforth. The gang press, Babcock tester, and milk separator shown by the firm of Richardson & Webster, St. Mary's, were referred to by the committee on utensils as being a credit to the manufacturers from the standpoints of adaptability and construction.

Mr. J. H. Jull, of Brant Co., Ont., referring to improvement in the FARMER'S ADVOCATE, says: "I know how it would improve the farming methods of some farmers; that is, to take it and read it carefully and then act upon what they have learned."

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Cheese and Butter Makers' Convention.

The Cheese and Butter Makers' Convention, held last March at the Ontario Agricultural College Dairy School, Guelph, was undoubtedly one of the most helpful gatherings, to those who attended it, ever held in the Province. Coming at a time just before the factories opened, the live subjects were brought to the front and discussed by some of the brightest and best makers in Ontario in a way to teach many lessons which were eagerly desired. It has been thought wise to hold a similar meeting this coming March at the same place. It is to be held early in the month, probably on the 5th inst., but a card dropped to Professor H. H. Dean, at the O. A. C., Guelph, Ont., will bring the intelligence of the correct date, which is not yet finally decided.

Cost of Milk Production at the O. A. C.

To the Editor FARMER'S ADVOCATE:
SIR,—Please correct the statement in ADVOCATE of February 1st in reference to the loss on food fed to a cow at the Ontario Agricultural College. The loss was \$2.69, not \$26 as reported. After charging this cow for all the food eaten, and selling her butter at 20 cents per pound, she made a loss, as stated, of \$2.69. Your query, "Dairy farmers, what are the cows in your herd doing?" is a very important one—one that ought to stir up the minds of your readers who are keeping cows with very little knowledge of what they produce or how much it costs to feed a cow during the year. I may add that the food cost of a pound of butter for our herd (10 cows milking) was 12.3 cents for December, 1896; whereas in December, 1895, the food cost was 18.8 cents per pound of butter. We are hoping to materially reduce the food cost of cheese and butter for 1897. Who will co-operate in this matter, and give others the benefit of their experience?
Dairy School, Guelph.

H. H. DEAN.

POULTRY.

How to Make Hens Pay.

- 1.—How many hens do you consider it wise to keep on the average 100-acre farm, and to what age?
- 2.—With a view to eggs, table birds or both, what breeds or crosses would you recommend as likely to give most general satisfaction?
- 3.—What plans would you suggest for improving an ordinary farm flock of mixed fowls, such as selection or "weeding out," new breeding birds, setting of eggs, etc.?
- 4.—What period of the year is it advisable to retain male birds with the flock? How about numbers together?
- 5.—By what means do you secure the best eggs for hatching?
- 6.—What treatment would you suggest for a pen of breeding hens (from which the eggs are to be set) during the latter part of winter and spring?
- 7.—What sort of a house do you recommend with regard to (a) size, (b) location, (c) warmth, (d) sunlight, (e) ventilation, (f) dust bath, and (g) watering, and to what extent should fowls run out in winter?
- 8.—How do you manage to keep hens free from lice and disease?
- 9.—What foods or mixtures do you recommend for (a) egg production, (b) fattening, (c) how often would you feed per day, and (d) what value do you place on green bones, and vegetables, and sunflower seed?
- 10.—How many eggs per year should a good farm bird lay to be profitable, and at what age should broilers be sold?
- 11.—Should turkeys, ducks or geese be allowed to run in the same house with hens; if not, why?
- 12.—What is your idea of keeping turkeys, ducks or geese on the average farm, and how do they compare with hens as to profit, etc.?

1. I am of the opinion 100 hens on a 100-acre farm is enough; or I would prefer fifty good ones to one hundred poor ones. No hen, unless an exceptionally good winter layer, or a rare mother to chicks, should be kept over two years. The plan I pursue is, after the second winter to market in May or early June when poultry is scarce.

2. My experience teaches that cross-bred fowls are harder than pure-breds, and equally as good layers. However, if two non-sitting breeds are crossed, or if a non-sitting breed and any breed that will sit are crossed, the progeny in both cases are likely to be sitters. Cross-bred fowls mature early, lay usually with less care, and have an inclination to sit more than pure-bred fowls. For eggs the following breeds are good: Leghorns, Minorcas, and Andalusians, and are all non-sitting breeds. For both eggs and meat the Plymouth Rock and Wyandotte are the leaders. These two breeds are the best all-round fowls in the market. For crosses I would recommend Plymouth Rock pullets mated to Leghorn cocks. Wyandottes and Leghorns make fine broilers and are good layers, but perhaps are a trifle small for roasters. For first-class roasting fowls, mate Brahma pullets to an Indian Game cock.

3. Never use any male that is not pure-bred, nor one closely related to any stock in breeding pen. Select your best winter layers that do not show an inclination to sit often, and mate to a male from good laying strain, being careful that he is well-proportioned, or, in other words, would dress well for market. Mate ten or twelve of your best hens to this male, and set ONLY these eggs.

4. Male birds should never be allowed with the flock during the months of June, July, August, and September, and better if not among the flock only during breeding season, which is the months of March, April, and May. One male is enough for any farmer, and unless an exceptionally good one, it is, perhaps, wise to dispose of him after breeding season. A number of males running together is a waste of food and capital, as well as a hindrance to egg production, and also an injury to the keeping qualities of eggs. Infertile eggs do not spoil when exposed to heat.

5 and 6. The breeding pen should consist of ten or a dozen females and a pure-bred male, placed in a roomy pen with an outdoor run. They need plenty of exercise, with good food. Feed liberally with vegetables and meat, and not too much grain. Great care should be exercised not to bring about dysentery.

7. Allow 6 sq. feet of floor space for every hen. (b) Location should be dry and inclining to the south or south-east. (c) The house should be warm enough not to freeze the fowls' combs. (d) One-third of the south side of the house is enough sunlight. (e) Opening and shutting the doors usually admits plenty of fresh air in cold weather, and in warm weather the doors may be left open during the day. Ventilators are usually drafted at night and cause considerable disease. (f) Have a sandy loam floor and the hens will have a complete dust bath. If not, make a box 2½ feet wide and the length of your window, and fill with road dust. Do not use ashes, as it mars the beauty of the plumage and renders the fowls unsightly. (g) Fountains are nice, except when they freeze, full of water, which they are apt to do in winter unless emptied every night, and you are almost sure to neglect it sometimes. I have found a pan 12 inches square and 2 inches deep placed on a box 1 foot above ground, and the box fastened between the partition of two pens, answers well. It is easily cleaned and waters two pens. (h) Nests are most conveniently arranged under the droppings board under the roost. By this plan eggs can be gathered from the walk, and avoids all disturbance of going among the fowls. They should be made movable, so as to be taken out and thoroughly cleansed. When fowls have access to a barnyard, it is well to let them out on warm days, but never to allow their combs to freeze, otherwise I prefer keeping them inside.

8. Remove all droppings once or twice a week, paint roosts with coal oil every week in summer and every two in winter. Give plenty of exercise and pure water, together with wholesome food. NEVER set a hen in the henhouse.

9. (a) At present I am feeding equal parts by measure of cooked turnips, bran, and oats, with a little corn meal. Formerly I fed peas, barley and oats, but as my hens are most too fat I have done away with the peas and barley. I like to feed half cut steamed clover and half roots, instead of clear roots. I allow one pound of meat or cut bone daily for every sixteen fowls. The above is scalded and fed warm in the morning. At noon I give a few handfuls of oats, wheat or barley, well covered in litter; about 3 o'clock feed again in litter, this time buckwheat; and before going to roost fill up the troughs with buckwheat, and take up what is left. This is the only method I know of where, with certainty, every hen has had all she wants to eat. (b) Feed in the morning scalded bran and corn meal in the proportions 1:3. At noon give one pound of meat to every sixteen fowls, and at night give all the corn they will eat. (c) Green bone is excellent food for laying hens or growing chicks. Vegetables are a very essential portion of the winter ration. Sunflowers are very fattening, and perhaps when fed in the early fall have a tendency to advance the moulting period.

10. Every hen should lay at least ten dozen eggs per year. Broilers should be sold when they reach a weight of 1½ to 2 lbs. each, or from ten to twelve weeks old.

11. To obtain best results hens should have a house by themselves. Ducks are very noisy at night and disturb the hens. Furthermore, they create an odor which is not agreeable to the well-being of hens. They are sometimes quarrelsome. Geese are somewhat similar to ducks, and are sure to get too fat if fed with hens. Turkeys are very quarrelsome, and usually devour the most delicate morsel in the food. They will not stand confinement.

12. Turkeys can be made profitable by feeding in winter mainly on bran and roots, with a little whole grain, and after harvest being turned on the grain fields. Ducks to be profitable need to have a ration of ground grain rather than whole. Feed plenty of vegetables and meat, mixed with about half of ground oats and corn meal. A little whole grain should be given at noon. Never feed a duck after it is ready for market, which is when it becomes fully covered with feathers, or about at the age of ten weeks. Geese need a large amount of vegetables in winter, and in summer plenty of short, juicy grass, with plenty of water.

Hastings Co., Ont. W. R. GRAHAM.

An Experienced Poultryman Testifies.

1. On a 100-acre farm 50 to 80 hens could be kept profitably. A farmer generally keeps more in summer than in winter. Hens should never be kept over three years old, unless some very valuable breed is desired to be retained, as some hens are more valuable than others for egg production, etc.

2. Undoubtedly the white and brown Leghorns are the best for egg production, but the Plymouth Rock, Wyandotte or Houdan is the best for table and eggs combined. The Light Brahma comes early to maturity, and is an excellent winter layer. A cross between the Indian Game and any of the Asiatic breeds makes the best table fowl I have ever tried, being large, plump and tender.

3. By getting a pure-bred cock of any desired breed, and crossing with the common fowl—but

there is nothing like the pure-bred fowl for egg production—the breed can be improved by selecting your best hens and setting their eggs.

4. I retain my male birds with the hens nearly all the time. They say that eggs will keep better unfertilized, but I question if the hens will lay as well. This is a disputed point. One cock to 12 or 14 hens of the heavy breeds is about the number I use, but of the non-sitting varieties two dozen can be kept with each cock and the eggs be all fertilized if the male bird is young and vigorous. The feeding has a great deal to do with the eggs being fertile.

5. By feeding a variety of food such as oats, buckwheat, barley, and wheat. Do not let the hens get too fat. Keep them in exercise all the time by scattering the grain amongst the litter, and make them scratch for it. Give them plenty of green food. Well-cured green cut clover is an excellent egg producer, and the hens are very fond of it. Plenty of skim milk is also a good thing. Plenty of ground bone, oyster shells, etc., to form the shell.

6. Do not let them get too fat; give them plenty of albuminous food, and see that the nests are well filled with cut hay or some other thing that will keep the eggs at the proper temperature, and see that the hen does not remain too long off the eggs in cold weather, as they soon get chilled. Sprinkle the hen with insect powder, and also the nest before setting, so there will be no danger of lice on the young chicks when hatched. Sulphur is also a good insecticide, and a little in the food is good.

7. I have a house 24 x 12, with four windows in it facing the south, in which I winter fifty hens, and have never had any disease of any kind. I let them out very mild days, and even when the mercury is very little above zero, if the sun is shining. If they are kept warm at night that is the great secret. Have two ventilators that I can open and shut at pleasure. Keep a dust bath filled with road dust, coal ashes, etc., in which I put sulphur and a little carbolic acid. Always give plenty of skim milk and pure water. In very cold weather, I warm the water. I have been getting eggs all winter from the early hatched pullets, and expect them all laying very soon.

8. Perfect cleanliness. Clean out the droppings at least once a week. Sprinkle plaster of Paris over the floor, which fixes the ammonia, and barrel the guano away for future use in the kitchen garden. I consider the hen manure equal to Peruvian guano for growing onions, etc. I have grown the first prize onions at our local shows with it for years, and very little does (I overdid it at first and burnt them all up). By using whitewash of quicklime, in which is incorporated one ounce of carbolic acid to the pailful, annually or semi-annually if necessary.

9. I feed boiled potatoes mixed with shorts, and a spoonful of cattle spice in it or a little pepper, in the morning, oats or barley at noon, and a little wheat at night. Every farmer should have a bone cutter; you can get one for \$7 and \$10. I consider they will pay for themselves in a few years. They cut up green bones when broken with a hammer, which are invaluable for winter egg production when eggs are worth from 20 to 25 cents per dozen. For fattening sunflower seed is also good. I use chopped corn or peas mixed with boiled potatoes, shorts, and a little cattle spice, and shut them up.

10. I have had Leghorns lay as many as 200 eggs annually, but as a rule they are non-sitters; 100 eggs will be about the average, if you let them hatch when they wish. You cannot raise chickens and have eggs also. I cannot get sufficient hens to sit to hatch all the eggs I want. The earlier you can get chicks on the market the better prices you will get. Feed all they can eat until two months old, when they make good broilers.

11. Turkeys, ducks, and geese should never be kept with chickens. Turkeys are very hardy and require very little shelter; if free from wind, an open shed will do in winter. So also are geese, but my ducks I always put in at night, with a good, comfortable bed of straw. Ducks often lay in February, and lay very early in the morning. Turkeys are very hard on young chickens, and should never be allowed near them. I consider on every 100-acre farm a farmer might raise profitably fifty turkeys, the same number of geese, and 100 ducks. I have done it and made it pay, as the most of the food required for the two former is when they are young; after they are six weeks old they can forage for themselves on grasshoppers, etc. Ducks are omnivorous and will eat boiled vegetables mixed with a little bran or shorts, and keep fat. They are as good and even better at catching grasshoppers, crickets, etc., than young turkeys.

12. I consider that \$100 a year can be made from turkeys, geese, and duck on a 100-acre farm, with very little trouble or expense even at the low market price at which they have been recently selling. One of my reasons for saying so is that they require so little food until they are put up to fatten in the fall, although young ducks can be profitably forced for the early market even at three months old. One of my neighbors raised 100 turkeys last year on a 100-acre farm, and sold them for \$1 each, and fed them in the fall for only about a month, so you see that paid well.

Wellington Co., Ont. MR. JAMES ANDERSON.

"Blood will tell" in fowls as in other animals, therefore it is wise to carefully select the layers of eggs to be set, and mate them with what will most probably sire the desired class of fowls.

Over \$2.00 per Head Profit--Eggs 50c. per Dozen.

The first thing to consider is a good warm house, well lighted, and kept perfectly clean. The next is to procure some good stock of whichever breed you fancy. Pure-breds pay far better than scrubs. As to management of them to attain the best results, feed a warm mash at daylight in the morning, consisting of bran (half), shorts (quarter), chopped oats (quarter), and into this mix a pot of boiled vegetables--turnips, small potatoes, cabbage or any scraps you happen to have, which should be boiled the day before and warmed up in the morning before feeding. Don't give them all they will eat of this, or they will only stand around idle. Just feed a light breakfast, and about half an hour afterwards go round again, hang up troughs, and scatter a few handfuls of screenings or oats amongst the litter to start them to work. The best litter is oat straw; keep the floor covered with it to the depth of 4 to 6 inches, and scatter all grain in this to make them scratch. At noon I feed cabbage and turnips, and three times a week cut bone. For supper, I feed about 4 o'clock in afternoon, to give them time to scratch grain from amongst litter. Feed all the wheat or barley they will eat up clean, sending them to roost with a full crop.

The amount of feed required for a pen of fowls cannot be stated exactly, as no two breeds require the same amount. The best plan is for the attendant to handle his birds as he goes his last round at night. If he finds them getting too fat, cut down the morning mash and feed oats at night for a few days, when they will start laying again. The secret is, feed as much variety as possible; keep them working; scratching is their natural way of procuring their food. The more you can make them scratch the better results you will obtain. Keep sharp grit of some kind before them all the time. This is important, as fowls require grit to grind their food. Keep fowls free from vermin by supplying them with a dust bath placed in front of a window where the sun shines. Coal oil the roosts about once a week, and change litter in nest boxes. Follow these directions carefully and you will be rewarded with an abundant supply of eggs when prices are at the top notch. My pullets started laying on November 14th, and have kept it up steadily. I have great demand for fresh eggs at fifty cents a dozen; that is the time they pay. I had a clear profit of \$2.11 a head on my poultry last year, and had to buy everything. Where a farmer could raise his own grain, has all the straw he requires, can raise all vegetables, has milk, which is a complete feed in itself for poultry, should with all these advantages be able to make his poultry pay at least \$2.50 a head--one of the best paying branches on the farm. GEORGE WOOD.

GARDEN AND ORCHARD.

Small Fruit Growing on the Farm.

BY B. GOTT. (Continued from page 62.) GOOSEBERRIES.

The gooseberry is raised either from seed or from layers, and is indigenous to this country. By studiously crossing it with some of the best old English sorts we have produced some fine strains of growth and quality. Our stock is now very good for almost every purpose. A good strong clayey loam seems to be the soil that suits it best, and yet in every case we have to be very careful of excessive growths of mildew. The ground should be well worked and kept clean. The young plants or bushes must be procured from a reliable nurseryman, and may be two years old and well rooted. They may be planted in separate open places or in rows four feet apart every way, and kept thoroughly clean and vigorous. The pruning may be done late in the fall or early spring, and consists of cutting or thinning the internal growth and cutting back the young shoots one-half yearly. Fungus and insects, especially in our climate, and conditions, are very apt to attack them in their early growth. Against these a war must be kept up most determinately. For fungus a well-prepared kerosene emulsion must be used. It is made as follows: Take four quarts of kerosene oil, one-quarter pound of common bar soap, and two quarts of boiling water, and mix thoroughly. When using take one quart of this emulsion and mix with nine quarts of water, and apply. This is also the best application for roses. For insects use incessant vigilance and insecticides composed of powdered white hellebore in the proportion of one large tablespoonful to ten quarts of water.

Varieties.--Triumph--Fruit fine and large; very fruitful and hardy; no mildew. Industry--Fruit large, red, fine and good; plant hardy and very vigorous. Whitesmith--Large and fine; English sort of first quality. Pearle--New, most prolific bearer, and very fair quality. Columbus--Large and fine foliage; good and promising. Downing--Fruit large and whitish-green; good grower.

These are all good substantial sorts, and afford a good variety to suit all tastes and circumstances. If I were asked to select the two best, we could not go astray on Pearle and Industry for family uses.

CURRENTS.

Though I need not to say much about currants, yet on account of their great value I must give them a place. They are not particular as to soils,

doing well in almost any soil if well drained. Procure from reliable sources good strong two-year-old young bushes, and plant them in the spring or fall, in a plot provided for them, four feet apart every way, and keep them thoroughly attended to. The pruning, general management, insect pests, etc., are all similar to those of the gooseberry and may be treated similarly. In color and quality of fruit they are of three classes, viz:

Red: Prince Albert--Very large, light red; bunch long; plant strong and fine. Eclipse--New, fine and good; very hardy and promising. Fay's Prolific--Very large in bunch and berry; plant very hardy. Cherry--A good old sort; very large fruit, and profitable. Wilder--New, large and fine fruit; very promising. Red Cross--New; one of the largest and finest of the new ones.

White: Grape--Very large and beautiful; best table sort out. Dutch--A very good old sort; fruit pure and fine. Versailles--New and good in bunch and berry.

Black: African Queen--New, very fine, large and promising. Lee's Prolific--Good standard sort and very productive. Saunders--New; fruit fine and good; very promising. Prince of Wales--One of the latest, and well reported.

These are all the most promising and profitable sorts of these various fruits at present offered to the public. Not that they include the whole list of new fruits so offered, for they are very numerous, but we could not recommend them all for the farmer's home garden. I greatly love the farmer's garden, and I hope that what little I have here tried to do to help and prosper it will be acceptable, and so a great service to our most beloved country and its people.

APIARY.

A Study in Bee-Keeping.

BY A. E. HOSHAL, LINCOLN CO., ONT.

Without considering the value of their products, and to obtain which usually is the principal if not the sole object for which bees are kept, there are other advantages to be derived by the agriculturist from their existence. Every farmer knows the degenerating effect among animals of what is called inbreeding, but how many there are who do not understand nor recognize this same principle in the vegetable kingdom, or perhaps sometimes even know that such a thing as the male and female principle exists in plant life at all, and that before a plant can conceive to bear seed it is necessary for the fecundation of its bloom to take place. Many if not most of our plants are perfect flowering; that is, their flowers each contain both stamens and pistil, and so are capable of fertilizing themselves, which is accomplished largely by the wind blowing or jarring the pollen from the anther on the stamens, and, assisted perhaps by gravitation, bringing it into contact with the pistil and thereby causing the plant, as it were, to conceive. This, however, it will be noticed, is the closest kind of inbreeding, and, as in the animal so in the vegetable kingdom, has a decidedly degenerating effect. True, the winds do, more or less, blow the pollen from one flower to another, but in doing so it is much more liable to be brought into contact with the pistil of the flower from which it is blown than with that of any other. In the visits of the bee and other honey-gathering insects, which in their search for honey carry the pollen on their bodies directly from one flower to another, we have not only a great help in the fertilization of the bloom on our plants, but also the most perfect distribution of pollen from one blossom to another which nature affords; and hence, also, in this is to be found the most potent factor which we have in preventing the inbreeding of our plants and its consequent degenerating effects.

In fruit-growing districts at times many and bitter are the complaints concerning bees destroying certain varieties of ripe fruit through their breaking, as is claimed, the skin of the fruit and sucking its juice. This to my mind is a decided mistake. That they do suck the juice from broken overripe or decaying fruit I admit, and in doing so they are acting as scavengers and not as destroyers; and just in proportion as they succeed in keeping the juice of decaying fruit from coming in contact with that which is sound do they help in its preservation. Upon this same principle we remove a decaying apple from the barrel, in order that those next to it may not become affected thereby. I do not mention this nor the part which bees perform in the fertilization of plant bloom so much as an inducement for any one to keep them as I do to place it against those prejudices with which occasionally they are beset, and to show that in obtaining a honey crop we are filling a niche in the economy of nature which is of benefit to every agriculturist, and in doing so we neither impoverish his soil nor rob him of that which is to him of any value.

For many bee-keeping has a kind of peculiar fascination which they either cannot or do not resist; others again are looking to it with a view of adopting it as a side issue to add a little to their income, as well as having in it a kind of outdoor recreation; while, again, others are considering the advisability of adopting it wholly from a dollar and cent point of view. For all these bee-keeping has its special advantages, and will yields its returns if intelligently pursued. However, let me remind all that among those who have tried modern systematic bee-keeping a very large percentage have failed. This may seem somewhat discouraging to those

who are contemplating giving it a trial. It will be found, however, that either one or more of the three following causes have been accountable generally for these failures: (1) The neglect of those concerned to study up and thoroughly post themselves concerning that which they have undertaken. (2) On account of the pressure of other work, neglecting to give the bees that attention which they require just at the time they need it. (3) Not getting started right.

I am asked, "Is Canada adapted to bee-keeping?" In reply I ask, "Is it adapted to dairying?" and you cite me to those who are successfully engaged in it. My reply is similar, and I cite you to those who are engaged in bee-keeping, and if they are intelligently prosecuting it, their record is my reply. Localities vary greatly, even within short distances, in the succession, character, and quantity of their flora. These all effect the details in the management of our bees, and also the amount of honey obtained; but the localities which will not ordinarily support with profit at least a limited number of colonies of bees, when rightly handled, I believe are few.

Successful honey-producing is the obtaining of our product at the least cost per pound, and not necessarily the obtaining of the largest yield per colony. This statement means about this: a given apicultural field or area (this probably would be a tract of country enclosed by a circle say five miles in diameter, the apiary being its center) will yield a certain amount of honey, how can it be gathered at the least cost per pound? Can it be done by placing in this field say 100 colonies of bees, and through expending a considerable amount of time and labor to have them do their best, obtaining from them say 100 lbs. per colony; or is it done by placing, instead, a greater number of colonies in this field, say 200, and through expending less time and labor upon them, obtaining but 40 or 50 lbs. per colony? From this illustration it is not clear that obtaining the largest possible yield per colony does not of necessity mean the production of honey at the least cost per pound.

QUESTIONS AND ANSWERS.

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

Legal.

SALE OF CATTLE.

FREDER, Huron Co., Ont.:--"I sold cattle to a drover, to be delivered at a station on a certain day, but on that day the roads were almost impassable on account of a snowstorm, and I did not deliver the cattle. Was I bound to deliver the cattle on that day, and am I liable for damages for the non-delivery?"

[As you contracted to deliver the cattle on a certain day, you were bound to deliver, if it were at all possible, and we think you could not successfully contend that it was impossible. It being difficult would not excuse you, and we suppose you could have taken them over on the previous day and kept them near the station ready for delivery. The purchaser being a drover, you were bound to consider that it was probably essential that the cattle were required for shipment on that day, and probably with other cattle, possibly just in time to make a connection with a certain railway or steamship. The drover is therefore entitled to damages to the extent of his actual loss occasioned by your default, and, of course, the loss might be very trifling or very considerable, according to the circumstances.]

TOWNSHIP ELECTION.

ELECTOR:--"1. A member of our Township Council is assessed as owner of a property rated in the last revised assessment roll at \$135.00. Is this sufficient property qualification to qualify him as a member of the Council? 2. Is a person enabled to attend and vote at council meetings, notwithstanding insufficient property qualification, after notice of proceedings to unseat? 3. What proceedings are necessary to have him unseated?"

[1. No. 2. Yes. 3. Application to the court by way of petition to have his election set aside; such proceedings to be commenced within six weeks after the election or within one month after the acceptance of office by the person elected.]

LINE FENCE.

WENTWORTH:--"A and B are owners of adjoining farms, the west part of the line fence being A's. Recently A sold a portion of the east part of his farm for school purposes, the part sold being alongside of B's part of the old line fence. The school agrees to keep up all its fences. What portion of the fence between the part of the land now owned by A and B should be kept up by each?"

[The fact that the school keeps up all its fences makes no difference as to the legal position of A and B as to their own present dividing fence, and each must, therefore, keep up his fair proportion; and such proportion, in the absence of special circumstances, would be one half each of all of the line fence lying west of the school property.]

HOLIDAYS:--"Would you please answer through your paper the following question: How many holidays can a farm hand have in a year?"

[Aside from any special contract such a servant cannot absolutely claim any holidays. He is bound on statutory holidays and Sundays to do the usual

FEBR... necess... to do... RE... "2... "3... liabili... [1... to pa... signed... 2... promi... two o... 3... the n... amount... serve... sentat... credit... and n... in the... debtor... the a... one o... all lia... the deat... Paym... other... The... contri... again... the ot... L... two-y... of the... seems... somet... seem... rubber... ing to... will h... [Th... face a... jaw, b... the i... freque... neck... the ja... varyin... These... throug... bodies... these... coloni... yellow... the us... grains... These... bodies... rosetta... potassa... requir... drama... 1... Not... curing... ment... eight... lime... on the... as time... He ga... was c... gradua... J. A... rising... quart... carrots... tongue... she ca... She is... sucking... do for... [Th... trouble... often c... tracted... of har... bellied... mend... sloppy... good h... the roc... the hat... means... JOHN... horse, s... head o... down, l... the win... or snow... the sta... CATE if... in time... [Wit... thing li... think th... (inflam...

necessary work, such as feeding stock, etc., but not to do general farm work not work of necessity.]

PROMISSORY NOTES.

READER, Simcoe Co.:—"1. What is a joint note? "2. What is a joint and several note? "3. What is the difference between them as to liability of the makers?"

1. A promissory note which reads "we promise to pay, etc.," or "we jointly promise, etc.," and signed by two or more persons, is a joint note.

2. A note which reads "we jointly and severally promise, etc.," or "I promise, etc.," and signed by two or more persons, is a joint and several note.

3. Upon the joint note each debtor or maker of the note is liable to the creditor for the whole amount, so long as the creditor is careful to preserve his legal rights. If one maker dies his representatives are not liable for any part to the creditor. If one or more of the makers are sued, and not all, they have a right to have proceedings in the action stayed until the other living joint debtors who are in the country are made parties to the action. A judgment taken against some or one only of the joint debtors frees the others from all liability. Upon a joint or several note each of the debtors is liable for the full amount, and on his death his liability descends to his representatives. Payment by one discharges the liability of the others to the creditor.

The debtor who has paid may have his right of contribution against his co-debtors. A judgment against one maker is no bar to proceeding against the others.]

Veterinary.

LUMP JAW.

L. LOVE, Muskoka, Ont.:—"I have a valuable two-year-old bull that has a lump on the right side of the lower jaw, and is hard—quite bonelike. It seems to have rounded up more this last week, something the shape of a goose egg. It does not seem sore, though he does not want it handled or rubbed; there is no fever nor any signs of it coming to a head. If you can suggest anything that will help it I would be glad?"

[This is a disease of the tongue, bones of the face and lower jaw, known as actinomycosis, or lump jaw, big jaw, wooden tongue, etc. It seems to be on the increase amongst cattle, and appears more frequently in the lower jaw and soft parts of the neck. When the disease attacks the soft parts of the jaw a rather firm, bonelike swelling appears, varying in size from that of a nut to that of an egg. These push their way outward, and finally break through the skin as small reddish, funguslike bodies. By scraping the cut surface of the tumor these cell masses and individual actinomyces colonies can be distinctly seen as pale sulphur-yellow specks or grains. To any one familiar with the use of a microscope the recognition of these grains is easily determined by any aniline stain. These grains consist of a collection of club-shaped bodies, all radiating from a center somewhat like a rosette. Treatment.—In many cases iodide of potassium treatment has been quite successful, but requires great perseverance and patience. Give two drams of iodide of potassium daily on bran mash. DR. WM. MOLE, M. R. C. V. S., Toronto.]

NOTE.—One of our readers reports completely curing a heifer with the iodide of potassium treatment last season. He had his druggist put up eight ounces iodide of potassium in two quarts of lime water, and gave a wineglass of the mixture on the meal fed daily, increasing the dose slightly as time passed, but not so as to effect the appetite. He gave her a good purge first. The treatment was continued for about a month. The lump gradually dried up and disappeared.—EDITOR.]

WIND-SUCKING HABIT.

J. A., Carleton Co., Ont.:—"I have a Clyde filly rising three years old. She is fed on straw, with a quart of hash (bran mash) and a light feed of carrots at night. She has a habit of sucking her tongue after taking mash or salt, and did it before she came off the grass. Sometimes she bloats. She is in good condition. What is the cause of her sucking? Will it do her any harm? What can I do for her?"

[There are few habits of the horse that are more troublesome to deal with than wind-sucking. It is often caused by want of work, and the habit is contracted for amusement. It will cause a great deal of harm to her condition. She will become pot-bellied and unthrifty. I should certainly recommend that you discontinue the bran mash and sloppy food. Give three feeds of oats and all the good hay she will clean up during the day. Take the rock salt out of manger. If she does not cease the habit write again, and we may suggest other means.]

INFLAMED MEMBRANE, POSSIBLY.

JOHN MILLIGAN, Grey Co., Ont.:—"I have a horse, six years old, troubled with something in his head or nose. He will throw his head up and down, hold it against his mate. Is worse during the winter season or a cold, windy day, when rain or snow is falling. He seems healthy and quiet in the stable. Please inform me through the ADVOCATE if anything can be done, or will it pass away in time?"

[Without examination it is difficult to give anything like a satisfactory opinion. I am inclined to think that you have a condition known as "ozena" (inflammation of the membrane of the nose and

frontal sinuses). You do not say if there is any discharge; if not, we would advise noninterference.]

UNHEALED WOUND.

GEO. W. DENSMORE, Colchester Co., N. S.:—"I had a seton put into a soft lump on the heel of a young mare. The following morning the leg was so badly swollen that she could scarcely move. In a week's time on the front of the leg, midway between the hock and the stifle joint, the skin peeled off on the outside about the size of a common dinner plate. It has run matter ever since. I would like to know what would make it heal? The leg is swollen. Do you think it will leave when she gets out, or will I have to rub it with anything to remove it? (2) I have also a cow with a large lump on her hip. We lanced it some time ago, but nothing came except a little blood. Perhaps we did not go deep enough to strike the matter. We have rubbed it with different things, but nothing has done any good. It does not seem sore to press it."

[From the description given we are of opinion that you have a very serious condition to do with. The first thing will be to get the animal into good condition by generous feeding, starting first with a dose of purgative medicine. Give Barbadoes aloes, 1 ounce; calomel, 1 dram; ginger, 1 dram; with sufficient molasses to form a stiff paste. Apply a good bandage from the hock to the foot, and apply this powder to the wound: Boracic acid, 4 ounces; iodoform, 1 ounce; to be powdered and mixed together. Dust on a small quantity night and morning. Do not apply water in any form to the wound. (2) With regard to the cow we advise that you apply a blister composed of cantharides, 1 ounce; hydrag. biniodide, 1 dram; lard, 4 ounces. This should be applied at intervals of one week, and watch for abscess, which lance and treat as an ordinary wound. DR. WM. MOLE.]

TUMOR ON LEG. PAUL DIESBOURG, Essex Co., Ont.:—"I have a mare colt that was cast about two years ago. She got her leg fastened around the rope to which she was tied, cutting her fetlock joint. The wound healed and she was turned out to pasture. Running around she must have struck the sore parts, which has caused a lump to grow about the size of a duck's egg on the outside of the leg. Will you please advise me what will remove the said lump?"

[From your description it would appear as if a fibrous tumor has grown on the seat of injury: If you can obtain the services of a veterinary surgeon get him to make an examination and remove the lump. Afterwards apply constant pressure by means of flannel bandages. This will cause absorption of the tissue and removal of the unsightly wound. DR. WM. MOLE.]

PROBABLY CATARRH.

A SUBSCRIBER, Wellington Co., Ont.:—"I have a ewe that has been running at the nose for nearly a year, a dirty green discharge. About three months ago a running sore broke out on her head where the horn comes out, which continued to discharge matter for about two months and then healed up; then it broke out on the back of her head and keeps discharging matter of a green color, having a bad smell."

[Unless the ewe is a valuable one we would advise disposing of her, as a diseased sheep in a flock is unsightly, and there is generally more or less danger of contagion. The disease is probably chronic catarrh, and the treatment we would recommend is to keep the ewe in a dry, airy place with access to a yard on south side of a building, and give the following mixture: Saltpetre, 1 lb.; sulphur, 1 lb.; ground gentian root, 1 lb. Mix thoroughly, and give a teaspoonful twice a day on the tongue with a spoon or in the feed. If this does not prove effectual in the course of two or three weeks change the treatment to half a teaspoonful of ground sulphate of iron three times a day in feed or on its tongue with spoon. Wash the sore daily with warm soft water and soap, and apply a lotion made of sulphate of zinc, sugar of lead, and pulverized alum, one-half ounce of each; add water enough to make a quart and shake thoroughly. For less quantity use one-half of above ingredients. This makes an excellent lotion for all kinds of wounds and sores where the skin is broken, also for scratches or grease in horses.]

BAD BLOOD.

F. G., Wellington Co., Ont., writes:—"I have a 13-year-old horse that is unthrifty; his hair long and dry, his skin tight and itchy on body and head. I feed well. What more can I do for him?"

[Get a purgative ball from your V. S. and give it to the horse, or give a purgative drench consisting of: bitter aloes, eight drams; ginger, one tablespoonful; common baking soda, one tablespoonful. Mix in a pint of warm water. Blanket, give moderate exercise, feed carrots or potatoes and bran mash with boiled flaxseed. Follow with a tonic powder, say ground gentian root, 1 lb.; sulphate of iron, 1 lb. Mix well, and give one teaspoonful twice a day in his feed.]

HORSES WITH MANGE.

C. E. PICKETT, New Brunswick:—"I have a pair of horses that had mange last year, and succeeded in curing it with little soluble phenyle, and partly with oil of tar, sulphur, and linsed oil mixed. Their necks were a little sore, and although three months has elapsed since, they are about in the same condition. I cannot notice any sore, but sometimes the skin is a little hard. How

can I ease their necks so that they will not irritate, and how can I prevent the return of mange with the warm weather?"

[You cannot do any better than you have done; continue treatment. Apply the liniment of tar and sulphur once a week, and wash with little phenyle every portion of harness, collars, blankets, walls of stable, etc. As it is always from the surroundings that animals are reinfected, if you get rid of it from your stable there is no trouble in preventing its return before the warm weather. DR. WM. MOLE.]

FREE-MARTIN.

S. T., Chickney:—"I have just killed a three-year-old heifer. She was "twinned" with a bull. She never came in season, and when I examined, after killing, could find neither ovaries nor womb. The bladder was the only organ communicating with the vagina. Is this usual?"

[When twin calves are of both sexes the female is generally barren, and is called in Britain a "free-martin." A post-mortem examination of such an animal usually reveals an undeveloped state of the internal organs of generation, and sometimes, as in the case of your heifer, these organs are altogether absent. There is absolutely no remedy. W. A. DUNBAR, V. S., Winnipeg.]

SCRATCHES.

W. S., Foxwarren:—"I have a mare (foal in June) that has the scratches, cracks in heel, and hind legs are swelled. Can it be cured, and if so, what will cure it?"

[In many cases of "scratches" much benefit is derived from a dose of purgative medicine, but, your mare being pregnant, it would not be advisable to administer it. Give, twice daily, in small bran mash, for two weeks: Hyposulphite of soda, half an ounce. Apply to the cracked heels, once daily, the following ointment: Oxide of zinc, one ounce; carbolic acid, half an ounce; powdered opium, six drams; vaseline, six ounces. Mix. W. A. DUNBAR, V. S.]

UNTHRIFTY MARE.

W. S. HILL, Indian Head, Assa.:—"I have a mare eight years old, feeding on straw with dry grain feed in the morning and boiled grain feed at night. She is very poor; ragged coat; hind legs swell a bit—not much; a dazed or far-away look about the eyes. She only works occasionally; seems weak, and if exerted much sweats easily."

[Your mare may be suffering from "progressive" or "pernicious" anemia, and, if so, it is incurable. Change fodder from straw to good hay. Give one feed daily of carrots or potatoes. Groom well with brush once a day, and cover with woollen blanket. See that your stable is kept clean and properly ventilated. When the weather is fine give daily moderate walking exercise. Give, night and morning, in food: sulphate of iron, gentian, and nitrate of potass., of each one dram. The evening diet should be a mash made by scalding four quarts of bran with water in which one teaspoonful of flaxseed has been boiled. Continue medicine for two weeks. W. A. DUNBAR, V. S.]

Miscellaneous.

CREAM RAISING AND FREEZING.

CONSTANT READER, Middlesex Co., Ont.:—"1. Does putting hot water in milk help to raise the cream in cold weather? 2. If you set fresh milk from the cow in a cold room where it freezes do you get all the cream off it? 3. Does it hurt the flavor of the butter for cream to freeze?"

[1. It is important that the temperature of the milk should be raised before setting to at least as high a point as when it comes from the cow, and the most convenient way to effect this is by the addition of hot water. It also helps to raise the cream, especially in milk from cows which have been milked for a long time, as the milk is thicker and the fat globules do not rise as freely as in milk from fresh cows. 2. If the milk is set in shallow pans the temperature of the room must be kept above freezing point to get the best results. If set in ice water in deep cans there is little danger from freezing, and the cream will rise pretty thoroughly, though the temperature is low enough to slightly freeze the surface. 3. We do not think that slight freezing of the cream in the cans injures the flavor of the butter, but we would advise not allowing it to freeze after being gathered from the milk.]

ROUND SILO CONSTRUCTION—WHITE TURKEYS WANTED.

A SUBSCRIBER, Ontario Co., Ont.:—"I am thinking of building a round silo, and in doing so I will have to build a stone basement (nine feet in depth) in order to get on a level with my feed room. Will the ensilage keep as well as though there were no basement, providing it is well plastered inside? 2. Can you inform me where I can get white Holland turkeys?"

[We presume the intention is to build a stave silo on a stone foundation. If the stonework is well plastered inside with cement, we see no reason why the ensilage should not keep all right. We would decidedly prefer a concrete foundation, as being drier and less liable to give way, though we have not yet heard of a round cement concrete silo being built. It will be very necessary to get the inside of the wooden structure perfectly even with the inside of the foundation walls, so that settling would be uniform and perfect. Why not build the whole silo of concrete? 2. Poultry raisers having white Holland turkeys for sale should make that fact known through the FARMER'S ADVOCATE.]

a temperature considerably lower than the ordinary form of the West European mulberry. It sometimes kills back a little at the tips. It is always late in starting its leaves in spring, and is one of the first trees injured by autumn frosts, but during its season of growth it is well clothed by an abundance of handsome green foliage. One of the peculiarities of this tree is that it is difficult to find two leaves on the same tree exactly alike—all gradations from the entire leaf to the most beautiful cut-leaf forms may be found. The fruit of the Russian mulberry varies a great deal. I have seen trees which bore fruit of very fair quality. As a rule the fruit is worthless. It usually produces very abundantly. Wherever a tree is found producing fruit of good quality, it should be propagated by budding or grafting. JOHN CRAIG, Central Experimental Farm, Horticulturist.]

PRUNING RASPBERRIES. S. R., Palmyra, Ont.:—"Should raspberry canes be cut back in the autumn, or should this work be done in spring early?"

[The question of whether it is desirable to cut back raspberries in the autumn in addition to removing the old wood is one that can only be answered by the individual grower himself, and is dependent upon the climatic conditions which obtain in the locality wherein he resides. If the canes are likely to be injured by winter, then I would unhesitatingly advise postponing pruning till spring, when all the injured wood might be removed with the other necessary pruning. In sections where the canes do not suffer from winter killing I think it is a saving of time and a non-injurious practice to do this pruning late in the fall, when the wood has thoroughly ripened after growth has ceased. J. C.]

SALTING COWS. A YOUNG SUBSCRIBER, Wellington Co., Ont.:—"Would some one please tell me through your valuable paper the best method of salting cows, and how much to a milk cow? Should dry cows and fattening cattle get the same? I give ours about one-half tablespoonful every day in their feed."

[We do not think that cows, if they had access to salt at will, would take more than you are giving—probably not as much, but it is the practice of many good feeders to sprinkle a little salt on the feed every day. Milking cows should have more than fattening cattle, as it induces them to drink more water, which tends to increase the flow of milk; but the quantity of salt given should be less in cold weather, and cows should not be allowed to remain outdoors many minutes after drinking, as there is danger of their getting chilled, which will check the milk flow. Placing a lump of rock salt in the manger is recommended by many feeders, especially for fattening cattle, dry cows, and young stock.]

BOOK ON BEE-KEEPING. HIRAM CASSELMAN, Starmont Co., Ont.:—"What is the best work on bee-keeping?" [For the average bee-keeper or beginner probably Langstroth on "The Hive and Honey Bee," published by Chas. Dadant & Son. For sale by G. W. York & Co., 118 Michigan St., Chicago, Ill.]

MARKETS.

Toronto Markets.

Owing to the removal of quarantine against cattle going to the United States there was a better trade done to-day. In preparation for the event there are 25 carloads of butchers' cattle and stockers ready to be sent across the line.

Receipts of stock at this market last week, 2,988 cattle, 726 sheep, 2,339 hogs. The market is certainly in better shape than for a considerable time, prices advancing all round.

Export Cattle.—Trade quiet. There were not many on offer. Quality very poor. Prices ranged from 3c. to 3 1/2c. rising to 4c. for anything choice. Quite a number of the Buffalo buyers were on the market, and indications point to an increased demand in the near future.

Butchers' Cattle.—Prices did not advance materially, ruling 3 1/2c. per cwt. to 3c. One pair of heifers and steers, averaging 1,000 lbs., sold for \$3. Top price was 3 1/2c. for choice. While secondary and common cattle were very little changed, prices were firmer all round; the market well cleared by noon. We have had very brisk markets for the last two weeks; outside buyers were present from Buffalo, Montreal, Hamilton, St. Catherine's and many other places.

Bulls.—Prices were easier owing to poor quality. Best price 3 1/2c. per lb. for choice shipping bulls; 3c. may be quoted as ruling price. Supply about equal to demand.

Stockers and Feeders.—Feeders for Buffalo sold at \$2.30 to \$2.75 per cwt. Light stockers \$2.50 to \$2.65, some choice quality fetched \$3. Demand active and likely to continue; 12 carloads left here on Saturday and are reported as being transhipped west to Wilmington, Ohio. American buyers say they are able to take any quantity of cattle for fattening purposes.

Sheep and Lambs.—Export sheep quiet, 3c. per lb. Lambs at 4 1/2c. per lb. Sheep \$3 to \$3.50 per head. Bucks 2c., hard to sell, not wanted. The supply of sheep and lambs, though small, was sufficient.

Cattle.—Offerings light; prices advanced, \$4 to \$8 each. Choice veals wanted at once; prospects are good for very active demand and \$7 to \$8 can be depended upon.

Milk Cows were in fair demand, all sold early; quotations \$25 to \$45; good milkers will sell readily. Stocks wanted.

Hogs.—The offerings were light; market firm on good demand and an advance was ordered, 4c. up to 4 1/2c. per lb. for choice bacon hogs weighed off cars. Singers were firm at \$4.50 per 100 lb. Thick fat, \$3.50 to \$3.60 per cwt.; in good demand at these prices. Sows quiet at 3c. per lb.; stags at 2c. per lb. Receipts are 2,000 head more than the same month last year, and demand good; prospects of a further increase.

Butter.—Receipts free; quality coming not good; creamery keeps in fair demand in tubs at 18c. to 19c. Dairy rolls, strictly choice, 12c. to 13c. per lb.

Cheese.—Demand active; prices firm; summer make here quoted at 10c. to 10 1/2c. per lb., late makes at 11c. to 11 1/2c. per lb.; no stocks on hand.

Eggs.—Tone steady; trade fair; strictly new laid 16c. to 18c. per doz.; held fresh, 14c. to 16c. per doz.

Grain Market.—Very small delivery on the street market; roads poor. One load of wheat at 82c., white. No. 1 Manitoba hard reported 92c. at Toronto; 100 bush. of goose wheat sold at 64c. to 64 1/2c.

Oats.—One load of oats at 23 1/2c. per bush. Peas.—11c. to 12 1/2c. per bush. Barley.—150 bush. of barley sold at 29 1/2c. Hay.—Only four loads of hay daily, sold slowly at \$12 to \$13.50 per ton. Straw.—About two loads of straw per day, sold at \$7 to \$8 per ton. Dressed Hogs.—Packers are not anxious buyers; deliveries not large; car lots quoted at \$5.; on the street in farmers' loads, \$1.50 to \$2.50, according to quality for choice. Hides.—Market about firm and steady. Calfskins are unchanged, but sheepskins are 5c. higher. Hides—No. 1 green, 6 1/2c.; steers, 7c. per lb. Skins—Calfskins, No. 1 green, 6c. to 7c. per lb.; sheepskins, 90c. to \$1 each, the latter price for choice. Wools are dull; fleeces comings, 31c. to 32c.; tub-washed fleeces, 20c. to 21 1/2c. per lb.; extras, 23c. Toronto, February 11th.

Montreal Markets.

Cattle.—The heavy offerings during the past two weeks, mostly of poor, trashy stock, have forced prices lower for this quality. Good stock, on the contrary, has been a trifle better in price, but the heavy supplies of dead meat on the market have prevented anything like real good prices being paid. On today's market (Feb. 8th) some improvement was noted in the quality of stock offered, which may be partly accounted for in the amount of stock taken on to Montreal. If the quarantine's absence tends in this way to relieve our markets of poor quality beef it will indeed be a boon. Some fairish stock sold last week as low as 1c. per lb., fair cattle making from 2c. to 2 1/2c. per lb., good to choice 3c. to 3 1/2c. Only a nominal demand for export stock.

Sheep and Lambs.—The active demand noted in our last report has been steadily maintained, and it would not be surprising to see prices a shade stiffer in the very near future. There does not seem to be an overabundance of good lambs to come forward. Sheep and lambs, mixed, for tops, make 3 1/2c. per lb. to a shade over; lambs, 4c. to 4 1/2c. per lb.

Cattle.—Good sized calves, 100 lbs. and upwards, make about \$10 each; under this weight all the way down to \$2 each. Not very plentiful.

Hides and Skins.—There has been no change of moment in this market, but it would be surprising if in the immediate future values did not make a move upward in harmony with the Chicago markets, which are firm. Butchers are being paid 7c., 6c., 5c. per lb. for greensalted hides, heavy and light, for Nos. 1, 2, and 3; calf skins, No. 1, 7c. per lb.; No. 2, 5c. per lb.; lamb skins 90c. each.

DRESSED MEATS.

Hogs.—The market is glutted with heavy hogs, and a decline of about 10c. per cwt. has taken place within the week, a drop of 25c. per cwt. since last writing. Car lots selling down to \$1.40 to \$1.50 for thick fats freshly killed. The nice light bright bacon hog is, however, in good demand, and firmer prices have been obtained this week for this class, car lots making \$5.40 to \$5.50 per cwt., and as much as 6c. per lb. being obtained in small lots for something fancy.

Beef.—There is also a superabundant supply of beef, and shippers have in some instances been compelled to pay storage. The quality is good, but prices are low; fronts (quarters), 2c. to 3c. per lb., hinds, 3c. to 5c. per lb.

Lambs.—The fall-out of the estimated offerings are in sight and only reach about 2,000 carcasses, as against 6,000 to 8,000 for the same period last year, and these are in the hands of about three people. In car lots nothing higher has yet been paid than the 6c. previously quoted; 7c. for small lots to 7 1/2c. for single carcasses.

Chatty Stock Letter from Chicago.

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

Table with columns: CATTLE, Range of Prices, Present, Top prices, 1896, 1895. Rows include 1500 lbs. up, 1200 to 1500, 1050 to 1200, 900 to 1050, Stillers, Stks. and F., Fat cows and heifers, Canning cows, Bulls, Calves, Texas steers, Texas C. & H., Hogs, Mixed, Heavy, Light, Pigs, SHEEP, Natives, Western, Lambs.

Chicago received 189,199 only last month, being the smallest January receipts of cattle since 1887.

Combined receipts at Chicago, Kansas City, Omaha and St. Louis for January, 1897, with comparisons:

Table with columns: City, Cattle, Hogs, Sheep. Rows include Chicago, Kansas City, Omaha, St. Louis for January, 1897, and historical data for 1896, 1895, 1894, 1893, 1892.

On the theory that the next Secretary of Agriculture will be unfavorable to the Mexican cattle trade there are now quite a number of buyers and speculators in that class of cattle in Mexico making extensive purchases, and it is expected that 100,000 head of cattle will cross the boundary line before the fourth of March, but, as some one says, that number would only make two weeks' average at Chicago.

Did you ever see so large a proportion of common cattle at this season of the year? This is the question old-time cattlemen are asking one another.

A cattle feeder says: "It has been one of the hardest winters to keep cattle on feed I ever saw. In Nebraska we have had hard work keeping the cattle on feed owing to the rapidly alternating warm and cold weather, with rain, wind, sleet and extreme cold all within a week."

"I don't think this cattle are coming on account of money matters," said a cattle salesman, "but simply because they are asking a little money. Farmers went to the extreme of holding too long last year, and are going to the other extreme this year."

The Standard Cattle Company had in 84 fether Western heifers averaging 1,202 lbs., which sold at \$4.

C. W. McMillan, of McMillan Bros., cattle exporters, of Westbourne, Manitoba, was among the visitors. He was looking up the Chicago and Boston export cattle business.

Morris was the largest exporter of cattle from Boston last year. He shipped 56,764 head, Swift 46,492, and Hatha way 30,081. The Hammond Company shipped 204,312 quarters of beef, and Swift 267,678 quarters.

A. Edelmuth, vice-president of the United Dressed Beef Co., died at New York. He was an old-time New York butcher. Last month's receipts of sheep were the smallest January

receipts since 1893, being 272,960 head. Exporters are bringing 130-lb. Western fed sheep here at about \$3.75. It is reported that there are 300,000 sheep now on feed along the Union Pacific Railroad, and over 500,000 in the State of Nebraska. There is a disposition to push sheep forward as fast as they are ready, for feeders, as a rule, are not very bullish on the situation. At Ft. Collins, 300,000 lambs are feeding.

An Iowa man says corn is abundant, but of poor quality, there being a great deal of soft grain. The late rains kept it soft and growing too long. However, while it is not first class stock feed, there is plenty of it, and it makes fine fuel. A majority of the farmers in that State are using it for cooking and heating purposes.

Comparative prices for meats, tallow, etc., now and a year ago, show as follows:

Table with columns: 1897, 1896. Rows include Clear Pork, Mess Pork, Family Pork, Prime Contract, Lard, Green Meats, Hams, Shoulders, Picnic Hams, Bellies, Pickled Meats, Dry Salted Meats, Smoked Meats, Beef Products, Tallow and Grease.

At a combination horse sale at the Union Stock Yards here, the nine-year-old Crown stallion, Steel Prince, 2074, was knocked down to Adam Macchattie, Glasgow, Scotland, for \$1,000. Wilksward, 2184, one of the best sires of Onward, out of the great brood mare, Lulu Harold, by Harold, was knocked down to a foreign buyer on a bid of \$1,500, for exportation to Belgium. Attractions fit for the show-ring were the handsome, fast-stepping youngsters negotiated by the Cator Stock Farm, Joliet, Ill., the leading star of the lot being Irma Cosack, which brought \$780. In attendance and general average of prices the sale developed marked improvement over last year's results. Many of the consignments were yearlings and two-year-olds that sold around \$40 to \$250. Speed was in good demand, and the road and track horses were negotiated at \$150 to \$1,500. The highest price scored, \$400, in the closing out sale of jacks and jennets, property of Holt & Graham, Frankfort, Ky., at Union Stock Yards, was for the Duke of Glenwater.

A dealer says there are 10,000 horses on feed in the East, and until this surplus is worked off trade will remain dull. The 763,904 hogs received here last month averaged 24 lbs., against 254 lbs. in December, 1896; 223 lbs. for January, 1896, and 251 lbs. for January, 1894.

The hog dealers are still very much puzzled over the prospects for hog supplies. They cannot understand why hogs do not show up more numerously and of better quality, when there is so much corn being consumed in the cook stoves.

Buffalo Markets.

Cattle.—Receipts, 90 cars natives, 40 cars Canada. The market on good cattle of all descriptions was strong and higher, one load of choice Ohio Polled Angus cattle selling at \$5.50. There were a few loads of good exporters and shippers' stock that sold full strong 10c. higher than last Monday. Good light butcher steers also sold strong, but the commonish kinds sold, if anything, a little easier. Good cows and good heifers steady; common kinds slow and drabby.

Stockers and Feeders.—The Canadian kinds, if good quality, strong; the common kinds, however, did not sell any better than last week, and were at a rule drabby. Michigan stockers and feeders, however, sold, if anything, a little easier, as Canadian are preferred. Bulls, both export, butcher, and sausage, about steady. Stock bulls, however, in light demand and hard to sell at easier prices. Milch cows and springers in fairly liberal supply. There was a pretty good demand for them, and values on the good fresh cows steady to strong. The light yearlings and the common kinds of fresh cows did not sell as well as last week. Choice to fancy fresh cows seem to be wanted at good strong prices at present. Veal calves steady to strong; tops about \$7.25, with the good to choice kinds selling from \$6.50 to \$7. The market on this commodity was pretty well supplied at the close, with prospects only fair.

Hogs.—Receipts, 90 cars; market steady to strong. Extreme heavy hogs sold about 10c. higher, though the York weights and pigs did not show any improvement over last Saturday's prices. In the West, however, the feeling was firm, with values a shade higher, and the general condition of the trade looks strong. We may not get any material advance, but there is every indication that we will not get any lower prices. Extreme heavy hogs, \$3.00; medium weights and mixed, \$3.65; Yorkers, \$3.70; pigs, \$3.50 to \$3.70.

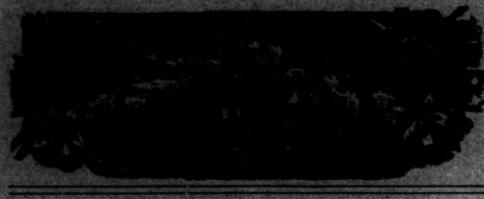
Sheep and Lambs.—Our sales of lambs to-day at \$5.40 were the extreme top. Receipts, 90 cars. Market on lambs for about an hour early in the morning was strong, with best grades selling \$5.30 to \$5.40. It did not last long, however, and good lambs soon settled down on the basis of \$5.25, with the market generally easy at that. The order trade was soon supplied and the market closed full easy, with some late arrivals, which were wet owing to the snow and rain, unsold at the close. The heavy lambs continue to be in best demand and bring the outside prices. Your special attention is called to this fact. Prime grades, 80 lbs. and upwards, selling from \$5.25 to \$5.40, with only a few at the latter price; fair to good kinds, 70 to 80 lbs. average, from \$5 to \$5.15; and the culls and common from \$3.75 to \$4.25.

Sheep sold generally strong and were wanted; the offerings to-day were mostly lambs. There was considerable inquiry for export grades, which, by the way, were in light supply also. Choice grades sold from \$4.25 to \$4.50; butcher sheep, choice to prime, from \$3.80 to \$4, with the fair to good kinds from \$3.25 to \$3.50, and the culls and common from \$2.25 to \$3.

Monday, Feb. 8th.

Montreal Horse Market.

There has been a decided improvement in this market during the past two weeks, and anything good or suitable for export is early picked up. Good prices have been paid for the right sort, as high as \$145 being paid for an extra draft. The range is from \$80 to \$110, and even \$120 each for good chunks and drafts.



THE HOUSE ON THE MARSH.

A Romance.

BY FLORENCE WARDEN.

(Continued from page 84.)

"I haven't met with many yet. I have been fortunate," said I, smiling.

"You have no father, and have always lived quietly with your mother? Of course you write to her often?"

"Oh, yes, very often. So that you can have the benefit of her counsel in any difficulty?"

"In any difficulty I should have to think and act for myself, Mrs. Manners, because writing to mamma about it would only make her cry. But I have met with no great difficulties in my life so far."

"She looked at me again, as if a little puzzled, and then said:

"I hope you will not think I am catechizing you rudely; but Mr. Manners and I take great interest in you, knowing how young and inexperienced you are. I want you to feel sure, my dear Miss Christie, that if you should want a friend's advice at any time, you need not fear to confide in me; and Mr. Manners, being a man and your parish clergyman, could help you in cases where my woman's judgment might be at fault."

I thanked her with tears in my eyes; for, although I did not think it likely that I should ever experience at the Alders any trial that she could help me in, yet her manner was so sincere and so earnest that I was touched by it and grateful for it.

Then we went down-stairs and finished up the evening with music.

While I was playing, Mr. Laurence Reade came in to take his sisters home. When I had finished, everybody looked at us as he shook hands with me in a rather distant manner; but he managed to press my hand before he let it go; so I did not mind. And everybody listened as he said:

"We heard up at the Hall dreadful reports that you were ill, Miss Christie, and wouldn't be able to come to the school-visit."

"Oh, no, I wasn't ill! One of the servants gave me a fright in the night," said I. "I woke up and found her in my room amusing herself by ransacking my things. Then I screamed with all my might, and Mr. Rayner came up and called her out and scolded her."

This explanation was listened to with profound attention by everybody in the room; and I was glad I had an opportunity of giving it, as I felt sure that some rumors must have got about; and it was better they should hear my version of the story. Then Mrs. Manners said she hoped Mr. Reade would not desert them at the last; and he promised to come and help, but said she must not expect him to sell pen-wipers.

"You will have to work, not to play, if you come, Mr. Reade, and set a good example to the others."

"I will; but I sincerely hope they will not follow it," said he, in a laughing tone; then he turned and looked at me and made me blush.

And in the slight bustle of departure he whispered to me—

"Wait, and I will come back and take you home."

But, when I had put on my hat and mantle, and Mrs. Manners had led me down into the drawing-room again, to say a few last words to me, and I was wondering how I could wait until Mr. Reade kept his promise and returned, I heard a ring and Mr. Rayner's voice in the hall. I started and blushed, and Mrs. Manners stopped in her talk and looked at me very searchingly.

"Mr. Rayner must have come to fetch you home," she said.

"I am afraid so," I stammered.

She looked colder still at my confusion; but there was only one way out of it, so I burst out—

"Oh, Mrs. Manners, Mr. Reade said he would come to fetch me! What shall I do?"

"You would rather go with him?"

"Oh, yes, yes!"

Her manner changed all at once. She put her arm around me, and drew me to the French window.

"There, my dear—run out there and wait at the gate on the left. That's the way they always come from the Hall. It is a little deception, I am afraid; but there—go, child, go! He is a good lad."

So I ran swiftly across the lawn in the dusk, afraid of Mr. Rayner's seeing me. I heard the gate swing to; but I could not stop myself. And, as Mr. Reade dashed round the corner, running too, I fell against him, and then panted out, "I beg your pardon," very much confused. He had caught me by the arms, and he did not let me go, but held them very gently, while he said—

"Miss Christie! Pray don't apologize. Where were you running?"

"I—I was going home," I stammered, in a low voice.

"But that is not the way." A pause—then very softly—

"Were you coming to meet me?"

"No," said I, half crying, and disengaging myself.

It was humiliating to have been caught running to meet Mr. Reade.

"Why did you hope you were. For I've been running like a race-horse to meet you."

I said nothing.

"Why did you want to run home so fast alone, when I had promised to come and fetch you?"

"I—I didn't want to trouble you."

"That was very kind of you. But, if I happen not to mind the trouble, may I see you home now I am here? Or would you prefer to go alone?"

"I would rather go alone, thank you," said I, though it was heart-breaking to have to say it. But I thought it was time to show some spirit, for I saw that Mr. Reade did not believe me.

He stepped aside to let me pass, and raised his hat very stiffly; then his manner changed all at once.

"Why, you are crying! My darling, I didn't mean to make you cry."

I could not stop him—I did try—but he was so much bigger than I that he had his arms around me before I could get away.

"Oh, Mr. Reade, let me go!" I said, frightened.

But, as I held up my face to say it, he kissed me, and, after that, of course it did not matter, for I knew that he loved me and that I was safe with him.

I remember every word that he said to me as we walked toward the Alders that night; but, if I were to write down, it would read just like the same thing over and over again, and not at all as it sounded to me.

CHAPTER XV.

Laurence had promised to come for me early the next morning, saying that I should be wanted to help to arrange the stalls.

After breakfast, I went into the schoolroom with Haidee; but I was not in my usual soberly instructive mood; and, when I went in to dinner, and Mr. Rayner said brightly, "Mrs. Manners wanted you to go and help her to prepare for the

afternoon's festivities, Miss Christie; but we were not going to let you fag yourself out, so I said you should come later," I felt for the moment as if I quite disliked him.

After dinner, he himself accompanied Haidee and me to the High Field, where the bazaar and tea took place; Mrs. Rayner was not coming until later. The school-children had been there some time when we reached the field; and some of the rank and fashion of the neighborhood, the quiet people who came as a duty, were making purchases in the marquee. I saw Laurence standing outside the larger but less showy one of the two. He shook hands with a loving pressure, but he only said—

"How do you do, Miss Christie? They expected you earlier."

Just then there was a stir and excitement outside, caused by the arrival of Lady Mills and some of her party. They came into our marquee, and Lady Mills, who I thought had sweeter manners than any lady I had ever seen, thrust a big basket of flowers into my hands and told me to walk up and down and ask people to buy them. And Laurence walked up and down with me; and I sold my flowers quickly, and was very happy indeed, for Laurence talked and whispered to me, and never once left my side. When I had sold all the flowers, he whispered—

"Now let us slip out, and we can talk."

So we tucked my basket under one of the stalls, and went out of the tent and away into a lane near the field; and Laurence's face grew very anxious and unhappy as I asked him what was the matter.

"I don't want to go away, Violet," said he, looking at me very intently.

"Go away! Why—why?" said I, the tears rushing to my eyes.

"My mother has been persuaded that she must go away to the Riviera to escape the wet season, and I shall have to go with her."

"But you will soon come back, won't you?"

"I don't know. I don't know what the plots and plans may be of the person who has caused me to desert away."

"What do you mean?"

Laurence looked at me in the same intent way as before, then he said—

"Listen, Violet. You are such an innocent little thing that I don't know how to tell you what I mean. Last night, when I had left you and got home, I found Mr. Rayner just leaving the Hall. I went straight into the study to speak to my father. You know there is more sympathy between him and me than there is between any of the rest of us, so I told him all about you, and I asked him to find me some occupation at once, for I must have a home to take you to before the year was out. And the dear old dad said you had a good sweet face, and he should like to have such a daughter; but what would the matter say? And I told him I was twenty-four, and old enough to know my own mind, and I didn't care what she wanted. But he begged me not to offend her, and then said, 'She has just been in to tell me she has set her heart on going to the Riviera, and insists on your going with her. Now supposing I took a farm for you while you are away, you can step into it directly you come back, and try your hand at farming for a year or two. So don't say a word to her or to your sisters—you know they're always side with her—till you come back.' I could not say 'No' to my father—he has been so good to me—and I couldn't refuse to go with my mother; nevertheless I was half mad all the same, for I know who has persuaded her to this."

"Do you? Who?"

"Mr. Rayner. When he has been so kind to me, too! What should he persuade her to go away for?"

Laurence looked at me earnestly.

"To get me away?"

"To get you away! Why should he do that?"

"He is a bad man—"

"Laurence," cried I, "how dare you say such a thing!"

I turned sharply from him, and was back in the field among the people before he could stop me. Lady Mills and Mr. and Mrs. Rayner came up to me. This lady, who had charmed me so much, had in return taken a fancy to me, and had begged Mr. and Mrs. Rayner to let me go home with her to stay until Monday; and they had consented. At another time this invitation would have made me half mad with delight, but now it seemed only to overwhelm me with terror at the thought of going among so many strangers. However, they sent me home to prepare what things I wanted, and told me to make haste.

CHAPTER XVI.

There were four ladies already in the carriage which was waiting for me at the gate—Lady Mills herself, with another more matronly-looking lady by her side, whose name, I already knew, was Mrs. Cunningham; and on the opposite seat were a younger lady with a rather sharp expression, named Mrs. Clowes, who was considered very clever, and an unmarried one some years older than I, whose name I had heard of that seat; but there was plenty of room for us all.

It was about seven miles from Goldham to Denham Court; a pretty place built on the side of a slight hill, with the river Doveney running not far from the foot of it. I was shown up into a room that looked out upon greenhouses and cucumber-frames, and from which I had a view of the river. I shook out my muslin frock and put it on, and when I fastened the black velvet round my throat, with the beautiful flashing pendant on it, I looked so much nicer than I had thought it possible for me to look that I could not help feeling that life was not quite a blank, and wishing that Laurence could see me.

I had left my room, and was going along the corridor, when I met a man the sight of whom made me start and turn quite cold. For he looked so much like the mysterious visitor at the Alders whom Mr. Rayner had described as "a gentleman," whom I had seen two nights before going into the stable with Tom Parkes and Sarah, that I thought it must be he. But this man stood aside for me with the stolidly respectful manner, not of a gentleman, but of a servant; and I hurried past him, feeling quite shocked by the strength of the resemblance; for of course a friend of Mr. Rayner's, however familiarly he might choose to speak to Tom Parkes and Sarah, would not be a man-servant at Denham Court.

After dinner, when I was in the drawing-room with the ladies, some of them drew me on to a sofa, and asked me a number of questions about my life at the Alders and "that handsome Mr. Rayner."

"And is it true that he is such a dreadfully wicked man, Miss Christie?" said one.

"No, he is not wicked. The village-people think he is, because he plays the violin and goes to races. He is very kind."

"Oh, we don't doubt that, my dear!" said Mrs. Clowes, in a demure tone.

"You think I like him only just because he is kind to me," said I boldly. "But I wouldn't like him if he were wicked, however good he might be."

"And Mrs. Rayner—is she kind and good too?"

"Oh, yes, she is just as kind!" said I.

This was not quite true; but I knew already enough of these people to be sure they would laugh if I said "No;" and it was not poor Mrs. Rayner's fault that she was not as nice as her husband. Presently Mrs. Cunningham took me to the other end of the room to look at a portrait of Lady Mills.

"It is no business of mine who gave you that pendant, my dear; but have you any more ornaments of the kind, and, if so, where do you keep them?" she said gravely.

"Oh, I have no more!" I answered, a little surprised at her manner. "And I keep this in an old case in the corner of my desk."

"Why, my dear child, I have a set that I value very much—no finer than yours, though—diamonds and cat's-eyes—and I sleep with them under my pillow, and even my maid doesn't know where they are."

I showed my astonishment.

"Believe me, when you travel about on a series of visits,

as I am doing now, and are obliged to intrust your dressing-case to a careless maid, it is no unnecessary precaution."

"But I shouldn't take so much trouble with my past pendant," said I.

"She shook her head at me, with a laugh, and said dryly—

"I should wish such paste as yours."

When, at last, long past the hour when the household at the Alders retired to rest, we dispersed to our rooms, before I went to bed I put, as I thought, my beautiful pendant safely inside my desk, resolved not to wear it again.

CHAPTER XVII.

I got up next morning directly I was called, and was down-stairs long before any of the other people had come down to breakfast.

The bells of Denham Church, which was close by, had begun to ring before breakfast was over, and Lady Mills wanted to know who was going.

"I'm going, for one," said Mrs. Clowes, and she looked across at Mr. Carruthers, who was helping himself to a great deal of marmalade.

"Do try to make up a respectable number," said Lady Mills.

"You can do just what you like, you know, as soon as it is over; and people in the country think so much of it. We scandalize the neighborhood quite enough, as it is, by not going to bed at ten o'clock, and other wicked practices. And last week we were only three at church out of a party of seven."

At luncheon Mrs. Clowes described the sermon in a way that made everybody laugh, and said a lot of amusing and sometimes unkind things, as she always did.

Most of the people spent Sunday afternoon under the trees on the lawn. I heard the man-servant give an order to Tom Parkes, calling him, "Here, you gardener, what's your name?" as if he had never seen him before. I pointed out the other man to Mr. Carruthers, and asked if he knew whose servant he was.

"He is mine, and the best I ever had. I've had him six months now, and of late I've given up thinking altogether; he does it for me so much better."

I began to wonder whether this mysterious man-servant was some poor relation of Mr. Rayner's, who had taken to this way of earning his living; but was ashamed of it, and who came privately to see his richer connections, to spare them the talk of the neighbors about what people like the Reader, for instance, would certainly consider a great disgrace. So I got up and ran away with Mr. Cole to the fruit-garden, where he gathered plums for me; and we looked at the chickens, and watched the fish in the pond until dinner-time.

Mr. Cole had cut me some beautiful flowers to wear in the front of my frock, for I had resolved not to wear my pendant again; but my muslin gown did not look nearly so well without it, and I thought I would just take it out and see the effect of it at my throat close to the flowers, and then put it away again. But when I unlocked my desk and opened the shabby case in which Mr. Rayner had given it to me, the pendant was gone.

It had been stolen—by whom I could not guess. At first I thought I would go to Lady Mills and tell her privately all about it; but my courage failed me; for if my loss got known there would be an unpleasant scene for all the servants and a sense of discomfort in the entire household. So I resolved to say nothing about it, but to bear my loss, which I felt more than I should have thought possible, in silence.

I went down-stairs to dinner with a piece of plain black velvet round my throat, told Mrs. Cunningham, who asked why I did not wear my pendant, that I had come to the conclusion that it was too handsome an ornament for a girl in my position, and heard Mr. Carruthers say that the same remark would apply to my eyes.

Sir Jonas, who was going up to town the next morning, was to drive me to the Alders, and then go on to Beaconsburg station. Every one bade me a very kind good-bye; and, just as I was sitting in the phaeton, waiting for Sir Jonas to take his place beside me, Gordon, Mr. Carruthers' mysterious servant, came up to me in his stolidly respectful manner and said—

"I think this is something of yours, ma'am. You must have dropped it, for I found it on the stairs, and I am afraid it has been slightly injured." And he put my pendant into my hands.

I was so much astonished that he was gone before I could even thank him; and then, turning it over in my hands, I found that the little shield on which the initials were engraved had been wrenched off.

Was Gordon himself the thief, and had he repented? Or had the person who took it been ashamed to restore it in person? Or had I really dropped it, and only dreamt that I put it away?

CHAPTER XVIII.

When Sir Jonas left me at the gate of the Alders that morning, a sense of desolation crept over me as I walked down the drive.

All the questions which had puzzled me about this household came into my mind again with new force after my short absence, together with others which had arisen while I listened to the talk of my new friends. Was Mrs. Rayner really mad? If so, how was it that no suspicion of the fact had reached that gossip-loving company I had just left? Why had the ladies called kind Mr. Rayner, who always went to church and led the simplest of lives, "dreadfully wicked"? And why, if they thought him "dreadfully wicked," did they all say they would give the world to know him? What was the relation between Mr. Rayner and Gordon, Mr. Carruthers' servant?

I went up-stairs, having asked, in as careless a manner as I could, if there were any letters for me, and having been told that there were not. Laurence might have sent me just a little note; I had been so longing for one.

In the afternoon I was allowed to go into Haidee's room. It was a cold day; and the room itself and the long corridor which led to it struck me as feeling damp and chilly. It was the first time I had been in the left wing. Haidee's chamber was a little dressing-room without a fireplace, and I wondered why they did not move the child, who was really ill, into another room. She jumped up in bed and clasped her hot little hands round my neck and begged me so hard to have tea with her that I was obliged to consent, the more willingly that Mrs. Rayner, who had never come once in to see her child while I was in the room, had seemed, by the way she greeted me on my return, to have exchanged her attitude of apathy toward me for one of dislike. While we were alone together over our tea, Haidee said, very softly—

"Last night that hateful Sarah made mamma cry. I heard her through the door. Mamma's frightened of Sarah—and so am I."

I comforted her, told her Sarah would not hurt her or "mamma" either—though I felt by no means so sure of her good-will as I pretended to be—and stayed with her until she went to sleep.

Then I wrapped myself up in a shawl and went into the plantation to look at my "nest." And there, leaning with his back against the tree which formed my seat, was Laurence. I gave a cry of delight and ran forward; but he only raised his hat and said—

"Good-evening, Miss Christie."

I stopped short, overwhelmed with dismay. Then I said, in quite a low, husky voice, for I could scarcely get the words out—

"Laurence, why do you speak like that? Aren't you glad to see me?"

"Why should I be glad to see you, Miss Christie? I can't hope to show to advantage in your eyes after the more amusing society you have just left."

"What do you mean? What society do I like better than yours?"

[TO BE CONTINUED.]

THE QUIET HOUR.

Without Carefulness.

Master! how shall I bless Thy name
 For Thy tender love to me.
 For the sweet enablings of Thy grace,
 So sovereign, yet so free,
 That have taught me to obey Thy Word,
 And cast my care on Thee!
 Oh, I have trod a weary path,
 With burdens not a few,
 With shadowy faith that Thou would'st lead
 And help me safely through,
 Trying to follow and obey,
 And bear my burdens too.
 Master! dear Master, Thou did'st speak,
 And yet I did not hear,
 Or long ago I might have ceased
 From every care and fear,
 And gone rejoicing on my way
 From brightening year to year.
 Just now and then some steeper slope
 Would seem so hard to climb.
 That I must cast my load on Thee;
 And I left it for a time,
 And wondered at the joy at heart,
 Like sweetest Christmas chime.
 A step or two on winged feet,
 And then I turned to share
 The burden Thou had'st taken up
 Of ever-pressing care;
 So that I would not leave with Thee,
 Of course I had to bear.
 At last Thy precious precepts fall
 On opened heart and ear,
 A varied and repeated strain
 I could not choose but hear,
 Ealinking promise and command,
 Like harp and clarion clear:
 "No anxious thought upon Thy brow
 The watching world should see;
 No carefulness! Oh child of God,
 For nothing careful be!
 But cast thou all thy care on Him
 Who always cares for thee."
 It was Thy Word, it was Thy will—
 That was enough for me!
 Henceforth no care shall dim my trust,
 For all is cast on Thee;
 Henceforth my inmost heart shall praise
 The grace that set me free.
 And now I find Thy promise true,
 Of perfect peace and rest;
 I cannot sigh—I can but sing
 While leaning on Thy breast,
 And leaving everything to Thee,
 Whose ways are always best.
 I never thought it could be thus,
 Month after month to know
 The river of Thy peace without
 One ripple in its flow;
 Without one quiver in the trust,
 One flicker in its glow.
 How shall I praise Thee, Saviour dear,
 For this new life so sweet,
 For taking all the care I laid
 At Thy beloved feet,
 Keeping Thy hand upon my heart
 To still each anxious beat!
 Oh, if it be Thy will, dear Lord,
 Then send me forth, to be
 Thy messenger to careful hearts
 To bid them taste and see
 How good Thou art to those who cast
 All, all their care on Thee. —F. R. H.

"Cast Thy Burden upon the Lord."

One sometimes sees a petulant and self-confident little child staggering along with some heavy burden by the parent's side, but pushing away the hand that is put out to help it carry its load. And that is what too many of us do when God says to us: "Here, My child, let Me help you. I will take the heavy end of it, and do you take the light one." "Cast thy burden upon the Lord"—and do it by faith, by simple trust in Him, by making real to yourselves the fact of His divine sympathy, and His sure presence to aid and sustain.

Child of My Love, lean hard,
 And let me feel the pressure of thy care.
 I know thy burden, child; I shaped it,
 Poised it in Mine own hand, made no proportion
 Of its height to thine unaided strength;
 For even as I laid it on, I said,
 "I shall be near, and while she leans on Me
 This burden shall be Mine, not hers."
 So shall I keep My child within the circling arms
 Of Mine own love.
 Thou lovest Me! I know it. Doubt not, then,
 But loving Me, lean hard.

Trust and Tranquility.

Christian faith does not wriggle out of the responsibilities that attach to a human life, but it does bring in the thought of a mighty hand that guides and protects; and that itself brings calm and gladness. The advanced guard that had to be all eyes and ears is glad to slip into the rear, and let somebody else take the task of finding the path and looking out for the enemy. The officer that has had charge of the great ship as it plows its way through the stormy night feels a lightened burden when he comes down from the bridge, and knows there is somebody else on the lookout. You fathers have got far more anxious faces than your little children have, because they trust, and you are responsible for them. And though it is no

pillow for laziness, yet it is an anodyne for anxiety, when we remember that if our "believing" grasps God in Christ, it is His business to look after us; and we may leave ourselves in His hands.

I cannot see, with my small human sight,
 Why God should lead this way or that for me,
 I only know He saith, "Child, follow Me."
 But I can trust.

I know not why my path should be at times
 So straightly hedged, so strangely barred before:
 I only know God could keep wide the door;
 But I can trust.

I find no answer, often, when beset
 With questions fierce and subtle on my way,
 And often have but strength to faintly pray;
 But I can trust.

I often wonder, as with trembling hand
 I cast the seed along the furrowed ground,
 If ripened fruit for God will there be found;
 But I can trust.

I cannot know why suddenly the storm
 Should rage so fiercely round me in its wrath;
 But this I know, God watches still my path;
 And I can trust.

Faith.

A Christian sailor, when asked why he remained so calm in a fearful storm, replied, "I am not sure that I can swim; but if I sink I shall only drop into the hollow of my Father's hand, for He holds all these waters there."

Cling fast to the Hand that is leading you, though it be in darkness, though it be in deep waters—you know whom you have believed. Yield not for a single moment to misgivings about future storms. Infinite love joined to infinite skill shall pilot the way through every strait and temptation.

THE CHILDREN'S CORNER.

A Pneumatic Boy.

"What is that," asked Ned's father, looking up from the newspaper, "that you are saying about Tom Roderick's 'safety'?"

"Why, you see," answered Ned, edging up to his father so as to get into short-distance communication with him, "it has a pneumatic—"

"Didn't I get you the latest pattern of tire that was made?" his father broke in upon his explanation. "I cannot afford to throw away a bran-new wheel just because some inventor has come out with an improvement on it."

"It is not the tire, papa," broke in Ned eagerly. "My tire is all right. She is double-lined with fiber-rubber, and I ain't a bit afraid of puncturing her. But, you see, its a pneumatic seat that Tom Roderick has on his, and that's ever so much better than the old-fashioned, steel-spring, leather seat."

"A pneumatic seat!" echoed Mr. Wilson. "Well, I wonder what in the world is coming next. There is just one thing more somebody ought to invent," he mused, with a half-smile upon his lips, "and that is a pneumatic boy to ride the pneumatic tired safety with a pneumatic seat. I think in this age of the world, when everybody seems to be trying to avoid jars and shakes in every other way, that it would be a fine thing to have a boy about the house built on that plan. I'll see about the pneumatic seat for your safety after we have some evidences that there is a pneumatic boy to sit on it. I don't think it's fair that one member of the family should have all the smooth riding, and his baby brother, mother, and the rest, be continually jolted and jarred by his ill-temper and poor memory."

Ned knew it was of no use to argue the matter, and so went away doubtful as to whether his appeal had done any good; yet with a half-formed idea in his mind that his father would swap a pneumatic seat for his "safety" for a pneumatic boy, whatever that meant. The more he thought about it, the plainer it became to his mind that this was the situation of affairs. The figure of speech in which his father had likened him to a safety stuck in his fancy.

"I guess I am a little rough and crusty sometimes," he admitted to himself in an undertone. "Maybe I do make some jolts about the house. I guess papa must have heard me snapping at baby Dick this morning for scratching my school slate. I did make it pretty rough riding for the little fellow—that's a fact. And mamma says I come home from school every night as cross as a bear."

Ned sat still on the porch settee for five minutes without even whistling or whittling at a stick, and that was something unusual for him. Presently he heard steps coming through the library. He pricked up his ears in an instant, and then said to himself:

"There's mamma coming to remind me about that errand down street. I'll slip right off before she gets a chance to tell me the second time. I suppose it does worry her to have to keep jogging my memory." And with an "I'm going, mamma; I didn't forget," he scampered off as fast as his feet could carry him.

His mother thrust her head through the partly open door, and watched him disappear, in a half-surprised way, and then remarked aside to Mr. Wilson:

"That's encouraging. I didn't suppose Ned could possibly remember to do anything from being told once."

"Ah!" responded Ned's father, "maybe he's trying to relieve your mind of some of the jolting his forgetfulness gives it. I shouldn't be surprised if he'd taken the hint I gave him, and you'll have pretty easy times—for a day or two at least."

Mrs. Wilson didn't understand, and so she had

further occasion to be mystified over Ned's unusual thoughtfulness and generosity before the day was gone.

He came home bringing a stick of candy. "Here," he said, holding out the larger half to baby Dick.

This was quite an innovation on his usual procedure. Ordinarily, the baby teased and the mother coaxed, and finally commanded, and then Ned acquiesced in a division by grasping three-fourths of the stick in his hand, and requiring baby to break the short end off.

"That's a great deal nicer," approved his mother, "than letting your brother worry and cry over it."

"I guess it does ride smoother than the other way," agreed Ned within himself. "I'm going to see how still I can go upstairs, now, and hang up the clothes I left scattered around my room."

He started off, tiptoeing up the stairway as carefully as he could, muttering to himself: "I guess papa'll think this is pretty smooth riding. He always says I make as much noise as a whole livery stable, going up and down stairs. And then grandma won't have to tell me about hanging up my things either, and that'll save her some jolting. She's always jolting over something I do, and I guess her bones are old, and she has plenty of trouble with her own children."

Down in the library, Ned's papa smiled to himself as he noted the whole proceeding, even though he kept busily at work. "I think," he said, casting his eye over a catalogue of bicycle dealers' supplies, which Ned had with a good deal of forethought left at his elbow, "that the price of that pneumatic seat may prove one of the best investments I ever made."

Something in his father's scanning the catalogue encouraged Ned wonderfully, and it was not long before he mustered up courage enough to approach his father's elbow and demurely suggest, "I guess it's been a little smoother around here lately—ain't it, papa?"

"Don't know but it has," answered his father. "It seems to me that I haven't heard Dick fretting quite as much as usual, and I know your mother has been saved quite a number of steps, and your grandmother a great deal of worry, while I haven't been—"

"Jolted," prompted Ned. "That's what I call it. You see, I've been playing to myself that I am a pneumatic boy, and it was my business to keep people in this house from being jolted. That's what a pneumatic seat is for," he shrewdly concluded.

"I see," answered his father. "You've shown me how much easier riding with a pneumatic seat is, and I guess we'll have to order one to-day for your 'safety.' We're willing to be partners with you in this matter of smooth riding. That's a great deal fairer than to have all the smooth riding on one side—don't you think?"

Ben's Best Girl.

BY SUSAN TRALL PERRY.

Not a word, was missed in spelling,
 Nor was broken any rule,
 So Ben's step was with the music,
 Marching proudly out of school,
 O'er the stile he bounded quickly,
 With a hurrah and a shout!
 And the boys and girls kept asking:
 "What on earth is Ben about!"

In the shop below the corner,
 Soon Ben stopped and looked them o'er—
 "All those valentines just opened,"
 While the girls peered through the door;
 And he whispered to the shopman,
 With his heart all in a whirr,
 "I must have the best in stock, sir—
 'Tis to send to my best girl!"

Was it blue-eyed Agnes Cummings?
 Could it be that black-eyed Bess?
 Or perhaps 'twas Kitty Wilbur—
 No; the shopman could not guess.
 Soon Ben chose one, 'twas so pretty,
 Quite unlike any other;
 Then he whispered to the shopman,
 "My best girl is my mother!"

"Girls, these days, are queer and flighty,
 Very friendly, then so cool,
 Just because a fellow does,
 Always walk by plumb and rule.
 But the mothers understand us:
 Mine's the one that I tie to.
 Now I'm off. When mother gets this,
 How I wonder what she'll do!"

"You are right," the shopman answered;
 "Always stick to mother, boy."
 And Ben bounded through the doorway,
 Whistling loudly in his joy.
 Then the girls walked off together,
 Wondering much which one would get
 Valentine—"O just the sweetest!"
 But those girls are wondering yet.

Preserving Cut Flowers.

Instead of placing flowers in cold water, much better results can be had by using warm water; i. e., water of a higher temperature than that usually known as lukewarm. Another important point in getting cut flowers to keep fresh is to put the stems into the water the instant they are cut from the plant.

Dicentra spectabilis is perhaps the grandest of all kinds of Breeches-flower introduced into gardens. It is sometimes known as Bleeding Heart. It is a native of China and must make a grand show in the woods of that country in early spring. It is one of that class of hardy herbaceous plants which dislikes transplanting. Left alone, it improves in grandeur from year to year. To propagate them pinch off the early flowers from some one branch.—*Meehans' Monthly for February.*

MINNIE MAY'S DEPARTMENT.

MY DEAR NIBBES,—

We may not have much sunshine during these short winter days, but what we have I trust you are wise enough to let into your homes. It acts as a tonic, and has a very beneficial effect not only on our feelings, but also on our appearance. To shut the sunlight out of the living rooms is a mistake often made by those thoughtless people who set a higher value on their carpets and cushions than on their health.

Sunshine in our homes leads by easy transition to sunshine in our hearts, and the latter helps us to triumph over all that may be annoying or depressing.

In no part of the house is a bright, sunny appearance more needed than in the kitchen. In very many homes but little thought is given to making the kitchen an attractive apartment, and yet the busy housewife has, perhaps, to pass the whole day there, and sometimes cannot leave it even after nightfall.

As a general rule, in most country homes the kitchen is quite spacious, with ample room for a few comforts in addition to the necessities. Not long since I saw a kitchen—it was in the country—which I thought very cosy and attractive. The floor was of maple, a light and a dark board being paced alternately, and was oiled. The walls were painted a bright but delicate shade. Pretty lambrequins graced the three windows, which were so placed that at all times during the day the bright sunshine could stream into the room. In the lower part of the room stood the range, and a few feet from it a force pump, which brought pure fresh water from the river that flowed near by. Quite close to the pump was a long cupboard, reaching from the floor to the ceiling, divided into four compartments, in which there was space enough for almost everything necessary to the kitchen. There was also a side table and washstand. Behind the range was a back stairway, under which was a closet; there the wood-box (with a board across the top to hold the water pails) was kept; there were also a couple of shelves and some hooks which could be utilized in various ways. No kitchen utensils were in sight.

The upper part of the room was furnished with a large table, some chairs, an easy chair, a sofa provided with a couple of soft cushions, and a sewing machine. Some good pictures were artistically arranged on the walls, and close to the sofa hung a pretty contrivance designed for holding books or papers. A few house plants stood on the window sills, stretching out their leaves to the warm sunbeams, and a clock ticked away industriously, the whole presenting a most inviting and restful appearance. I consider everything that can give comfort or rest, or save unnecessary steps, should have a place in the kitchen.

Do not think that you must do just as your grandmother did, because times have changed very materially since her day, and you have neither her strength nor her endurance. Ward off premature gray hairs and wrinkles by learning the best methods of working and by taking judicious rest.

How can a tired, worn-out woman be a pleasant companion? How is it so many people bestow nearly all the attention on their parlors, which, perhaps, are seldom used, and give so little thought to their kitchens, on the cleanliness and ventilation of which depends the health of their families? Why should we be deprived of the pleasant touches which pictures and flowers give, or the few moments' rest on a sofa or rocking-chair which may be snatched at intervals?

It is not an impossible thing to give sufficient attention to the cooking of the dinner and occasionally get a few fresh thoughts from a favorite author, or keep in touch with the outside world by reading some good magazine. Farming is a profitable and honorable occupation, but those who think they can get along without reading some good agricultural magazine which pertains to their particular line of business will assuredly find themselves behind the times and distanced by their more wide-awake neighbors, who, by systematic reading, are aware of all the latest and best methods of doing their work, and thus are able to accomplish readily what might otherwise have proved an arduous undertaking.

MINNIE MAY.

Domestic Science.

"This new Domestic Science points towards the coming of a much better mental and spiritual state, a purer social life, and promises to be a mighty factor in elevating the masses. It is lifting work from the plane of slavish drudgery and inspiring it with mind and thought. We must all have our daily bread, and the feeding of the family with good bread—the food which nourishes and sustains these bodies—is a sacred task."—Rev. Calvin Keyser.

THE DIGESTION OF FOODS.

Before speaking of the digestibility of different foods, it will be well first to learn a little about the process of digestion; for the digestibility of foods is affected not only by the changes they undergo in cooking, but also by the manner in which they are eaten.

Digestion is the term applied to the changes effected on the food in the alimentary canal, and is partly a mechanical but principally a chemical process. The mechanical work performed by the teeth

in mastication is the first process the food undergoes, and is important, because the more finely it is divided, the more easily will the digestive fluids permeate the mass and bring about the chemical processes which change its composition so that it can be absorbed into the system.

Of the digestive fluids the first is the saliva in the mouth. This is an alkaline fluid containing a ferment (ptyalin), and acts on the starches and sugars, changing them to dextrin. It also has the function of drawing out the gastric juice, which is the second digestive fluid with which the food comes in contact. This is of an acid nature and acts on the nitrogenous foods in the stomach, changing them to peptones, and on the fats, changing them to oils; also curdles milk, changes cane sugar to grape sugar, and checks putrefaction.

The next digestive fluid—the pancreatic juice—contains three ferments: (a) pancreatic diastase, which digests starches which were not changed by the saliva; (b) trypsin, which acts on albumen; (c) steapsin, a fat-splitting ferment. The bile acts with the pancreatic juice in emulsifying fats, and stores up starch and sugar in the form of glycogen for future use as the body requires for heat or work.

Starchy foods by thorough mastication become well mixed with their digestive agent, the saliva, and so the chemical change takes place which makes them soluble. They are changed to dextrin and then to dextrose or grape sugar before being absorbed into the system. Those foods which appear to require very little mastication often cause trouble when this process is slighted. For instance, breakfast cereals are said by some persons to be "difficult of digestion," and to "cause acidity of the stomach," when perhaps the fault lies in improper methods of cooking and eating. Physicians urge that porridge should be well cooked, and eaten with a hard roll or crust of bread, which compels the teeth to do their work. Fruit also forms a suitable accompaniment to certain grains and starches. The reason that all starchy foods are denied to infants under seven months of age is because these digestive fluids are not sufficiently developed to receive them until the teeth make an appearance.

The nitrogenous foods when finely divided by the teeth are more easily dissolved in the stomach and a larger proportion can then be assimilated. One part of pure food material should be accompanied by about four parts of waste material. For invalids it is well to use foods which tax the digestive organs as little as possible; but in the diet of strong, healthy persons predigested foods have no place, for "inactivity" is just as fatal to the digestive organs as to other parts of the body. Persons doing indoor work, with little or no opportunity for outdoor exercise, require nourishing foods, but of more easily digested sorts than those which would properly belong to the diet of a man doing hard, muscular labor, with an abundant supply of pure oxygen.

One lady despairingly complained that she "wanted her little child to have the most nourishing kinds of food, but he loathed meat and brown bread and would not even look at baked beans." She had a little knowledge of the composition of foods, which was proving a "dangerous thing" to her delicate child's welfare, but had failed to take into account the item of digestibility. She was, of course, advised to give him delicately-cooked eggs and milk, with fruit and grains in their simpler combinations.

Next we must consider the effects of cooking on the digestibility of food. "The effect of cooking is to make the food-stuffs more palatable, or more digestible, or both combined. In general the starchy foods are rendered more digestible by cooking; the albuminous and fatty foods less digestible," especially if cooked at a very high temperature. Raw starch is accountable for a great deal of dyspepsia; and half-cooked porridge, doughy cakes, and toothy puddings should not be tolerated in well-regulated homes. The object is to make starch soluble, and the little granules must absorb water, swell, and burst before they can be dissolved. For this, heat and moisture are required; and when these granules are coated with fat, as in pastry, made gravies, or fried food, it prevents the absorption of sufficient moisture or saliva to allow of being properly dissolved. All starches are rendered more soluble by long cooking at moderate temperatures or by a temperature sufficiently high to change a portion of the starch to dextrin, as in the brown crust of bread.

Of albuminous foods, the albumen of egg is typical of the class which is found in the albuminous juices of meat, or in the casein of milk and cheese. These are soluble in cold water, but coagulate at a temperature of 160° to 180°, when a jelly-like consistency is attained, but beyond this a higher temperature renders them hard, tough, and soluble with difficulty. In the matter of cooking milk and eggs alone, the temperature is easily regulated by using the double boiler; but the cooking of meat is more difficult. The albumen here is ultimately associated with gelatin and fibrin, which require considerably more cooking. The only solution of the problem is to maintain this moderate temperature for a sufficient length of time to soften the fiber and yet not "cook to death" the albumen.

Fats are readily absorbed in their natural condition, but are decomposed at very high temperatures, and their products become irritants.

The cooking of Milk.—In "Domestic Sterilization of Milk," Dr. Woodhead advises those who

buy milk for table use to insure against the dangers of disease germs, and prevent souring, by heating it over water for twenty minutes after the water begins to boil. The quantity of milk should not be more than the quantity of water by which it is surrounded in the outer vessel.

To Cook Eggs.—Eggs for "boiling" should be fresh, for their quality deteriorates as their age increases. For four eggs use about a quart of boiling water; cover the saucepan and set it on the back of the range where it cannot boil (that is, reach 212°), but will keep at a temperature of about 180° for eight to ten minutes. If you wish so-called "hard-boiled" eggs, leave at this heat for 35 to 40 minutes.

Poached Eggs.—Butter a saucepan, and use sufficient boiling salted water to completely cover the eggs. Break each one into a cup and drop gently in the water; keep at 180° until jellylike; lift carefully with a cake-turner and place on round slices of toast (cut from a loaf baked in a baking-powder can); serve hot.

Cereal with Fruit.—Mix ½ cup of wheat-germ meal with ½ cup cold water and 1½ teaspoonful salt; add to this three cups boiling water and cook in a double boiler thirty minutes. Add ½ pound dates, stoned and cut in quarters. Serve with cream and sugar for breakfast, or mould in cups and serve cold as a plain dessert. MARY E. MILLAR.

Puzzles.

1.—CHARADE.

So Charlie, you clever lad,
Could't make my rebus LAST;
I believe you did not try,
But preferred to "let it pass."

"Good words are worth much" in my mind,
You think them so too,
PRIMUS a poet's "welcome" lines,
I read them through.

TWICE almost felt like skating just
Right FINAL into the air;
Enthusiasm waned, alas,
As the expanse became less clear.

The soft white robes of purity
Have covered that delight,
SECOND I must now snowshoes prepare
Instead of the steely fight.

Say, won't you be one of our party?
The north is delightful for snow;
You spoke of coming with Clara, pray do,
Over the hills we will go.

Yes, that Xmas ADVOCATE
Was elegant COMPLETE.
First shades of primal beauty
An "attire" meet.

Welcome present cover,
So much like the old,
Now I'll cease my rhyming, as
The atmosphere grows cold. LILY DAY.

2.—RIDDLE.

I'm very small, tender and light,
All insects love in me to crawl;
I'm also useful, for without me
You would have no fruit at all.

I'm rather large, hard and heavy,
Insects shun me away;
I'm no use when in company,
For they would all run away.

I'm a powerful friend on the brightest day
To guard your health and your pleasure,
Being always ready if that is your will
When you are at your leisure.

I'm a powerful friend on the darkest night
To guard your house all around,
Being always ready if that is your will
When robbers around you abound. WM. S. BANKS.

3.—UNCLE TOM'S CABIN.

F G
6 H 5
7 8 4
A B
C D
1 2 3
Each dot represents a letter.

From 6 to 5 is a clown; 8 to 4, placed in possession of; 2 to 3, unmoved by pity; 7 to 1, oral account transmitted from father to son; 8 to 2, a place for holding water; 4 to 3, falling in autumn; 6 to 7, residence of a prince; 6 to 8, to grant; 5 to 4, past tense of bowing the head. Chimney: F to H, part of a pig; F to G, female of birds; H to I, mire; G to I, a nickname. Door: down, fear; a state; across, a metal; 1 to 2, one who relates. Windows: A, across, a place for holding grain; a color; down, design; to bow; B, across, to help; one of God's works; down, design; sound of a dog; C, across, a verb; part of a bird; down, something for taking seeds out of cotton; a vessel; D, across, a boy; to possess; down, deep; home of a tiger; E, across, a fruit; besides; down, Timothy; soaked with water. J. S. CERRAR, Brussels.

4.—HIDDEN RIVERS.
1. Did your mamma ask her to come?
2. Did you see them bathing?
3. That weed is a very troublesome one.
4. Then it hit him in the eye.
5. This is for the little girl.

ETHEL MCCREA.

5.—CHARADE.
In days before the "golden one,"
Ere Athens' power had begun,
She paid to Minos, king of Crete,
A yearly tribute, death to treat,
One hundred youths and maidens young
Across the whole were borne along;
And in a labyrinthine cave
A banquet to a monster gave.

FEBRUARY 15, 1907
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To stop the awful sacrifice,
A noble Greek planned a device.
He begged to fill a victim's place,
The Minotaur's retreat to trace.
He won King Minos' daughter's love,
Before he sought the fatal grove,
Who furnished him a silken thread,
The labyrinth's return to tread.
He found the Minotaur at length;
And in the greatness of his strength,
And love for Ariadne fair,
He slew the monster in his lair.
Then to the princess hastened fleet,
And with her sailed away from Crete.
And Athens hailed her hero great,
Last honored subject in the state.

CHARLES S. EDWARDS.

1. P. P. of to gain.
2. In a raised posture.
3. To divest.
4. Pride of prosperity.
5. To be of no importance.
6. Small animals.
7. An abode.

CLARA ROBINSON.

Answers to January 1st Puzzles.

(OMITTED BY MISTAKE.)
1—Be noble, and the nobleness that lies in other men, sleeping, but never dead, will rise in majesty to meet thine own. 2—A Happy New Year.

3—Gems will no man's life sustain,
Best of gold is golden grain.
4—Remorseful. 5—Owe—woe. 6—Stare—tare; sear—ear;
sore—ore; praise—raize; fair—air; lone—one.

Answers to January 15th Puzzles.

1—Toronto, Moscow, Salem, Madrid, Springfield, Lima, Naples.

2—Prayer is the simplest form of speech
That infant lips can try;
Prayer the sublimest strains that reach
The majesty on high.

3— M
R A S
R O G U E
M A G U A R I
S U A V E
E R E



4—At-tire. 6—Catalogues.

SOLVERS TO JANUARY 15 PUZZLES.

J. S. Cramer, Hattie Macdonald, Addison M. Snider, Carl J. King, John Hampden McIntosh, Ada M. Jackson; also A. M. Jackson for January 1st puzzles.

American Skies.

The sunny Italy may boast
The beautiful tints that flush her skies,
And lovely round the Grecian coast,
May thy blue pillars rise.
I only know how fair they stand
About my own beloved land.

And they are fair, a charm is theirs
That earth—the proud green earth—has not,
With all the hues and forms and airs,
That haunt her sweetest spot.
We gaze upon thy calm, pure sphere,
And read of heaven's eternal year.

Oh! when, amid the throng of men,
The heart grows sick of hollow mirth,
How willingly we turn as then
Away from this cold earth,
And look into thy azure breast
For seats of innocence and rest.

—William Cullen Bryant.

"Count up your mercies," girls, and see how many they are; then count up your chances for receiving more mercies, and find out how even more numerous they are. If you do not get any comfort out of this, why you haven't counted right. You have left hundreds uncounted. Then look closer and try it over again.—A. H. Ryder.

NOTICES.

Dips for killing vermin on cattle and sheep are coming more in demand every year. An energetic effort is being made to supply the demand. In another column that old and well-known firm, Hugh Miller & Co., of Toronto, advertise their preparation known as "Miller's Tick Destroyer." Further particulars regarding it can be obtained by communicating with them or inquiring for it from druggists throughout the country.

John A. Bruce & Co., seed growers and merchants, of Hamilton, Ont., have sent out their 46th annual illustrated catalogue of farm and garden seeds, etc., which indicates that they have been continuously in the same business since 1851, which further indicates reliability and careful business management. The present issue (for 1897) bears beautiful lithographed covers, having on the front page a handsome bouquet of a variety of sweet peas in typical hues. The back cover page is charmingly decorated with natural representations of aster, nasturtiums and pansies of various varieties. While popular flowers receive careful attention, vegetables for garden and field, as well as corns, grains, clovers, and field grains, are dealt with understandingly. Garden requisites and florists' supplies are also catalogued. Send for a catalogue.

Wm. Ewing & Co., seed merchants, Montreal, an old and well-known firm, have issued an attractive and useful 100-page catalogue for 1897. Eight pages are devoted to carefully selected novelties in flower and vegetable seeds, several of which are from Messrs. Sutton & Sons, of Reading, England, who have a world-wide reputation as introducers of select varieties. Among these are included varieties of beans, beets, corn, celery, onions, peas, radishes, tomatoes, and turnips. Some of these should prove decided acquisitions. Eleven pages are devoted to agricultural seeds, such as grains, grasses, etc., and considerable space to cattle and poultry foods, farm and garden tools, insecticides, and fertilizers. In order to encourage large orders and more economical buying, Messrs. Ewing make a liberal discount where several neighbors club their orders together. Our readers should get a copy of this catalogue.

ADVANTAGES OF ALBERTA.

Messrs. Oeler, Hammond & Nanton, Calgary and Edmonton Railway, Land Department, Winnipeg:

Dear Sirs.—You ask me for my opinion of Alberta as a field for immigration at the present time. It is unnecessary to reiterate what has been so often said of the splendid natural resources, conditions and features of the district of Alberta, or to further refer to the richness of the soil, the vast area and nutritive qualities of the pasturage, the never-failing supply of the purest water, the abundance of coal, and of timber for both building purposes, fencing or fuel, and the exceeding healthfulness of the climate; but only to say that Alberta embraces all the natural elements necessary for the building up of a great country. One important factor, however, for the successful development of the magnificent resources of Alberta to their fullest extent has been lacking until now. I refer to the absence of a constant, reliable, and favorable cash market for the many products and commodities which Alberta is so well able to raise and produce. This cloud has been swept away, however, by the extraordinary development of the mining resources of British Columbia; opening up and creating, as this has done, an immense cash market for our very doors for horses, cattle, sheep, hogs, grain and fodder, dairy products, poultry, eggs, etc., etc., for which there is every prospect of a constant and increasing demand, a demand far in excess of Alberta's ability to supply for years to come. So there is, at the present time, every reason for the greatest encouragement and feelings of confidence as to the future, and so soon as these improved conditions become universally known I think we may look for a natural flow of immigration to Alberta, and an immigration of settlers of the right class—experienced farmers looking for a suitable field for the profitable employment of their capital and labor. The country, both north and south of Calgary, possesses and holds out in my opinion, every requirement for mixed farming, the country south being eminently adapted to the raising of cattle and live stock generally, and for dairying operations, whilst that lying north of Calgary is more suitable to the growing of grain, breeding and feeding of hogs, dairying, poultry raising, etc., in connection with which operations cattle raising and feeding can be carried on to some extent. My opinion is that everything points to a bright immediate future for Alberta. I am, yours truly,

THOMAS STONE,

Chairman Alberta Branch Western Canada Immigration Association.

For Sale or To Rent (WITH OR WITHOUT RETAIL MILK AND CREAM BUSINESS),

150 acres, near Brantford; No. 1 land; stabling; windmill, silo, and heavy brick house, furnace, etc. Prices and terms to suit the times. Milk and cream taken for rent or interest if desired; the best opening in Canada for live Dairyman with established wholesale or retail trade.

Address DAIRYMAN, Box 557, London, Ont.

Awards in 1896.

FIRST place at Government spraying contest.
SILVER MEDAL at Industrial Exhibition, Toronto.
BRONZE MEDAL, at Western Fair, London, as whitewashing machine.
DIPLOMA everywhere shown.
We have the cheapest as well as the best spraying apparatus made in the world. Remember, our Spramotor is all brass, and is arranged for spraying all kinds of fruit and vegetables. Send \$3.00 stamp for 68-page treatise on the "Diseases affecting fruit trees, and their remedies."

Testimony of W. M. Orr,

Superintendent Experimental Spraying under the Department of Agriculture for Ontario; Fruitland, Feb. 4th, 1897.

W. H. Heard, Esq., Manager Spramotor Co., London, Ont.:
DEAR SIR,—I am pleased to be able to inform you that the fifteen Spramotors that you furnished for the experimental spraying of fruit trees, conducted by the Department of Agriculture of Ontario, for 1896, gave entire satisfaction. Yours truly, W. M. Orr, Supt.

AGENTS WANTED.
Spramotor Co., 357 RICHMOND ST., LONDON, ONT.
Mention FARMER'S ADVOCATE.



Read Its Advantages!

Our Fence contains all the claims made by other companies, besides having the following exclusive points:—

Highest award at the World's Fair; more weight; more strength; heaviest stay; greatest supporting qualities; the only diagonal brace (secured in the lock); no remnants; repairing of old fences; equal strain on all wires over grades; requires less capital; can build high or low, close or open; accommodates itself to any condition. The "Missing Link," the Jones Flexible Clamp.

Write for Catalogue. Agents wanted in unrepresented districts.

The LOCKED-WIRE FENCE CO. (Ltd.), 307 Bathurst St., LONDON, ONT.

February Offering:

Improved Yorkshire Swine,
Shropshire Ewes in lamb,
Shetland Pony.

RICHARD GIBSON,

DELAWARE, ONT.

Public Sale of SHORTHORNS

AT MAPLE LODGE STOCK FARM

ON THURSDAY, 25th MARCH, 1897.

We will sell, by public auction, about 20 choice Shorthorns from the Maple Lodge and Springhurst herds, one-half of which will be bulls. Send for CATALOGUE.

JAS. S. SMITH, H. & W. SMITH,
Maple Lodge P.O., Ont. Hay P. O., Ont.

Dispersion Sale!

ON APRIL 6th NEXT

Over 50 Shorthorns

and a lot of exceptionally

Fine Heavy Draft Mares.

Everything offered REALLY GOOD.

Fuller particulars in March issues.

JOHN I. HOBSON, Mosboro, Ont.

J. C. CLARK, Woodroffe Stock Farm

Ottawa, Ontario.

Three Clydesdale Mares

Weighting from 1,350 to 1,500 pounds, and their colts from 1 to 3 years old. Choice young Yorkshires of both sexes. Choice Young Ayrshires of both sexes. For Sale Cheap.

1864, HILLHURST FARM, 1894.

BAGGONY HORSES,
Shorthorn and Aberdeen-Angus cattle, Shropshire and Dorset-Horn sheep.

M. H. COCHRANE,
1847-70 Hillhurst Station, P. Q.

CLYDESDALES.

I have on hand some good Clydesdale fillies and stud colts, with good breeding, that I will sell very reasonable.

S. J. PROUSE, Ingersoll, Ont.

THE GRAND VALLEY STOCK FARM

G. & W. GIER, Props., Grand Valley, Ont., Breeders of Short-horns and Imp. Yorkshires. We offer for sale young bulls, cows and heifers of choice breeding and good quality at very low prices; also choice young Yorkshires of both sex. 12-7-0



FOR SALE! 10 SHORTHORN BULLS

and a few heifers, nearly all from imported cows and got by an imported bull. 22-2-f-om

JOHN ISAAC,
Kineller Lodge, Markham, Ont.

HAWTHORN HERD

of DEEP MILKING SHORTHORNS.

FOR SALE—Four young Bulls, three reds and one roan; also Heifers, all got by Golden Nugget—17548—, and from AI dairy cows. WILLIAM GRAINGER & SON, 15-7-om Londesboro, Ont.

BOOK TABLE.

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

Prof. G. E. Day, Agriculturist at the Ontario Agricultural College, has issued a bulletin (No. 104) of special interest to dairymen who desire to study from a scientific standpoint the principles of feeding and the composition of foods and formulating rations.

The Chicago Canadian-American, edited by Mr. Robt. Matheson, formerly of Clinton, Ont., certainly eclipsed all the previous efforts by the holiday number issued some time ago. It was superbly illustrated. The Canadian of that city especially should feel proud of so fine a publication.

Under the inspiration of an improved outlook for Canadian fruit-growing, our old friend, the Canadian Horticulturist, has blossomed out in a new dress for 1897. Its pages, too, are enlarged and other improvements made. The hearty support of the fruit-growing fraternity which it receives is well deserved.

The Provincial Board of Health has issued pamphlet No. 1, "Meat and Milk Inspection," containing a copy of the Ontario Act providing for the inspection of the meat and milk supplies of cities and towns, plans of abattoirs for towns of 5,000 population, and a reprint of a portion of the annual report of Dr. F. H. Bryce, secretary, in reference to contagious diseases in cattle and cattle inspection.

A few years ago an excellent little treatise was published, known as "Potaab in Agriculture." The German Kall Works, St. Nassen, N. Y., have recently published a new edition containing many valuable improvements on the original. Its contents embody a collection of results obtained with facilities at American experiment stations, showing the advantage of using fertilizers and some fertilizers over others. While the book is certainly worth a price, it will be sent free to any who apply for it. It contains 50 pages of useful reading.

The farmer's garden very frequently gives the unjust impression of observing peasant; but that its owner must of necessity be an indifferent farmer; in fact many farmers have abandoned the small kitchen garden altogether and grew their vegetables in the root field, because with the ordinary tools the garden patch cannot be kept clean without much more work than can be found time for. By the hasty perusal of the "Planet 32" catalogue of garden tools for 1897, issued by S. I. Allen & Co., Philadelphia, Pa., we were astonished to learn what had been accomplished in the invention and manufacture of labor-saving tools and machinery. This firm manufactures some thirty styles of machines for planting and cultivating garden stuff, ranging in price from \$2 to \$40. Members of the firm have farmed for a quarter of a century and know what is needed. Field cultivators, wheel hoes and the like are brought to great perfection. Every farmer or gardener should send for a catalogue.

NOTICES.

We would recommend our readers to secure a copy of the '97 catalogue issued by A. G. Hull & Sons, St. Catharines. It contains brief practical directions for transplanting trees, shrubs and vines, of which they make a specialty. The style of the catalogue is an improvement on previous ones, and is not peddled out with a host of things for which the farmer has no use. They are making a special feature of several varieties of famous potatoes and Barred Plymouth Rock eggs for hatching.

A beautiful floral collection adorns the front cover of J. A. Simmers' (Toronto) annual general seed catalogue for 1897, and the "People's" superb collection of vegetables the back. Among the novelties announced are the "New Imperial Tomato," "The Light Cabbage," "Asparagus Lettuce," "The Feast Egg Plant," "New Golden Rainy," "First of All Sweet Corn," "Simmers' Mammoth Prize Pumpkin," "Roger's Lima Wax Bean," "Matchless Flat Dutch Cabbage," and others. A great deal of space is justly devoted to farm seeds, garden requisites, and supplies for poultrymen and bee-keepers. A growers' competition for three prizes of \$50 each is also announced.

FOR SALE—Pure-bred Shetland and Welsh Ponies, imported and prize winners. Stallions, Colts, and Brood Mares in foal. Prices low. Also Shropshire Sheep. Address, Box 823, Montreal, Que. om

GOSSIP.

Mr. Thos. A. Sharpe, Superintendent of the British Columbia Experimental Farm, in renewing his subscription, says: "Let me add that the FARMER'S ADVOCATE continues to grow more valuable with every issue."

Capt. Young, of Tapperville, Ont., makes a change in his advertisement for this issue, offering a few extra good Poland-China boars. His Jerseys are doing well, including Beulah Pegg's 15101 heifer calf dropped on Christmas Eve.

John Miller, Markham, Ont., writes: "Will you be kind enough to change my advertisement from bulls to seed oats. I have sold all my bulls but one. I have sold six bulls and two heifers. I never saw so much demand so early in the season."

Walter I. Twiddle, Wentworth Co., Ont.: "I would rather have the FARMER'S ADVOCATE than half a dozen other papers. We would not think of trying to farm without the ADVOCATE. My brother says the last number ought to make a man rich."

W. R. Smith, Huron Co., Ont., writes: "The different opinion in regard to growing and fattening cattle (see 15th and Feb. 1st issues) is a grand feature to all interested in that line. Excuse my delay in renewing. Wishing you continued success with your excellent paper."

Mr. A. McLean Howard, Jr., Toronto, has sold to Mr. Walter St. Hart Massey, of the Massey Manufacturing Co., a nice selection of ten head from his Glen Duart herd of Jerseys. Mr. Massey recently secured a fine farm adjoining Mr. Howard's, of which he intends to make a model one in respect to cattle improvements and general management. He has named it "Dentonia Park Farm." Mr. Howard has also sold one bull and one female to Georgina Hastings, Deer Park, Ont., and two females to Mr. Clay, Toronto.

W. G. Pettit, of Freeman, Ont., writes under date of Feb. 10th: "My Shorthorns were never in better shape. The eight young bulls advertised in this issue are all short-legged, thick, fleshy fellows. My cows and heifers are all in fine condition and milking nicely. I have sold all the breeding ewes I had for sale at good prices and have an excellent lot of ewe lambs for next year's trade. The demand for rams was not as good as usual last fall, but expect to see an improvement next fall. I intend giving some better records of Shorthorn cows next month."

Mr. H. K. Fairbairn, Rose Cottage Stock Farm, Thedford, Ont., writes: "Our Shorthorns are doing nicely. The calves dropped since the fair are five heifers and one bull. The dam of the red bull calf shown at Toronto and London produced an exceedingly fine heifer calf in October, equally as promising as her full brother which I retained for a stock bull. This cow is now safe in calf to Mr. Nicholson's 'Indian Brave,' from which we look for something good. The herd now numbers twenty head. We have three young bulls for sale—good ones. Our stock bull has done extra well since we finished showing. He is developing into a massive animal, with robust constitution and good feeding qualities. We sold a full brother of this bull at Toronto Fair, 1895, to Mr. John Thom, Meaford, Ont. We have a Shorthorn cow milking 46 pounds per day. We have sold eight head since November and have a few good ones yet for sale."

NOTICES.

The Hamilton Business College celebrated its fourteenth anniversary by a banquet recently, attended by between 75 and 100 students and ex-students of that excellent commercial institution. Mr. J. T. Middleton, M. P. P.; Mr. W. A. Robinson, President of the Board of Trade; Mr. W. A. Phillips, Principal of the St. Thomas Business College; Rev. H. G. Miller; Mr. Alex. Muir, B. A., Toronto; Mr. Spencer Howell, and other prominent persons were present and delivered addresses. President C. R. McCullough occupied the chair.

Simmers' General Annual Seed Catalogue for 1897 is as well if not better gotten out than any of its predecessors. The representations and descriptions of the various vegetables, flowers, and other crops are true to nature, not being overdrawn as in many seed annuals sent out to beguile the unwary into preferring the goods thus advertised. We notice that \$90 in cash are offered in prize competitions as follows: \$30 divided into \$10, \$5, \$5, \$4, \$3, and \$2 for three heaviest specimens of Simmers' Improved Giant Short White Vokes Carrot; also \$30 in six similar prizes for Simmers' Mammoth Prize Pumpkin, and \$30 similarly divided for Simmers' German Brunswick Cabbage. Among the novelties and specialties offered are Rodgers' Lima Wax Bean, Simmers' Extra Early Beet, Gilt Edged Cauliflower, New Imperial Tomato, Matchless Flat Dutch Cabbage, Sweet Corn ("First of All") and others which this catalogue will indicate. It can be secured for a post-card addressed to J. A. Simmers, 147 to 151 King St. East, Toronto, Ont.

The Mann Manufacturing Co., Ltd., of Brookville, Ont., whose advertisement appears in each issue of the ADVOCATE, are turning out a line of cultivators, discs, harrows, and seeders which are bound to grow in favor with farmers wherever they are known. Their "Giant" sectional steel cultivator with or without seeder attachment, has many advantages over ordinary spring-tooth cultivators, having strong steel frame, in least number of parts, improved pressure device and light draft. To show its superiority in regard to its taking hold of the ground, it is only necessary to state that this cultivator has been largely used by corporations to loosen the ground for road making and grading, and it is claimed that even "macadam" has been torn up by the use of the "Giant" cultivator. Their "Giant" steel disc harrow, with steel beam, ball bearings, chilled boxes, and best tempered, rolled edge discs, gives great satisfaction, combining strength and efficiency with lightness of draft and durability. The solid steel Diamond harrow, in three or more sections, fills the bill for a strong, moderately light and thorough working pulverizer, and at a price to suit the times. This Company has been doing business for many years and is growing in favor with the farmers all over the Dominion, being reliable and straightforward in their dealings.

Arthur Johnston,

Greenwood P. O. and Telegraph Office,



HAS FOR SALE AT EXCEEDINGLY LOW PRICES

17 EXTRA GOOD SHORTHORN BULLS 17

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

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

CARGILL HERD OF SHORTHORNS.

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

H. CARGILL & SON, Station on the farm. Cargill Stn. & P. O.

FOUR SHORTHORN BULLS from 4 to 16 months, and COWS and HEIFERS of various ages.

Large English Berkshire Pigs ready to ship. A grand lot of Black Minorca Cockerels at \$1 each. Correspondence solicited; inspection invited. MAC CAMPBELL, Northwood, Ont. Lewisville Station, G. T. R. 21-2-y-o

RIVER BOW STOCK FARM.

B. SMARY & SONS, Croton, Ont., Breeders of Short-horn Cattle, Poland-China, Duroc-Jersey, and Chester White Swine, and Leicester Sheep. We now offer for sale five good young bulls, and also heifers of choice quality and breeding, sired by Chief Captain, a son of Indian Chief. Young pigs of both sexes & all ages at exceedingly low prices.

H. K. Fairbairn, Thedford, Ont., Breeder of pure-bred Shorthorns. I now have for sale two good young bulls, 11 and 13 months old, of choice breeding. Will sell cheap, considering quality. 22-2-y-o

A. J. WATSON, CASTLEBERG, ONT. (ARLTON FRONTVIEW FARM), breeder of choice SCOTCH SHORTHORNS. Young stock of either sex, and choicest breeding, for sale at reasonable prices. Correspondence solicited. Bolton Station, C. P. R. 22-2-y-o

F. BONNYCASTLE & SONS, CAMPBELLFORD, ONT., Breeders of Short-horn Cattle, Cotswold Sheep and Berkshire pigs. Heifers, calves and bull calves for sale at prices to suit the times. 12-2-y-o

4 Scotch Shorthorn Bulls for Sale Ten to thirteen months old, from Duchess of Gloster, Lovely, and Nonpareil dams, and sired by Imported King James. Also a few Partridge Cochon Cockerels for sale, \$1.50. 15-1-y-o H. I. ELLIOTT, Danville, P. Q.

THOS. ALLIN & BROS. LAKE VIEW FARM, OSHAWA, ONT., Breeders of CLYDESDALES, SHORTHORNS, and SHROPSHIRE. Have 1 yearling bull and 1 two-year-old bull (sired by Duke of Lavender). Will go cheap. 4-2-y-om

For Sale—A yearling SHORTHORN BULL, sired by British Statesman (imported). Also three young BERKSHIRE BOARS, eligible for registration. Hard-times prices. Correspondence solicited. F. A. GARDNER, Peel Co., Britannia, Ont. 22-2-y-o

ADVERTISE IN ADVOCATE

100 BEST EVERGREEN SEEDLINGS

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

D. HILL EVERGREEN SPECIALIST, DUNDEE, ILL.

W. G. PETTIT, FREEMAN, ONTARIO,

BREEDER Shorthorns, Shropshires, and Berkshires OF Offers for sale eight young Shorthorn bulls from 12 to 18 months old (4 reds and 4 roans), of very choice quality and breeding. Price, \$50 to \$75 each. Four heifers and two young cows in calf, twenty ewe lambs, and a choice lot of young Berkshire sows and boars.

James Cottingham, RIVERSIDE FARM, Ormstown, Que.,

Breeder of Ayrshire cattle. Herd is headed by the prize-winning bull, White Prince of St. Anne's—6408—choicely bred stock for sale at all times, including some very choice young bulls and heifers. 4-2-y-o

AYRSHIRES FOR SALE.

Several good yearling bulls by Earl of Percy and Prince Leopold, also cows and heifers. My spring calves will be by the noted bulls White Prince, Sir Colin, and Earl of Percy. Prices right. 4-2-y-o F. W. TAYLOR, Wellman's Corners, Hoard's St.

Thos. Drysdale, Allan's Corners P. O., Quebec,

Breeder of high-class Ayrshires, headed by Lord Sterling, winner at Montreal '95. Extra choice young bulls and heifers for sale. Farm 1 1/2 miles from Bryson St., G. T. R. 4-2-y-o

THE GLEN STOCK FARM

Our stock comprises Clydesdales, Ayrshires, and Shropshires. High-class Ayrshires a specialty. We are making a special offering of ten very promising young bulls, and a number of very choice cows and heifers of the heaviest and richest milking strains, any of which will be sold at very moderate prices. We also have Rough-coated Scotch Collies for sale, eligible for registry. 1-y-om

Choice Ayrshires of deepest milking strains. Largest and oldest herd in Ontario. We have choice young stock of both sexes sired by Leonard Meadows, a sweepstakes bull at Ottawa. Also choice Shropshires, and a fine lot of Berkshire pigs for sale. Visitors met at Queen's Hotel. Give us a call. O. J. YUILL & SONS, CARLETON PLACE, ONT.

AYRSHIRES - AND - YORKSHIRES.

The largest herd in the Province of Quebec; selected from deep-milking strains. Also choice Yorkshires. Orders booked for young pigs. W. F. & J. A. STEPHEN, Trout River, Que.

OAK POINT STOCK FARM

Ayrshires FOR SALE.

I have now for sale a choice lot of young bulls and heifers of fine quality, and bred from best milking strains. Particulars on application. J. B. CARRUTHERS, Kingston, Ont. 17-y-o

Maple Cliff HERD OF Ayrshires

Are noted for their successful show-yard career. Choice quality and heavy milking families. A few exceptionally choice young animals of both sex now for sale. Prices in keeping with the times. For particulars address

ROBERT ROBERTSON, Prop., 16-2-y-om COMPTON, QUE.

FOUR AYRSHIRE BULLS FOR SALE

Two one yearlings and two two years old. Good blood. M. BALLANTYNE, 107 St. Mary's P. O.

GOSSIP.

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

We direct attention to the announcement in our advertisement column of a public sale on Thursday, March 25th, of Shorthorn bulls and females from the herds of Messrs. J. S. Smith, Maple Lodge, and H. & W. Smith, Hay, Ont. These gentlemen are widely known as progressive and up-to-date breeders and feeders, and their public sales have always been characterized by fairness and honorable dealing. Read their advertisement and send for catalogue.

MESSRS. HUNT & COLTER'S CLYDESDALES.

In the January 1st issue of the FARMER'S ADVOCATE we took occasion to refer to the breeding of Messrs. Hunt & Colter's (Brantford, Ont.) importation of Clydesdale stallions elsewhere advertised in our columns. We have since then had an opportunity of examining them, and found them to be an excellent lot, quite in keeping with their excellent pedigrees. They are, without exception, a robust, round-bodied, deep and long-quartered lot, exhibiting typical Clydesdale character in every particular. Their quality of limb, feathering, and depth of rib seem faultless, while his underpinning possess that firmness and quality that pleases the eye of the Scottish Clydesdale critic. His pasterns, feet, and action are at once pleasing and faultless. The entire lot are in excellent stud condition, being healthy, robust and vigorous—a credit to the groom in charge. These horses are comfortably stabled at the Queen's Hotel, Brantford, where they can be seen at any time.

MICHIGAN OXFORD DOWN SHEEP BREEDERS.

At Flint, Mich., on February 2nd, it was decided to organize a Michigan State Oxford Down Sheep Breeders' Association. All applicants for membership must be members of the American Oxford Down Record Association. The time for receiving charter members was extended to Sept. 1st, 1897, when it will close. The membership fee was fixed at two dollars for all charter members, and the regular membership fee after Sept. 1st, 1897, shall be five dollars. A person eligible to become a member of the Association on or before Sept. 1st, 1897, must be the owner of seven or more registered Oxford Down sheep, and to be eligible to become a member after Sept. 1st, 1897, must be the owner of ten or more. The officers of this Association are members ex-officio of the Board of Directors.

The following officers were elected:—President, H. J. DeGarmo, Highland; Vice-President, W. J. Murphy, Cass City; Secretary, B. F. Miller, Flint; Treasurer, W. A. Atwood, Flint. Board of Directors—L. N. Olmsted, Muir; W. J. Webber, Reese; Ed. S. Lee, Flint; N. D. McNeil, Grand Blanc; and R. L. Frary, Nottawa. The next meeting of the State Association will be held in Flint the same date as that of the A. O. D. R. A., and on the second Tuesday in January, 1898, if agreeable to the A. O. D. R. A. It was decided that there be no dues the current year of the application, but for each year thereafter there shall be one dollar annual dues. No meeting of the Board of Directors shall be legal unless called by the Secretary of this Association, who shall notify each member of the Board of the time and place of said meeting, giving notice of expected business. Any three or more members of the Board of Directors, including the Secretary, shall constitute a quorum for the transaction of the business of this Association. The Board of Directors was empowered to draw up the by-laws from time to time, as they may deem necessary.

H. BENNETT & SONS (ST. WILLIAMS) BERKSHIRES.

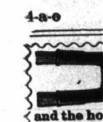
First among the sows to be noticed in the breeding pens is Flora Stewart, sired by Star One (3071) (imp.), dam Coquette 2786, bred by J. G. Snell. This sow took first prize in Toronto, 1894, under six months. She is a good sow with fine head and ears, with excellent markings, and a good coat of hair. Lady Bennett, the next sow, is the flower of the company. She was lately purchased by us from J. G. Snell. She was first in Toronto (1896) in her class. All who saw her will remember what a long-bodied sow she was, with capital head and ears and lots of muscle. She is in pig to Mr. Snell's Imp. Victor XII. Next comes Finish L. and Bennett's Choice, two grand sows, the former a long-bodied sow with good head, lots of hair and bone. She is in pig to Chieftain. Besides the sows mentioned above there are four other good sows in the pens. Coming to the stock boars, mention will first be made of Xer Xes (3949), a great show hog; a never-beaten winner at all the local fairs. His brother took first at Toronto (1896) as yearling. He has lately been sold to Messrs. Gregg & Sons to head their herd. Another good young boar is Flying Jib "4222," sired by Xer Xes. This boar is the making of a fine hog and will be parted with. This boar won six firsts and two seconds in 1896. Next comes Monarch, a yearling, claimed by Messrs. Bennett to be one of the best boars in Canada. This boar was lately added to the herd. He is a very large pig, with great hind quarters, very long-bodied, with a capital head and lots of bone. He should bring some good stock and is thought very highly of by his present owners. Two other good boars have been used in the herd the past season—Chieftain and Carholme Lad. These are two good boars and carry great blood, as some of their get amply testify. Any one requiring anything extra good in the Berkshire line should communicate with or visit the above firm.

Besides the Berkshires they have a capital lot of B. P. Rock fowls, most of which are either imported or from imp. stock. They have three good strains, Hawkins, Shoemaker, and Eckardt. Their pens are headed by three grand cockerels, two of which are imported. They intend furnishing eggs at such a price that farmers generally may invest in these profitable fowls. Their pullets are laying well now through all the cold. "Give us your order, we do the rest" is their motto.

The P. small and fences cover write a something



THE size cross so tight the One man Soud for



Prize-

I have of present on of the largest and best herds in Ontario, which has been very successful in the Prize ring. They are deep milkers and of a large size. Bulls and cows are heifers for sale always on hand.

JAS. I.

GLEN My herd of the best stock-able, offering you and heifer sponded for importation like Thos. JNO. A. M.

Maple

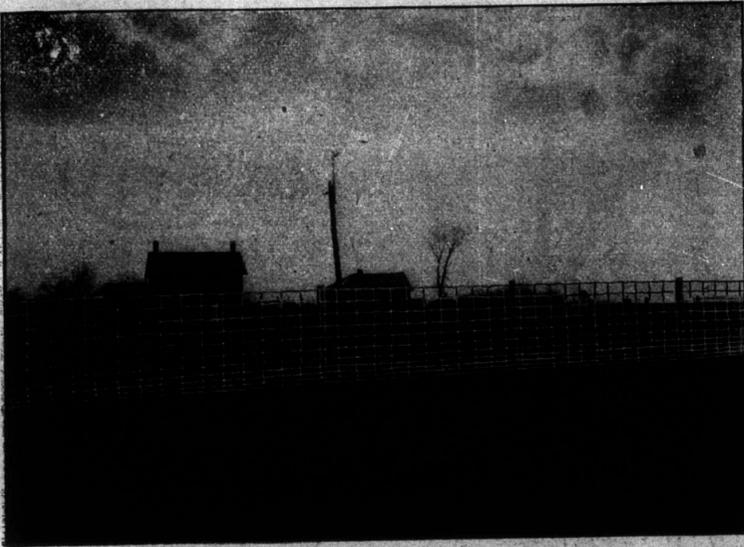
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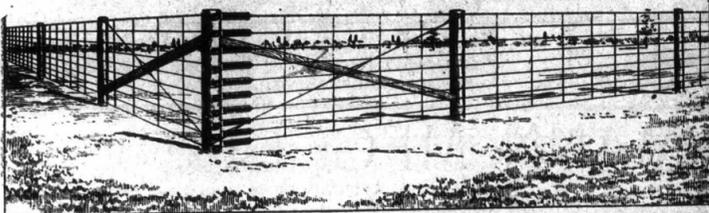
GLEN D HERD

Two ver fit for im For further om



This Page Woven Wire Fence seems to be the only perfect fence. It will turn everything, small and great, except wind and snow. More miles of it in use than all other woven wire fences combined. If you want some attractive literature containing a lot of nice pictures, write a card to THE PAGE WIRE FENCE CO., Walkerville, Ont., and they will send you something that will please you.

Gem Fence.



THE GEM FENCE MACHINE is what every farmer should have. It will weave any size cross wire, large or small, on any kind of wire—Barb, Twisted, Braided or Plain, and so tight that cross wires cannot be shifted. Easily operated. Nothing to wear out or break. One man can weave 40 rods a day. Price of machine can be saved in 30 rods of fencing. Send for our fence paper.

McGregor, Banwell & Co., WINDSOR, ONT.

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 Dehornor Mfg. Co., Picton, Ont., Can.

Prize-Winning AYRSHIRES FOR SALE.

I have at present one of the largest and best herds in Ontario, which has been very successful in the prize ring. They are deep milkers and of a large size. Bulls, cows and heifers for sale always on hand.



JAS. McCORMICK & SON,
ROCKTON, ONT. 30-2-y-o

GLENGARY STOCK FARM.

My herd comprises the best strains procurable. Am now offering young bulls and heifers descended from the importation of the late Thos. Brown. PRICES RIGHT.



JNO. A. McDONALD, JR., Williamstown, Ont. 4-2-y-o

Maple Cliff Dairy Stock Farm

Ayrshire Cattle, Berkshire and Tamworth Pigs.

We have for sale three young bulls, including Labor Day, 1st at Ottawa last fall, as yearling, and one four months old, from 1st prize diploma cow.

R. REID & CO., Hintonburg, Ont. 20-1-y-o

JOHN PULFER, BRAMPTON, ONT.

Breeder of choice Jersey reg. and high-grade Jerseys of fine quality. Also TAMWORTH SWINE. Young stock always for sale at prices that should sell them.



GLENDUART Jersey Cattle HERD...

Two very fine registered bulls, solid colors, fit for immediate service, will be sold cheap. For further particulars apply to—

A. McLEAN HOWARD, Jr., Toronto.

D. H. KETCHESON

MENIE, ONTARIO. BREEDER OF CHOICE A. J. C. O. JERSEYS (St. Lambert and St. Helier strains) and REG. SHROPSHIRE.

A few fine shearing rams and ewes for sale at prices to suit the times. 12-2-y-o

SPECIAL OFFER FOR DECEMBER.

LEE FARM REGISTERED JERSEYS.

4 young Cows and Bull, \$300
4 2-year-old Heifers and Bull, 250
4 1-year-old Heifers and Bull, 200
4 Heifer Calves and Bull, 150

Well-bred, good colors. Short of feed. Must reduce stock. Address—

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

WILLOW GROVE HERD OF JERSEYS.

Sweepstake herd of 1894. Stock from imp. bulls and imp. and home-bred dams of St. Lambert, St. Helier, and Signal strains.

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GOSSIP.

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

Robert J. McNeil, "Crystal Stream Farm," Que.:—"We would not like to be without the FARMER'S ADVOCATE. We think it better this year than it was before. The Christmas number was excellent. Hoping you will have a prosperous year."

The Hon. Whitelaw Reid, Editor-in-Chief of the New York Tribune, has recently imported a herd of Kerry cattle from their native home, on the west coast of Ireland, and has established them on Ophir Farm, in Westchester County, N. Y. This is, so far as we know, the only herd of this thrifty little black cattle now in America.

An Order-in-Council of the New Zealand Government dealing with stock importation has been promulgated. It prohibits absolutely the introduction into that colony of all horses, cattle, sheep, swine, goats, deer, or other ruminants, of fresh meat other than frozen, of bones, horns, hoofs, hair, hides, skins, offal, or other portions of such animals.

In these days of dairy lectures and dairy literature we hear and read a great deal about testing cows in order to ascertain what they are paying for their feed. Unfortunately, too many dairy farmers look upon such an operation as being beyond the range of possibility in their circumstances. The Herd Register of the American Guernsey Cattle Club, in a late issue, shows how Governor Morton records the produce of each cow in his Guernsey herd at Ellerslie Stock Farm, Dutchess Co., N. Y. When butter-fat tests are made, composite samples are taken from the mixed milk of eight successive milkings of each animal. Frequent tests are made. Of the 83 cows completing a year's work in December, 1896, the highest milk yield was 9,223 pounds, the lowest was 3,019 pounds, and the average 5,329 pounds. The highest butter yield (85 per cent.) was 590 pounds, the lowest 172 pounds, and the average 315 pounds. Twelve cows gave over 400 pounds each of butter in twelve months, forty-five gave each over 300 pounds in the same time. The average per cent. butter-fat for the year for all cows was 5.68. The record is deficient in one important particular, that it gives no data as to the cost of milk or butter production.

Poland-China Record Company.

The annual meeting of stockholders of the Ohio Poland-China Record Company was held at Dayton, Ohio, January 27th, 1897. The attendance was good as usual, and President L. N. Bonham in the chair. At the roll call, Secretary Freigau presented each stockholder present with a neat and appropriate souvenir button. The report of Treasurer Lackey showed each balance in treasury and sinking fund, \$8,000.57.

Resolutions adopted were—That it is the voice of this organization that Railroads and Express Companies should by legislation be prevented from discriminating in the freight schedules against the carriage of freight for the farmer and breeder.

Resolved—That we urge upon the Secretary of Agriculture to formulate such rules for shipment of live stock, and especially of stock hogs intended for feeders, so that stock yards and railroad companies shall furnish clean, uncontaminated cars and pens.

Committee on Memorial reported the death of the members, C. W. Jones, Highland, Michigan; C. F. Shadle, Montpelier, Indiana; L. M. Stansell, Wenona, Illinois, and T. H. Irwin, Blueball, Ohio.

The tellers reported that 126 votes were cast and that the seven directors elected were L. N. Bonham, Oxford, Ohio; H. O. Cornell, Mechanicsburg, Illinois; E. C. Ellis, Crestview, Ohio; J. H. Lackey, Jambstown, Ohio; John R. Duffield, Somerville, Ohio; J. L. Aspy, Geneva, Indiana; John W. Cook, New Paris, Ohio.

The Board of Directors elected officers for the Company as follows: President, L. N. Bonham, Oxford, Ohio; Vice-President, E. C. Ellis, Crestview, Ohio; Secretary, Carl Freigau, Dayton, Ohio; Treasurer, J. H. Lackey, Jambstown, Ohio. Executive Committee—J. H. Lackey, John F. Duffield, John W. Cook. Vice-Presidents were appointed for 17 States.

U. S. Ayrshire Breeders' Association.

The 22nd annual meeting of the American Ayrshire Breeders' Association was held in the parlors of Stanwix Hall, Albany, N. Y., January 21, 1897. The election of officers resulted as follows: President, L. S. Drew, Burlington, Vt.; Vice-Presidents, Obadiah Brown, Providence, R. I.; H. R. C. Watson, Brandon, Vt.; B. C. Sears, Blooming Grove, N. Y.; John Stewart, Elburn, Ill. Secretary, C. M. Winslow, Brandon, Vt.; Treasurer, Henry E. Smith, Enfield, R. I. Executive Committee, for three years, J. D. W. French, North Andover, Mass.; John Bratton, White Oak, S. C.

The result of the Home Dairy test for 1896 showed two entries as follows: Geo. H. Yeaton, Dover, N. H., 10 cows, tested two days in June and two days in December, by an agent from the N. H. Experiment Station, gave 1,256 lbs. of milk, 4.13 per cent. butter-fat, 13.17 per cent. total solids, 59.83 lbs. butter-fat. The food in June being pasture by day, with one feed of hay, three quarts bran, two quarts gluten feed and two quarts cotton seed meal daily. In December, two feeds of ensilage, two feeds of hay, with five quarts bran, three quarts gluten feed and two quarts cotton seed meal daily.

C. M. Winslow, Brandon, Vt., 10 cows, tested by an agent from the Experiment Station, Burlington, Vt., gave 1,047 lbs. milk, 4.12 per cent. butter-fat, 12.89 per cent. total solids, 42.03 lbs. butter-fat. The food in June being pasture with four quarts bran daily. In December, hay, with six quarts bran, one-half quart gluten meal, one-half quart cotton-seed meal, one-half quart oil meal daily.

Voted to continue the Home Dairy tests on the same plan as in 1896.

Voted to offer special prizes at the leading fairs for butter-fat yields on the fair grounds.

The report of the treasurer showed the Association to be in a flourishing condition, with \$2,597.70 in the treasury.

GOSSIP.

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

The Glendower Stock Farm, Doogan Hills, Staten Island, N. Y., paid \$12,000 for the champion Hackney stallion, Matchless of Lonsborough, at the sale of Dr. W. Seward Webb's Hackneys, conducted by Mr. W. D. Grand at the American Horse Exchange, New York, recently.

John McMillan, Perth Co., Ont.:—"My premium Bible is just to hand. I prize it very highly, and beg to acknowledge with thanks your promptness in mailing it. All the new subscribers are very much pleased with your valuable paper, which as an agricultural journal is unsurpassed."

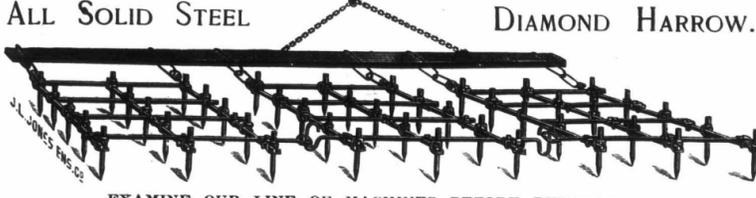
A FINE HERD OF JERSEYS.

Visitors to the Western Fair, London, Ont., during the last few years have been not a little surprised at the number and excellence of the exhibit of Jersey cattle. In the younger classes especially the competition has been very keen, and has been acknowledged to be, in some years, in advance of that seen at the Toronto Industrial; indeed, in many cases the Toronto winners have been turned down, and exhibitors from the east have confessed their surprise at the general excellence of the cattle met with. Among the most successful exhibitors at the Western have been Messrs. Humpidge & Laidlaw, of London, who in 1896 were awarded, in this close competition, eleven prizes, seven of them being first prizes, including the sweepstakes for best bull any age, on Prince Frank 33972, illustrated in this issue; sweepstakes for best cow, and the first prize for the best herd of one bull and four females. A representative of the ADVOCATE recently had the pleasure of inspecting the "Etrick" herd at the farm of Mr. Laidlaw, some 6 miles from London, where the cattle are kept, and was more than pleased with the uniform excellence of the herd. The number of registered Jerseys owned by these gentlemen is something over forty head (including calves), about fifteen of which are young cows in milk, the balance being largely made up of promising heifers in calf, a nice lot of heifer calves, and a few excellent young bulls. At the head of the herd stands the handsome and richly bred four-year-old bull, Prince Frank, bred by Mr. C. H. Babcock, Friendsburg, N. Y., sired by Dalesman, a grandson of Stoke Pogis 5th, sire of Sister of Charity (with a record of 24 lbs. 14 ozs. butter in seven days) and of eighteen other cows having records of 14 to 22 lbs. Stoke Pogis 5th was almost full brother to the famous Matilda 1th, which made a record of 30 lbs. milk daily for 16,153 lbs. in a year. He was also full brother to Stoke Pogis 3rd, sire of Mary Anne of St. Lambert, record 36 lbs. 12 ozs., and of 27 others averaging over 20 lbs. in a week. The dam of Prince Frank is richly bred and is close to imported stock from the island of Jersey. He is a bull of fine dairy form, standing on short, straight legs; has a handsome head (inclining rather to the strong masculine character, without coarseness. He has a rich yellow skin, deep body, smooth shoulders, thin withers, open ribs, large and well-set rudimentaries, and a long, flowing switch which sets him off to good advantage. He is not only a show bull, but has proved a getter of show calves, as the record of his calves and heifers at the Western Fair proves, and a more uniformly good lot of youngsters is seldom found in any herd. The females of the herd consist of pure St. Lamberts and St. Heliers, with a group of handsome imported heifers of strong miscellaneous breeding, running in seasons having numerous records in the list of 14 to 22 lbs. each. There are no old cows in the herd, and a goodly number are just coming into their prime. Amongst these are: The five-year-old Queenette, winner of first prize at the last Western Fair, a sweet cow with fine dairy form, rich yellow skin, and good udder and teats. She has recently calved, showing a magnificent udder, running well forward and back, and with good sized teats, evenly placed. The first prize three-year-old cow, St. Lambert Lucy, by Canada's John Bull 5th, a pure St. Lambert, is a very handsome young cow with well-balanced udder and rich color. St. Lambert's Jane, St. Lambert's Jeanette, St. Lambert's Grace, and St. Lambert's Allie, all by the same sire, are a quartette of handsome and richly bred young cows, all looking like workers in butter. Kitty of Glen Rouge (by One Hundred Per Cent.), coming three years old, had just dropped her first calf and had put up a show of udder development such as we have never seen equalled by a heifer of her age, being swollen all along her belly clear up to the brisket and running high up behind. She is a large, strong, useful looking young cow, with well-set teats and remarkable escutcheon, and is a pure St. Lambert in breeding. Zoie of Glen Rouge, another St. Lambert heifer, two years old, is specially worthy of mention as being handsome and promising. New Trilby, Cordonnott, Helen Varick, and Cowmag are a quartette of imported heifers from the herd of Mr. Babcock, N. Y., showing rich color, strong constitution, neat heads, and good promise as dairy cows. St. Lambert's Bonnie, second prize heifer calf at London, by Prince Frank, is a heifer of great promise, being fine in neck and shoulders, deep bodied, short legged, and rich in color of skin. Her mate, St. Lambert's Babe, is of similar type. Stella L. and Crotella are a pair of useful looking St. Helier cows, while St. Lambert's Chicora, by Prince Frank, out of Stella R., is a charming heifer and full of promise. Prominent among the young bulls is Pride of Alton, born in May, 1896 (imported in dam), got by Yogi and out of New Trilby, a very stylish and promising youngster, with handsome head and horns, high crest, deep ribs, long level quarters, rich yellow skin, and extraordinary development of rudimentary teats. He seems to have everything in him necessary to make a successful show bull and breeder. There are several other good young bulls, two of which are over a year old, strong, vigorous, and of fine dairy form; and the younger calves are all very promising.



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WITHOUT EXCEPTION, THE BEST CULTIVATOR AND SEEDER IN THE MARKET.

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

WOOL IMPROVED.—Its effect on the wool is natural, and fiber of the wool. It feeds and nourishes the fleece by keeping the sheep healthy. **HEALING PROPERTIES.**—It heals wounds and sores and insect bites in a marvelous manner. Where the wool has fallen off it restores the growth speedily. Sold in Large-sized Tins, quarts, etc.

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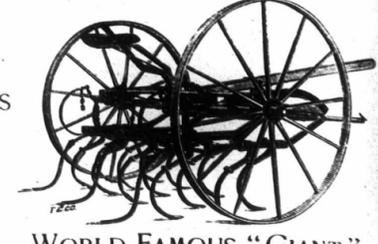
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